THE MACROECONOMIC IMPACT OF INCREASING U.S. LNG EXPORTS

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center for ENERGY STUDIES
Rice University's Baker Institute for Public Policy

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DOE Contact:
Robert Smith, Office of Fossil Energy, U.S. Department of Energy

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Prepared by:
Leonardo Technologies, Inc.

Primary Authors (Alphabetically):
Adrian Cooper, Oxford Economics
Michael Kleiman, Oxford Economics
Scott Livermore, Oxford Economics
Kenneth B. Medlock III, Rice University

National Energy Technology Laboratory
www.netl.doe.gov

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Executive Summary

Key Findings:

- **Rising liquefied natural gas (LNG) exports are associated with a net increase in domestic natural gas production.** The study finds that the majority of the increase in LNG exports is accommodated by expanded domestic production rather than reductions in domestic demand.
- **As exports increase, the spread between U.S. domestic prices and international benchmarks narrows.** In every case, greater LNG exports raise domestic prices and lower prices internationally. The majority of the price movement (in absolute terms) occurs in Asia.
- **The overall macroeconomic impacts of higher LNG exports are marginally positive, a result that is robust to alternative assumptions for the U.S. natural gas market.** With external demand for U.S. LNG exports at 20 billion cubic feet per day (Bcf/d), the impact of increasing exports from 12 Bcf/d is between 0.03 and 0.07 percent of gross domestic product (GDP) over the period of 2026–2040, or $7–$20 billion USD annually in today's prices
- **An increase in LNG exports from the United States will generate small declines in output at the margin for some energy-intensive, trade-exposed industries**. The sectors that appear most exposed are cement, concrete, and glass but the estimated impact on sector output is very small compared to expected sector growth to 2040.
- **Negative impacts in energy-intensive sectors are offset by positive impacts elsewhere.** Other industries benefit from increasing U.S. LNG exports, especially those that supply the natural gas sector or benefit from the capex needed to increase production. This includes some energy-intensive sectors and helps offset some of the impact of higher energy prices.

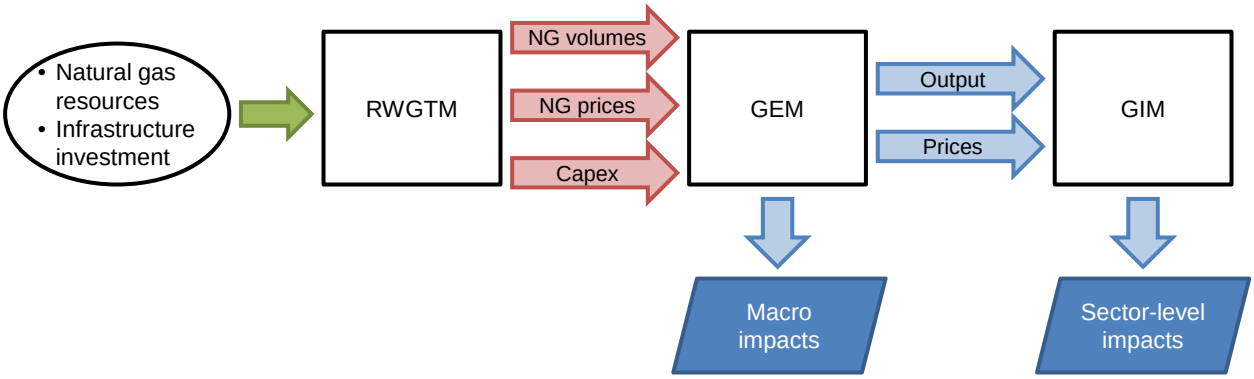
The Center for Energy Studies (CES) at Rice University's Baker Institute and Oxford Economics were commissioned by Leonardo Technologies, Inc. (LTI) on behalf of the Department of Energy (DOE) to undertake a scenario-based assessment of the macroeconomic impact of alternative levels of U.S. LNG exports under a range of assumptions concerning U.S. resource endowment, U.S. gas demand, and the international market environment. This report presents the findings of this analysis, highlighting key assumptions and impact channels. Background material describing the rationale behind this report can be found in Annex A.

The growth in shale gas production in the United States has presented a number of opportunities and challenges for the U.S. economy. On the one hand, U.S. shale gas production has lowered the domestic price of natural gas so that the United States now has among the lowest prices in the world. This has been a boon for consumers and led to gains in competitiveness for U.S. manufacturers. On the other hand, low gas prices in the United States negatively impact the profitability of U.S. domestic natural gas upstream and midstream operators, but have spurred interest in exporting LNG from the United States to higher priced markets. While selling natural gas at higher prices on the world market would increase profits for U.S. gas producers, the narrowing of the price gap between the United States and the rest of the world would erode some of the benefits that have accrued to U.S. consumers and manufacturers. Considering these potential tradeoffs, this paper examines whether it is ultimately economically advantageous for the United States to export LNG between 12 and 20 Bcf/d.

The analysis presented in this paper uses a highly specialized, multi-stage modeling approach highlighted in Figure ES1. First, the Center for Energy Studies at Rice University's Baker Institute used

its Rice World Gas Trade Model (RWGTM) to simulate various alternative futures for the global natural gas market. These output data are then input into the Oxford Economics Global Economic Model (GEM) and Global Industry Model (GIM) to simulate broad macroeconomic and sectoral impacts of the various alternative paths for the global gas market.

Figure ES1. Modeling Approach



A comprehensive set of scenarios were prepared to understand the impact of higher U.S. LNG exports under a range of circumstances for domestic and international gas markets. This was done to establish conclusions that are not dependent on any particular set of starting conditions for the U.S. or international gas markets, and to highlight the impact of increasing U.S. LNG exports under alternative domestic and international conditions. The Reference domestic case (Ref) assumes existing energy policy in the United States continues and assumptions regarding the resource endowment are consistent with those of the Energy Information Administration (EIA). The alternative domestic cases assume a higher gas resource recovery (HRR) in the United States, a lower gas resource recovery (LRR) in the United States, and a higher U.S. demand for natural gas (Hi-D).

The Reference international case assumes that current energy policies around the world—including those setting domestic prices, dictating exports/imports, and/or addressing the environment—continue unchanged, while the macroeconomic outlook outside of the United States is drawn from the Oxford GEM. We then consider sets of circumstances that result in different international demand pull for U.S.-sourced LNG—the variants considered are international conditions sufficient to support 12 Bcf/d and 20 Bcf/d of U.S. LNG exports. Table ES1 outlines the full matrix of scenarios that were considered.

Table ES1. Study Scenarios

		Domestic Scenarios			
International Demand Scenarios		**Reference**	**High Resource Recovery**	**Low Resource Recovery**	**High Natural Gas Demand**
Reference		Ref_Ref	Ref_HRR	Ref_LRR	Ref_Hi-D
Global Demand for U.S. LNG Supports 12 Bcf/d		LNG12_Ref	LNG12_HRR	LNG12_LRR	LNG12_Hi-D
Global Demand for U.S. LNG Supports 20 Bcf/d	**U.S. LNG Exports 12 Bcf/d**	LNG20_Ref12	LNG20_HRR12	LNG20_LRR12	LNG20_Hi-D12
	U.S. LNG Exports 20 Bcf/d	LNG20_Ref20	LNG20_HRR20	LNG20_LRR20	LNG20_Hi-D20
	U.S. LNG Exports Endogenous	LNG20_Ref	LNG20_HRR	LNG20_LRR	LNG20_Hi-D

The primary focus of the study is to assess the impact of U.S. LNG exports rising above 12 Bcf/d in circumstances where international demand is high enough to support 20 Bcf/d of U.S. LNG exports (the bottom three rows of Table ES1 highlighted above). Greater volumes of LNG exports support

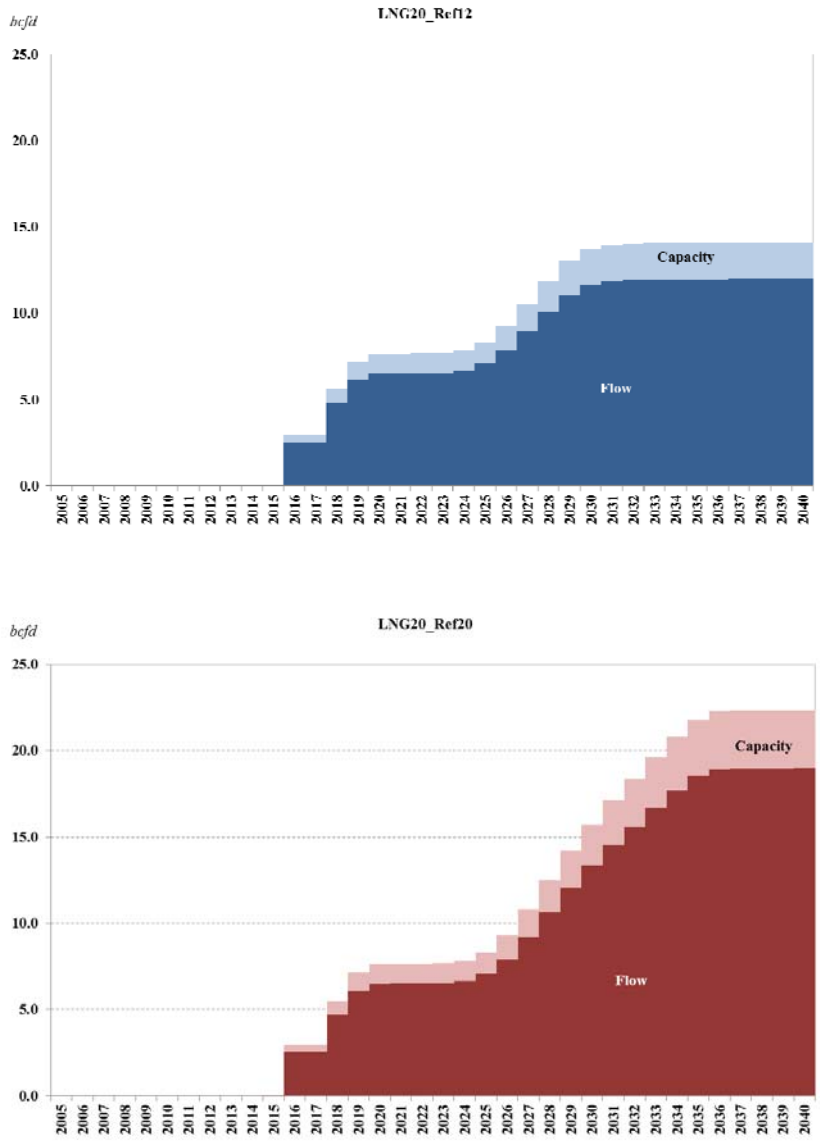
continued long-term expansion of U.S. production. The scenario analysis reveals that domestic production continues to increase throughout the time horizon when LNG export volumes can expand to 20 Bcf/d. This contrasts to the case when exports do not exceed 12 Bcf/d and production plateaus and declines slightly in the 2030s. The majority of the increase in LNG exports is accommodated by expanded domestic production rather than reductions in domestic demand, a result that reflects the very elastic long-run supply curve in North America. Greater LNG exports effectively serve as additional demand for U.S. natural gas, which facilitates expansion in the domestic upstream sector.

The analysis also shows that the spread between Henry Hub prices and other international benchmark prices narrows as U.S. LNG exports increase. Increased exports from the United States help to alleviate the highly constrained supply situation internationally, although supplies from other regions also play a role. Altogether, the spread between Henry Hub price and international benchmark prices abroad narrows with greater volumes of U.S. LNG exports, it remains large enough to support the flow of trade. In fact, when U.S. LNG exports are determined endogenously, meaning they generally exceed 20 Bcf/d, the price spreads are narrowest thereby reflecting full capture of the U.S. LNG arbitrage opportunity. Finally, the majority of the price movement occurs abroad, not domestically, with the most significant impact occurring in Asia.

In the scenarios where international demand pull is sufficient to support 20 Bcf/d of U.S. LNG exports, the export volume growth occurs primarily after the mid-2020s. Figure ES2 highlights U.S. LNG export capacity and export volumes across the 12 Bcf/d and 20 Bcf/d cases under the Reference domestic case assumptions, respectively. Of note is the fact that the two scenarios do not differ much from each other until after 2030. This occurs because international demand for U.S. LNG must grow beyond

what is already slated to begin supplying the market over the next few years, which includes Australia and already approved U.S. LNG export capacity. So, while international demand continues to increase, it must first work through a large amount of available LNG supply before turning to U.S.-sourced LNG to balance the global market.

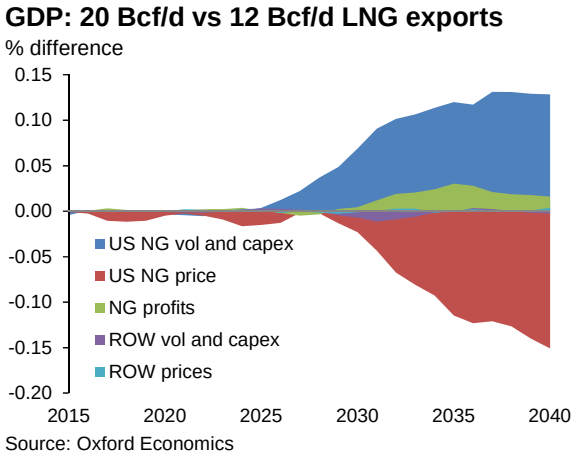
Figure ES2. LNG Export Capacities and Volumes in the LNG20_Ref12 and LNG20_Ref20 Cases



The macroeconomic impacts of increasing U.S. LNG exports to 20 Bcf/d from 12 Bcf/d can be decomposed into five main channels. These are (1) higher U.S. natural gas production and investment; (2) higher U.S. natural gas prices; (3) recycling of extra profits from the U.S. natural gas sector; (4) changes to natural gas production and investment in the rest of the world; and (5) lower international gas prices. The first two channels are the most significant for the United States and broadly offset each other.

The overall macroeconomic impacts of increasing U.S. LNG exports to 20 Bcf/d from 12 Bcf/d are small, reflecting the small size of the shocks relative to the economy overall (see Figure ES3). In the Reference domestic scenario, the increase in net gas exports is equivalent to 0.02 percent of GDP on average over 2026–2040, and the incremental investment in the gas sector associated with the increase in exports in that span is just 0.06 percent of GDP. In aggregate, the size of the economy is little changed in the long run, with GDP 0.03 percent ($7.7 billion USD annually in today's prices) higher on average over 2026–2040 than in the 12 Bcf/d export case.

Figure ES3. GDP Impact by Channel, 20 Bcf/d vs. 12 Bcf/d LNG Exports in the Reference Domestic Scenario



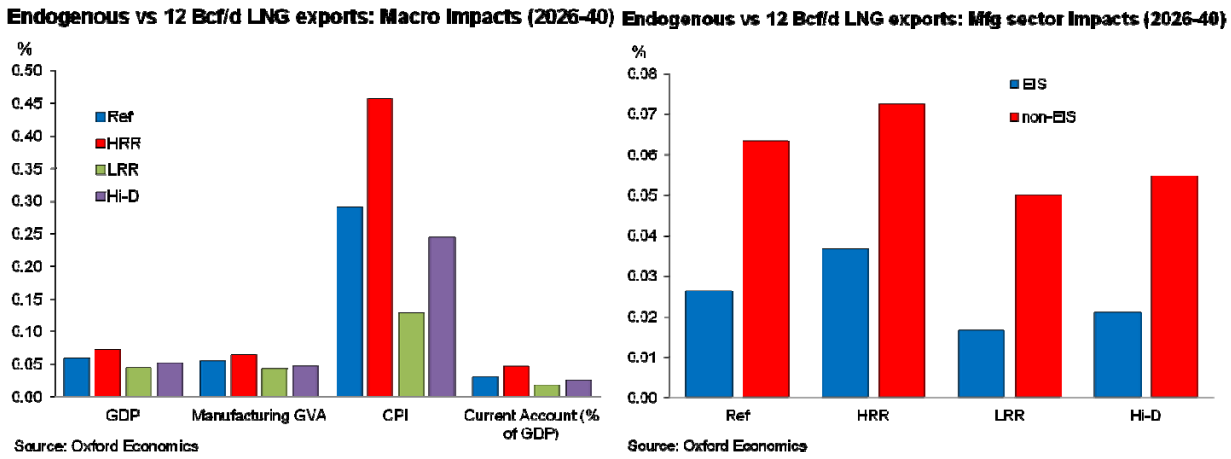
Source: Oxford Economics

Impacts vary at the sector level. Firms that supply the natural gas sector and are involved in developing the infrastructure and supply chains needed to increase production and LNG exports benefit. This includes firms in the construction and metals sectors. However, higher natural gas prices in the United States associated with greater U.S. LNG exports are negative for the energy-intensive manufacturing sectors. It is important to note, however, that even in the energy-intensive sectors—such as such as glass, cement, and chemicals—the impacts are small compared with the expected growth in output through 2040.

When U.S. LNG exports rise to their market determined level (rather being held to 20 Bcf/d), the macroeconomic dynamics are the same as highlighted above but with a slightly larger overall impact, reflecting the higher level of U.S. gas exports, production, and associated investment. The impact on Henry Hub prices is also larger, but this is not sufficient to offset the extra stimulus to the U.S. economy from greater LNG exports. In the Reference domestic case, the impact on GDP is on average 0.06 percent over the period 2026–2040.

The conclusions are robust to alternative assumptions regarding U.S. gas resources and demand. The overall gain for the U.S. economy is greatest in the High Resource Recovery (HRR) scenario as this is associated with largest increase in domestic gas production and exports, but the impacts are also positive in the Low Resource Recovery (LRR) and High Domestic Demand (Hi-D) cases (Figure ES4 and Table ES2).

Figure ES4. Economic Impacts of Increasing LNG Exports, 2026–2040



The results detailed in this report suggest that the overall macroeconomic impacts of LNG exports are marginally positive. Across the domestic cases, the positive impacts of higher U.S. gas production, greater investment in the U.S. natural gas sector, and increased profitability of U.S. gas producers typically exceeds the negative impacts of higher domestic natural gas prices associated with increased LNG exports.

Table ES2. Impact of Increasing LNG Exports, Annual Avg. Change from 12 Bcf/d, 2026–2040

	12 Bcf/d to 20 Bcf/d LNG Exports		12 Bcf/d to Market-Determined (endogenous) LNG Export Level			
	Reference	High Resource Recovery	Reference	High Resource Recovery	Low Resource Recovery	High Natural Gas Demand
U.S. Natural Gas Market (Bcf/d)						
NG Production	3.7	5.1	4.8	8.4	2.5	4.0
	4.0%	*5.1%*	*5.2%*	*8.5%*	*2.8%*	*4.1%*
NG Consumption	0.1	0.3	0.1	0.5	0.0	0.2
	0.1%	*0.3%*	*0.1%*	*0.5%*	*0.0%*	*0.2%*
NG Exports	4.3	5.1	5.4	8.5	2.7	4.3
	26%	*28%*	*33%*	*47%*	*17%*	*26%*
NG Imports	0.7	0.4	0.7	0.7	0.2	0.4
	4.2%	*2.4%*	*4.3%*	*4.6%*	*1.2%*	*2.6%*
Prices (2010$)						
Henry Hub Price	$0.27	$0.25	$0.32	$0.41	$0.19	$0.29
	4.3%	*4.7%*	*5.2%*	*7.5%*	*2.6%*	*4.3%*
NBP (UK)	$0.00	-$0.02	$0.02	-$0.04	-$0.02	-$0.03
	0.0%	*-0.1%*	*0.1%*	*-0.4%*	*-0.2%*	*-0.3%*
German Border (NW Europe)	$0.01	$0.00	$0.02	-$0.01	-$0.01	-$0.01
	0.1%	*0.0%*	*0.1%*	*-0.1%*	*-0.1%*	*0.0%*
JKM (Asia-Pacific)	-$1.23	-$1.52	-$1.51	-$2.24	-$0.84	-$1.21
	-6.8%	*-8.4%*	*-8.4%*	*-12.4%*	*-4.6%*	*-6.7%*
Macroeconomic Impacts						
GDP (annual avg., 2014$B)	$7.7	$7.3	$16.7	$20.5	$12.5	$14.4
	0.03%	*0.03%*	*0.06%*	*0.07%*	*0.04%*	*0.05%*
Employment (000s)	9.6	11.3	24.1	35.2	18.4	19.2
	0.01%	*0.01%*	*0.01%*	*0.02%*	*0.01%*	*0.01%*
CPI (level)	0.24%	0.30%	0.29%	0.46%	0.13%	0.24%
Current Account (% of GDP)	0.02	0.03	0.03	0.05	0.02	0.03
Sector Value-Added:						
Manufacturing	0.02%	0.02%	0.06%	0.06%	0.04%	0.05%
EIS	0.01%	0.02%	0.03%	0.04%	0.02%	0.02%
Non-EIS	0.03%	0.02%	0.06%	0.07%	0.05%	0.05%
Agriculture	0.01%	0.02%	0.02%	0.04%	0.01%	0.01%
Extraction	1.81%	2.39%	2.34%	3.94%	1.23%	1.90%
Construction	0.16%	0.15%	0.27%	0.34%	0.18%	0.23%
Services	-0.01%	-0.02%	0.00%	-0.02%	0.01%	0.00%

1 Introduction

The application of horizontal drilling with hydraulic fracturing has triggered perhaps the most transformative development in energy markets in recent history. The so-called "shale gas revolution" has seen production of natural gas extracted from ultralow permeability, ultralow porosity shale formations in the United States ramp up considerably. As noted in previous literature, the scale of the shale gas resource and the pace at which its production is expanding carries both economic and geopolitical implications (see, for example, Medlock, Jaffe, and Hartley [2011]).

Shale gas in the United States has grown in less than a decade to comprise about one-half of U.S. domestic production. The rapid expansion of domestic production has made the prospect of U.S. liquefied natural gas (LNG) *exports*—unthinkable just a decade ago—an emerging reality. This will impact U.S. domestic natural gas upstream and midstream operators as well as domestic economic interests farther downstream, particularly in gas-intensive industries, and raises questions about the net macroeconomic impact of the interactions and tradeoffs among LNG exporters, upstream producers, midstream operators, and domestic consumers.

U.S. shale gas production has already tangibly lowered the price of natural gas for domestic consumers. From 2003–2006, U.S. natural gas prices were among the highest in the world. However, the United States now enjoys among the lowest prices in the world. Moreover, the dramatic drop in domestic price owing to rapidly expanding domestic production has impacted fuel use in power generation—namely the substitution of natural gas for coal—and has instigated deeper discussion centering on natural gas as a bridge to a low-carbon future. In general, low-cost and abundant natural

gas reduces the impact on electricity rates of addressing a variety of environmental concerns in the power-generation sector.

Furthermore, low-price natural gas is contributing to a revitalization of the industrial base in the United States. The economic benefit at the upstream level is apparent, as employment numbers in the upstream oil and gas sector have increased to support the very active shale drilling programs, which require relatively high levels of labor input.[1] Farther downstream, there are also ongoing and planned expansions in the petrochemical and manufacturing sectors, a development fueled by low-cost natural gas. Indeed, the recent era of low natural gas prices has been widely touted as a boon to domestic manufacturers, particularly in energy-intensive manufacturing industries such as chemicals, glass, and metals.

At the same time, natural gas producers are understandably eager to take advantage of higher prices on the global market. To date, the U.S. Department of Energy (DOE) has received requests for LNG export licenses for export capacity totaling nearly 47 billion cubic feet per day (Bcf/d).[2] However, some question whether it is ultimately economically advantageous for the United States to export LNG, arguing that the price advantage enjoyed by U.S. manufacturers is a key competitive advantage. Indeed, the U.S. DOE is required to assess whether or not exports to non-FTA countries is in the public interest, a so-called public interest determination.

Further, for all of the discussion of LNG exports as new source of demand for domestically produced natural gas, high volumes of LNG exports are not a forgone conclusion (see Medlock [2012, 2014]).

[1] See Hartley, Medlock, Temzelides, and Zhang (2014) and Agerton, Hartley, and Medlock (2015).
[2] At the time of this writing, FTA license applications totaled just over 46 Bcf/d and non-FTA license applications totaled just over 41 Bcf/d.

International supply and demand conditions are important for understanding how North American natural gas fits into the global supply picture. U.S. natural gas will be an attractive source of supply to foreign consumers as long the cost to deliver is competitive with other sources of supply. Moreover, the commensurate investments in production, liquefaction, and shipping must remain attractive to investors. As such, when assessing the potential impacts of greater U.S. LNG exports it is important to consider how the North American natural gas market might evolve under different scenarios defined by variations in both domestic and international market drivers.

The primary purpose of this study is to assess the net macroeconomic impacts on the U.S. economy of greater LNG exports under a range of domestic and international market conditions. As will be expounded below, this includes alternative assumptions for domestic resource availability, domestic gas demand, and a range of international supply and demand conditions that generate different potential market pull for U.S. LNG exports. This paper assesses the impact of increasing U.S. LNG exports under these different domestic and international scenarios.

The remainder of this report is structured as follows. Section 2 outlines the modeling approach used in the study and presents the range of scenarios modeled. Section 3 describes the assumptions driving the natural gas market in each scenario. Section 4 presents the results of the analysis and highlights key drivers. Section 5 offers some concluding remarks. Finally, detailed model descriptions and detailed results for all scenarios are included in the Annexes.

2 Methodology

2.1 Modeling Approach

The analysis presented in this paper uses a highly specialized, multi-stage modeling approach. First, the Center for Energy Studies (CES) at Rice University's Baker Institute used its Rice World Gas Trade Model (RWGTM) to simulate various alternative futures for the global natural gas market.[3] Specifically, the RWGTM is used to investigate how various assumptions about international and domestic demand and resource availability could impact the U.S. natural gas market over the coming decades. Since economic, geopolitical, and technological forces can shape market outcomes in many different ways, the non-stochastic nature of the RWGTM facilitates analysis of multiple scenarios that characterize how these various factors impact current and future investment decisions.[4]

In general, the RWGTM is used to consider possible paths for natural gas investments, production, consumption, and prices—both regional and global—incorporating various economic, geopolitical, and other investment and trade barriers and incentives, thus allowing an assessment of the effects of

[3] The RWGTM was developed by Kenneth B. Medlock III and Peter R. Hartley at Rice University using the MarketBuilder software platform provided through a research license with Deloitte MarketPoint, LLC. The architecture of the RWGTM, the data inputs, and modeled political dimensions are distinct to Rice and its researchers. The RWGTM is used to evaluate how different geopolitical pressures, domestic policy frameworks, and market developments can influence the long-run evolution of regional and global gas markets and how those developments in turn influence geopolitics. A brief description of the RWGTM is contained in Annex B of this report, and more detail is available upon request.

[4] A significant core data constituent of this analysis is rooted in recently published Baker Institute Center for Energy Studies research (see *The Market Impacts of New Natural Gas-Directed Policies*). This study, funded by the Alfred P. Sloan Foundation, is available at http://bakerinstitute.org/center-for-energy-studies/. As detailed therein, that study utilizes data derived from other ongoing studies, namely those at The University of Texas Bureau of Economic Geology (*Shale Resources and Reserve Study*), Resource for the Future (*Managing the Risks of Shale Gas Development*), and the University of Colorado-Denver (*Understanding the Politics of Shale Gas Development: A Focus on Colorado, New York, and Texas)*. The study at the UT Bureau of Economic Geology provides critical benchmarking for shale gas well decline profiles and production costs. Studies at RFF and CU-Denver provide indications of likely policy directions of local, State, and Federal Governments. All international components are derived from Baker Institute CES research.

these factors on natural gas market development.[5] The RWGTM can also be used to understand the effects of changes in core economic variables affecting energy production—such as fiscal terms, limits on access to resources, fixed and operating costs, constraints on rigs, equipment and personnel, and technology. For each scenario considered in this study, the model produces detailed outputs—both domestically and internationally—covering natural gas production, trade, and prices, as well as associated capital investment in the natural gas value chain.

These output data are then input into the Oxford Economics Global Economic Model (GEM) to simulate the broad macroeconomic impacts of the various alternative paths for the global natural gas market. The GEM covers 46 economies in detail and provides headline statistics for another 35 economies. The model provides a rigorous and consistent structure for analysis and forecasting, and allows the implications of alternative global scenarios and policy developments to be readily analyzed at the macro level.[6] This stage of the analysis assesses the effect of changes in natural gas supply, trade, and prices on gross domestic product (GDP), total industry and manufacturing, competitiveness, consumer and producer prices levels, and the current account.

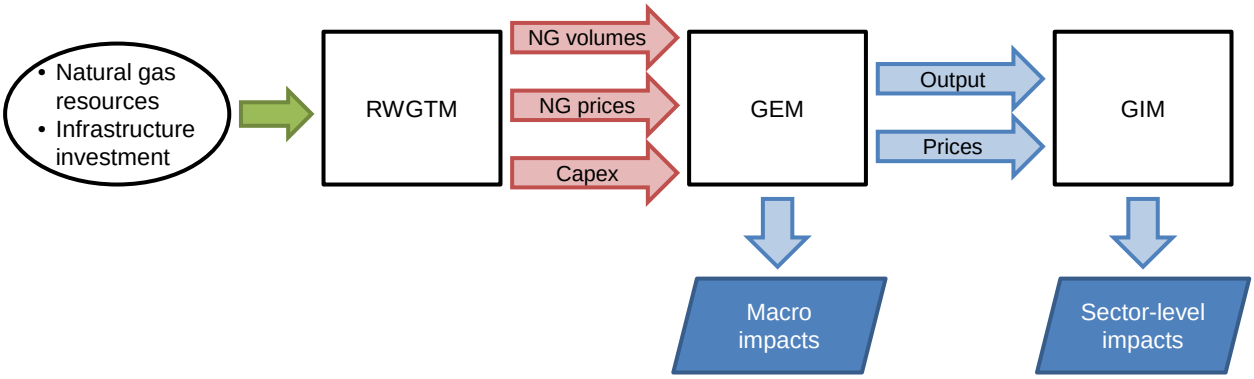
Finally, the macroeconomic outputs from the GEM are then input into the Oxford Economics Global Industry Model (GIM), which models the impact on activity at the sector level. The GIM covers 100 sectors in 67 countries. Forecasts for individual industries are driven by the macroeconomic forecast—consumption, investment, and exports—combined with detailed modeling of industry interactions, such as supply-chain linkages. Improvement in sector competitiveness allows capture of

[5] It should be noted that economic and political influences are not necessarily mutually exclusive, since policy can initiate changes in economic parameters.
[6] It is of note that the GEM is unique among commercial economic consultancies.

greater market share in the domestic and international market, where competitiveness is driven by exchange rate developments, labor costs, and energy prices.

Figure 1 highlights the modeling approach, and a more detailed description of the models used in this study can be found in Annex B.

Figure 1. Modeling Approach



2.2 Macroeconomic Impact Channels

The oil and gas sector is a relatively small component of the U.S. economy overall, accounting for around 1.3 percent of total output and 0.1 percent of non-farm payrolls in 2014. However, despite its relatively small size in the national accounts, energy is a key input in virtually every sector and changes in energy prices affect the entire economy.

An increase in U.S. LNG exports would be expected to impact the U.S. economy[7] through the following key transmission channels:

[7] The impacts described are relative to what would otherwise have happened, i.e., if there was not an increase in U.S. LNG exports.

- Increased gas production directly contributes to GDP, and the export of natural gas will increase export revenue and improve the U.S. current account.
- Increased production will also have positive spillovers to in key suppliers of the sector such as machinery and engineering services, and rising employment in the gas sector also leads to increased demand for goods and services more broadly.
- The incremental investment needed to facilitate higher natural gas production and exports should also boost economic activity in the United States.
- The additional investment will also have multiplier effects through the supply chains of the construction, cement, and metal products sectors that lead to further gains in output and employment.
- Henry Hub prices are higher than they would otherwise be as U.S. LNG exports increase because producers increasingly exploit reserves with higher extraction costs. Higher natural gas prices will erode consumers' purchasing power both directly and indirectly as the impact of higher domestic natural gas prices filters through the supply chains of other sectors causing the prices of other goods and services to rise. This will negatively impact consumption with the energy-intensive sectors being most affected.
- Changes in relative natural gas prices across countries will impact U.S. competiveness. If energy prices in the United States rise relative to energy prices in the rest of the world, this raises production costs for U.S. firms relative to international competitors. This erosion in U.S. competitiveness will weigh on the U.S. trade balance. The tradable energy-intensive sectors such as chemicals and steel will generally be most exposed to shifts in industrial competitiveness.

- Increased production and higher Henry Hub gas prices[8] should generate higher profits for natural gas producers. The improved profitability should, in turn, ultimately raise U.S. income either through the distribution of profits or by increasing equity market value of listed companies.
- Variations in natural gas production and investment outside the United States will also impact U.S. businesses that are dependent on overseas natural gas production and investment activity. Changes to natural gas prices in the rest of the world will also affect global economic activity and impact demand for all U.S. exports.

2.3 Scenario Approach

The study analyzes a comprehensive set of scenarios to understand the impact of higher U.S. LNG exports under a range of circumstances. A wide range of scenarios are analyzed in order to establish conclusions that are not dependent on any particular set of starting conditions for the U.S. or international gas markets. The scenario assumptions fall along two core dimensions. In one dimension, we consider different U.S. domestic market conditions with regard to resources and domestic demand. In the other dimension, we consider specific circumstances that result in different international demand pull for U.S.-sourced LNG for each domestic scenario. Table 1 outlines this approach.

[8] It should be noted that it is assumed that U.S. exporters receive the Henry Hub price rather than the price in the destination market.

Table 1. Study Scenarios

		Domestic Scenarios			
International Demand Scenarios		**Reference**	**High Resource Recovery**	**Low Resource Recovery**	**High Natural Gas Demand**
Reference		Ref_Ref	Ref_HRR	Ref_LRR	Ref_Hi-D
Global Demand for U.S. LNG Supports 12 Bcf/d		LNG12_Ref	LNG12_HRR	LNG12_LRR	LNG12_Hi-D
Global Demand for U.S. LNG Supports 20 Bcf/d	**U.S. LNG Exports 12 Bcf/d**	LNG20_Ref12	LNG20_HRR12	LNG20_LRR12	LNG20_Hi-D12
	U.S. LNG Exports 20 Bcf/d	LNG20_Ref20	LNG20_HRR20	LNG20_LRR20	LNG20_Hi-D20
	U.S. LNG Exports Endogenous	LNG20_Ref	LNG20_HRR	LNG20_LRR	LNG20_Hi-D

Note that the scenarios are constructed so that there is sufficient international demand to support commercially viable LNG export flows from the United States in accordance with the volumes indicated in each case. Thus, various assumptions are made about the international natural gas market so as to stimulate investment in the U.S. upstream sector and the commensurate development of LNG export infrastructure. The scenarios indicated in Table 1 are defined as follows, moving first from left to right then top to bottom:

- **Ref_Ref** is defined as the Reference international demand case coupled with the Reference domestic case, hence the mnemonic Ref_Ref.
- **Ref_HRR** is defined as the Reference international demand case with a *higher* level of recoverable resource in the United States than in the Ref_Ref case.

- **Ref_LRR** is defined as the Reference international demand case with a *lower* level of recoverable resource in the United States than in the Ref_Ref case.
- **Ref_Hi-D** is defined as the Reference international demand case with a *higher* level of demand in the United States than in the Ref_Ref case.
- **LNG12_Ref** is defined by a *higher* level of international demand for U.S.-sourced LNG where domestic demand is consistent with the Ref_Ref case.
- **LNG20_Ref** is defined by a *significantly higher* level of international demand for U.S.-sourced LNG where domestic demand is consistent with the Ref_Ref case. LNG exports are endogenously determined.
- **LNG20_Ref12** is defined by a *higher* level of international demand for U.S.-sourced LNG where domestic demand is consistent with the Ref_Ref case. This case is, however, set up so that the U.S. exports of LNG do not exceed more than 12 Bcf/d.
- **LNG20_Ref20** is defined by a *higher* level of international demand for U.S.-sourced LNG where domestic demand is consistent with the Ref_Ref case. This case is, however, set up so that the U.S. exports of LNG do not exceed more than 20 Bcf/d.

In general, when reading the case nomenclature in Table 1, we note:

> "N1_N2X" where N1 denotes the name of the international demand scenario, N2 denotes the domestic scenario, and X denotes the level of LNG exports that *can* occur from the United States. Note that if X is not present, then the amount of LNG exports from the United States is fully endogenous to the scenario being considered.

Importantly, in each of the cases, the level of U.S. LNG exports is different if LNG exports are determined in a fully endogenous manner. This is due to the fact that altering the international market outlook through various mechanisms coupled with different assumptions about domestic demand or resource availability naturally leads to different outcomes. As such, the LNG20_Ref12 case can be compared to the LNG20_Ref20 case in a rather straightforward manner because the domestic and international settings are the same in the two cases as only the level of exports varies. By contrast, comparing scenarios with different underlying assumptions about the domestic and international market environments does not facilitate such a straightforward comparison. Therefore, in subsequent sections we generally compare the last three cases within each column in Table 1; so, for example, LNG20_HRR12 is compared to LNG20_HRR20 and LNG20_HRR.

As noted above, the international demand cases indicated in Table 1 are constructed in order to stimulate commercially viable flows of different U.S. LNG export volumes. The assumptions across the cases, so constructed, are detailed in Table 2.

Table 2. Select Natural Gas Market Assumptions Across International Demand Scenarios

		Reference	LNG12	LNG20
Accessible Shale Resource (tcf)	**World**	8,407	6,500	3,542
	Africa	1,918	1,918	0
	Asia and Pacific	2,107	1,075	90
	China	1,285	390	0
	Australia	529	529	90
	Europe	444	0	0
	South America	1,786	1,786	1,260
	North America	1,839	1,839	1,839
	United States	829	829	829
	Canada	498	498	498
	Mexico	513	513	513
	Rest of World	314	86	0
LNG New Build Capability		No limits.	Limited expansion capabilities in selected locations.	Only the United States has expansion capability beyond 2020.
Pipeline New Build Capability		No limits.	No future expansions of Central Asian pipelines to China.	LNG12 plus existing Russia-China pipeline supply agreements dissolve.
Demand		In all scenarios, a CO_2 trading platform is in place in Europe and the United States is assumed to retire 61 GWs of coal by 2030.	Chinese gas demand rises in response to policies to limit coal use; Japanese nukes remain offline.	LNG12 case plus CO_2 reduction protocols targeting coal use in India, Indonesia, South Korea, and a handful of other smaller coal consuming nations.

As indicated in Table 2, the Reference, LNG12, and LNG20 international demand scenarios adjust shale resource availability, pipeline and LNG infrastructure expansion opportunities outside the United States, and natural gas demand in different countries. For example, the capabilities for pipeline expansion to meet growing Asian demand are increasingly limited as we move into the higher international LNG demand cases. Specifically, the LNG12 case assumes there is no future expansion of

Russian pipeline capacity into China and the Far East beyond what has already been contracted. However, in the LNG20 case the existing agreement is assumed to dissolve, and Russia is assumed to never be connected by pipeline to China. Moreover, in both the LNG12 and LNG20 cases, it is assumed that there are no future pipeline expansions from Central Asia to China.

In addition to the above assumptions, we also vary assumptions regarding the domestic resource base and demand. Namely, in constructing these cases, we assume the total U.S. natural gas resource base is 2,525 tcf in the HRR case, 1,831 tcf in the LRR case, and 2,075 tcf in the Reference case. The total resource base is comprised of an accessible shale gas resource totaling 1,182 tcf in the HRR case, 688 tcf in the LRR case, and 829 tcf in the Reference case, with other resources making up the difference. As for domestic demand, in the Hi-D cases we assume 113 GW of coal-fired generation capacity are retired as the Clean Power Plan takes effect, which accounts for an additional 52 GW of retirements above the Reference case.[9]

[9] The distribution of the retirements is distinctly different than in the Reference case as each state must meet a specific target for carbon dioxide emissions reductions. While the exact impact of the Clean Power Plan is not known and highly uncertain, the primary point of the Hi-D scenario is to stimulate greater domestic demand for natural gas.

3 Natural Gas Market Impacts

As outlined in Table 1, there are a total of 20 scenarios that were considered in this analysis. The scenarios consider different domestic and international market conditions so that a robust view of the global natural gas market can be ascertained. In this section, we detail the Ref_Ref case then outline some high level results for the global natural gas markets across all cases, with a particular emphasis on the United States. This will enable a deeper understanding of the macroeconomic results that are detailed in subsequent sections. Detailed results for all cases can be found in the Annexes.

3.1 The Natural Gas Market in the Ref_Ref Case

The Ref_Ref case is the scenario that combines the Reference domestic market conditions with the Reference international market conditions. It assumes current policies in various places around the world—including those setting domestic prices, dictating exports/imports, and/or addressing the environment (for example renewables targets in the United States and internationally)—are persistent throughout the model time horizon, unless there is already action being undertaken. While this is not likely to be true, the Ref_Ref case serves as a benchmark so that shifts in market outcomes can be attributed to particular assumptions across scenarios. In sum, the Ref_Ref case captures geopolitical, contractual, and regulatory constraints that *currently* exist in the global gas market and are not already known to be different into the future. This includes:

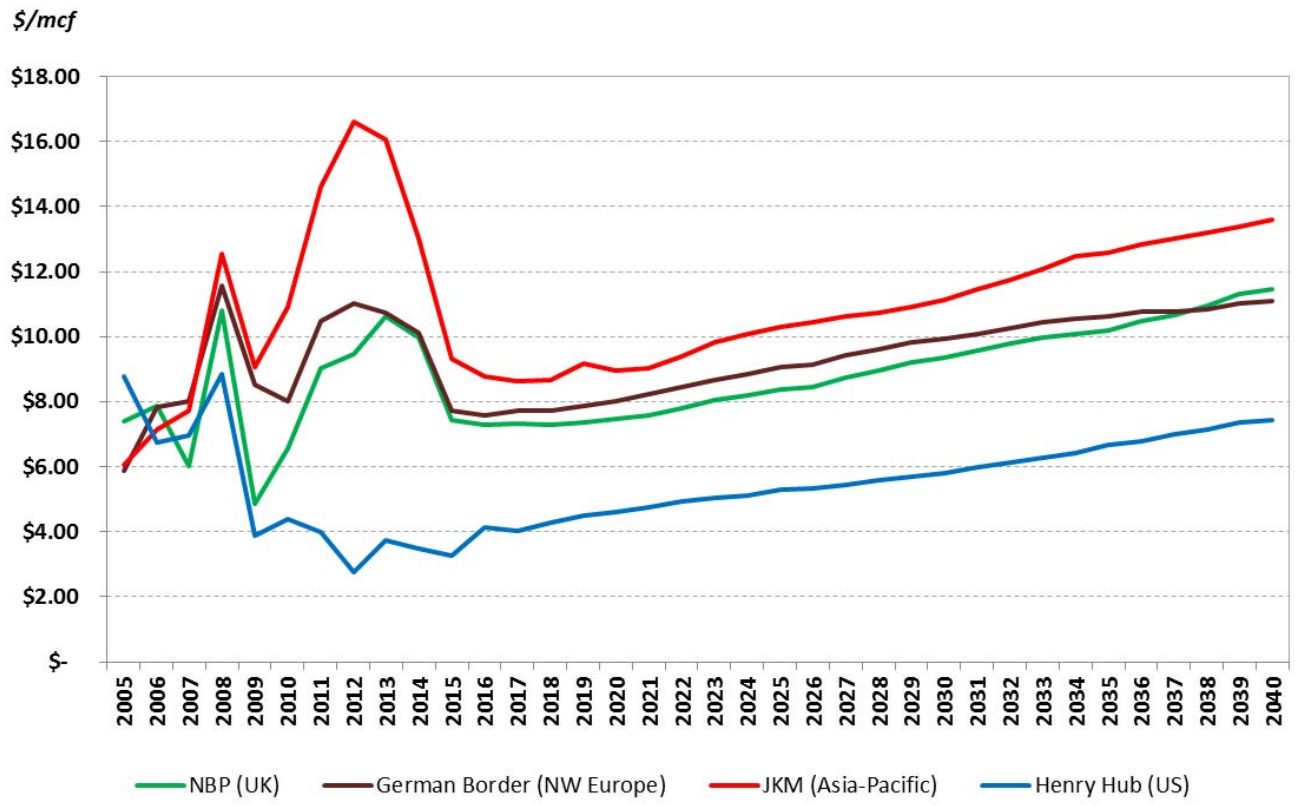
- Current pricing policies and export/import policies across countries remain as they are today throughout the model time horizon, unless there is already concerted action being undertaken to change the internal market.

- The construction of new LNG and pipeline infrastructure is generally allowed to occur according to commercial viability. However, in those countries where investments are hampered by geopolitical considerations, it will be assumed that those burdens are carried forward through the model time horizon. Thus, for example, current sanctions on Iran carry forward (although at the time of this writing this outcome is highly uncertain), and the investment risks associated with developments in countries such as Venezuela and Bolivia are assumed to persist.
- Current assumptions regarding the availability and competitiveness of emerging energy technologies are held fixed. So, there is no effort to accelerate the adoption of technologies that compete with natural gas through policies that have yet to be announced or enacted or through unanticipated innovations that lower the cost of competing energy sources and/or technologies.
- Current environmental policies are assumed to remain in place throughout the model time horizon. So, for example, it is assumed that the European Union (EU) will maintain an active CO_2 trading market but the United States will, collectively, not. While the price of carbon in the EU has fluctuated with policy treatment, it is carried forward in the RWGTM at $10 per tonne. We address current policy intervention addressing domestic CO_2 emissions through the Hi-D scenarios. It is also worth noting that the upcoming climate talks in Paris later this year could alter the policy frameworks in many countries. This possibility is addressed, at least in a rudimentary way, through the international LNG12 and LNG20 scenarios.

- Known natural gas resources, including shale, are developed according to commercial viability in North America and elsewhere. Existing bans on shale-directed activity are assumed to carry forward throughout the model time horizon. Again, there is considerable uncertainty regarding the commercial viability of shale around the world, and we address a potentially diminished role for shale through the domestic LRR scenario and the international LNG12 and LNG20 scenarios. We consider an enhanced role for shale in the domestic HRR setting only.

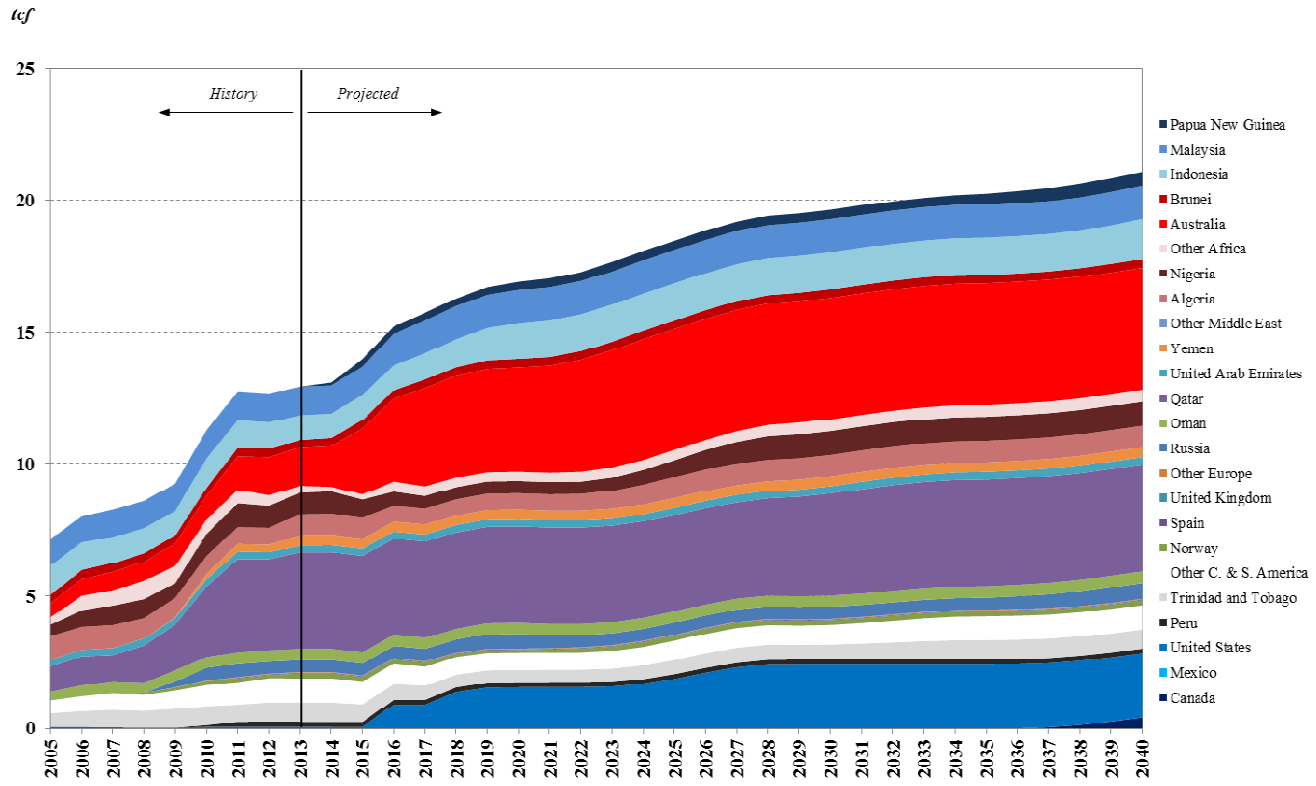
The Ref_Ref case reveals several interesting insights into how the North American, and global, gas market may evolve over the coming decades. To begin, it indicates the North American market will remain a low cost source of supply for natural gas for the foreseeable future. This has implications for regional competitiveness, demand, and international trade. Moreover, as can be highlighted through the scenarios examined in this study, the availability and production of natural gas from shale in the United States and around the world are critical to future market developments.

Figure 2. Select Global Prices (2010$) (Ref_Ref case)



As indicated in Figure 2, the price at Henry Hub remains below the prices in Asia (Japan Korea Marker or JKM) and Europe (National Balancing Point or NBP and German-Austrian Border), although the premium that emerged following the disaster at Fukushima in 2011 dissipates, and the long-term differentials in prices between regions reflects the cost of trade. Moreover, the emergence of new LNG supplies from Australia and the United States drive the total volume of global LNG trade to almost double current levels (see Figures 3 and 4). Importantly, U.S. LNG exports rise in the Ref_Ref case to about 6.5 Bcf/d, making it the third largest LNG exporter in the world, behind Australia and Qatar. A defining difference among the top three LNG exporters is that the United States is the single largest consumer of natural gas and its exports are fueled almost entirely by shale gas development.

Figure 3. Global LNG Exports by Region (Ref_Ref case)[10]

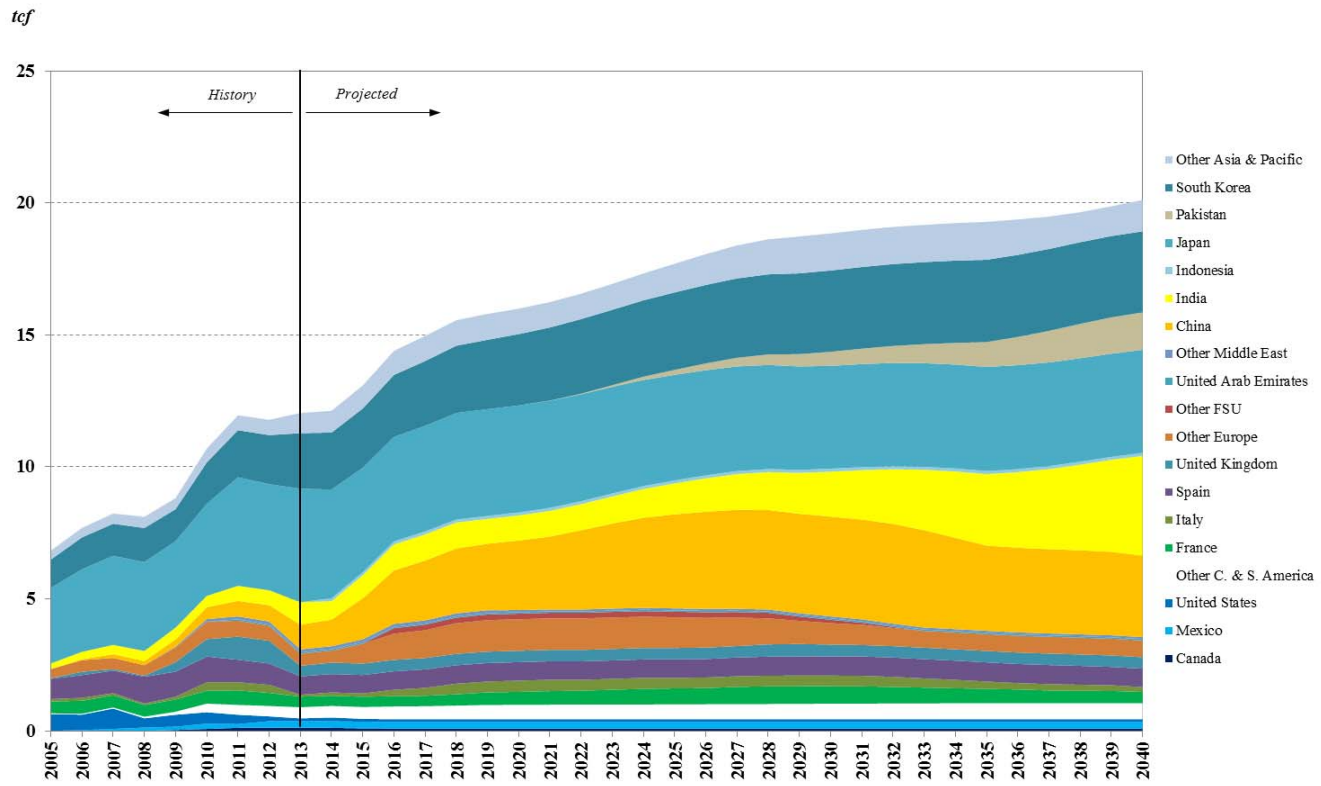


The near term increases in LNG trade indicated in Figures 3 and 4 primarily reflect the amount of LNG export capacity under construction in Australia and the United States. However, the decrease in Asian LNG prices discourages further LNG expansion in the near term. Nevertheless, expanded LNG trade is facilitated by a growing need for waterborne supplies to developing Asian economies (see Figure 5), which is fueled more generally by global demand growth (see Figure 5) that is largely occurring in regions with inadequate domestic resource endowments. This increase in demand, in turn, spawns

[10] The data for exports includes losses during liquefaction.

supply growth in regions that can, through trade via both LNG and pipeline, accommodate those new demands.[11]

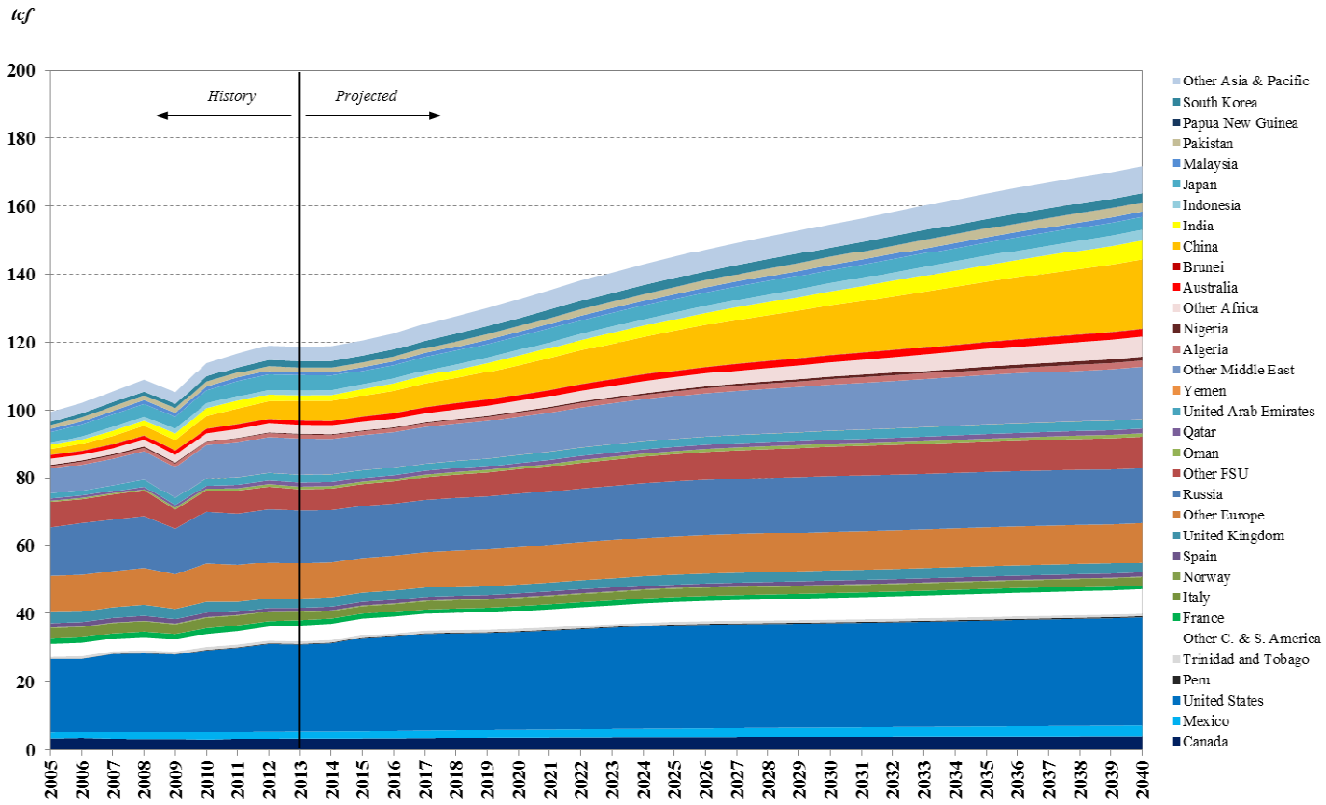
Figure 4. Global LNG Imports by Region (Ref_Ref case)[12]



[11] In the results herein, we aggregate countries into geographically defined regions in order to clearly present the results in a coherent manner. More detailed data is presented in Annex D.

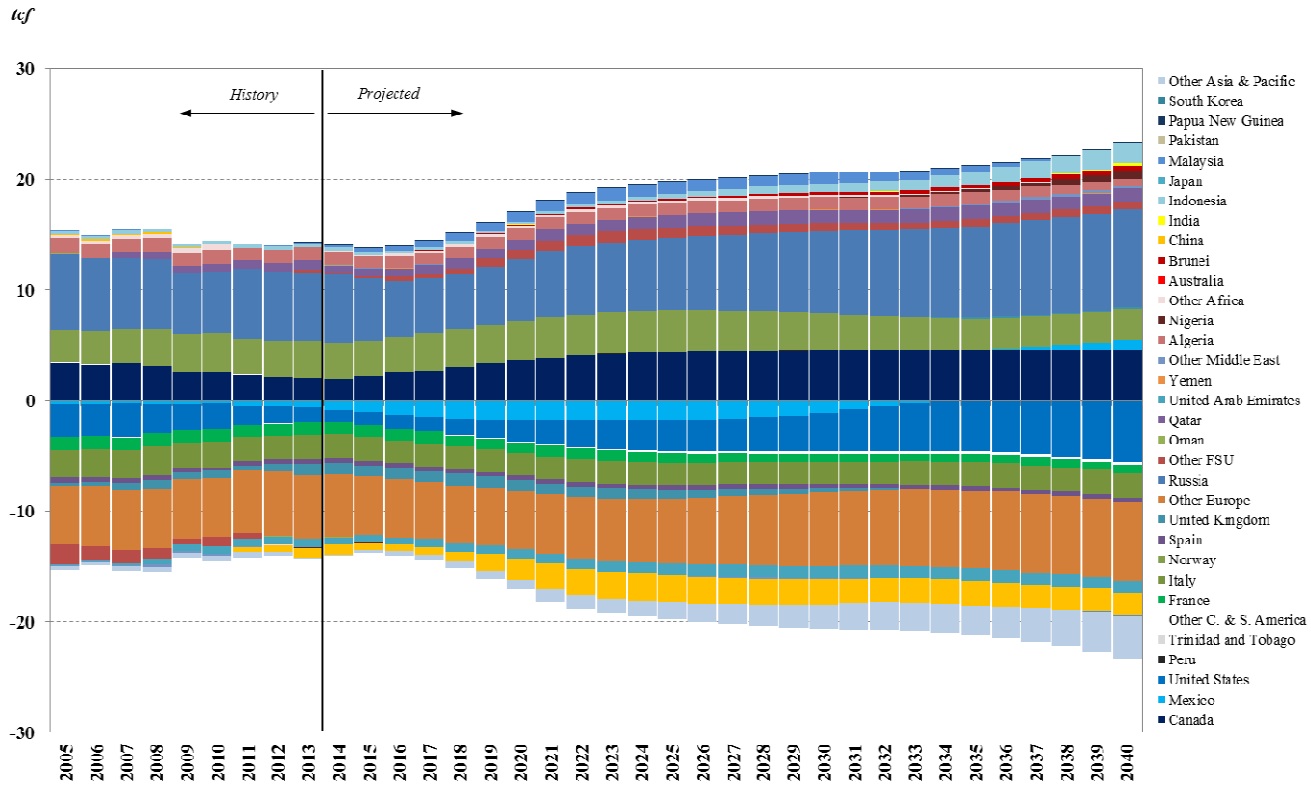
[12] The data for imports is less than the reported export data due to losses in liquefaction and shipping.

Figure 5. Global Demand by Region (Ref_Ref case)



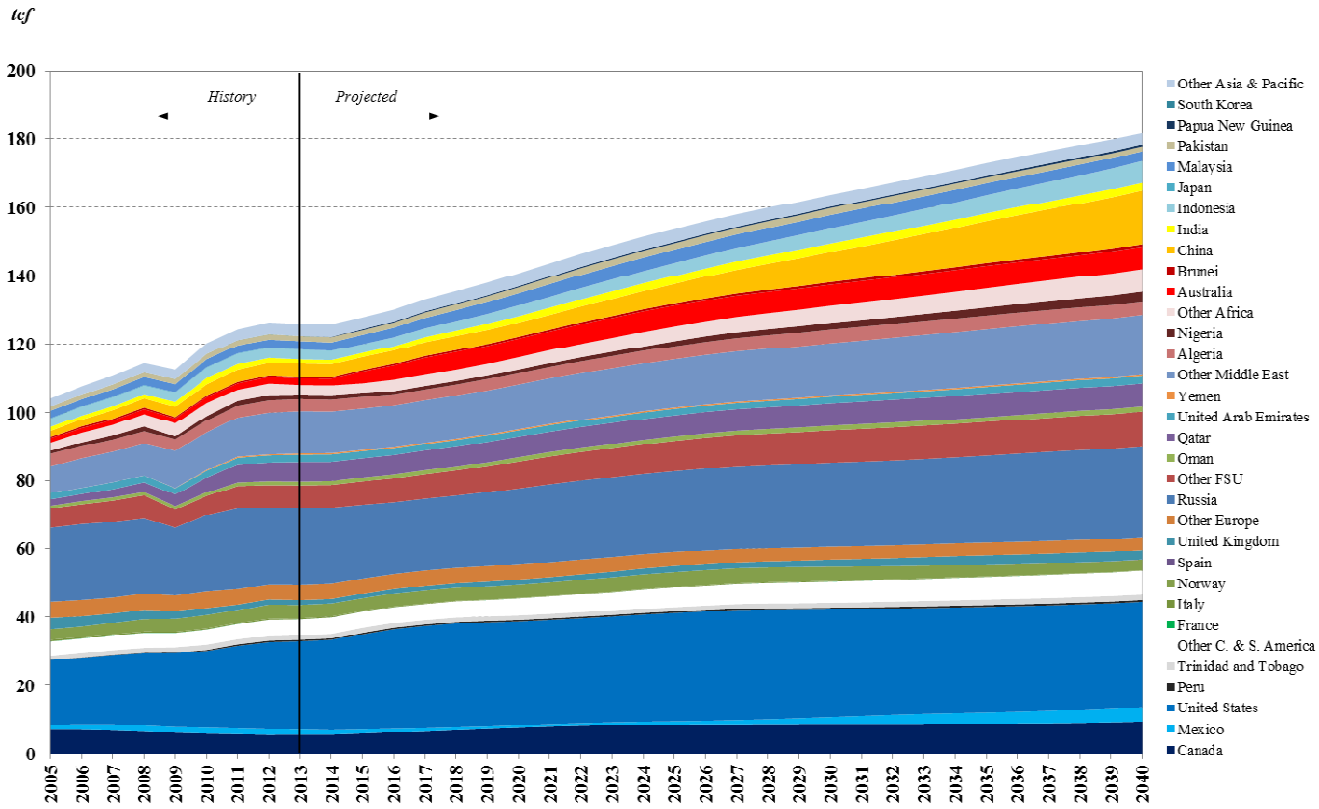
In Figure 5, we see that global demand growth is expected to be fueled primarily by the high population economies of China and India. Europe is not expected to contribute much to the overall global natural gas demand picture, which, in turn, sheds light on the emerging patterns of trade. In particular, as indicated in Figure 5, we see increased flow of LNG to Asia as well as pipeline gas from Russia to Asia (see Figure 6). Long term, the international natural gas trade map is effectively redrawn with a shift in export flows increasingly toward developing Asia.

Figure 6. Global Net Pipeline Trade (Ref_Ref case)



As seen in Figure 6, net global trade via pipeline infrastructure is also expected to grow. Announced projects that result in increased pipeline deliveries present attractive options for meeting long-term demand growth, in particular the development of pipelines between Russia and China. In fact, the persistent relatively robust Russian production seen in Figure 7 is largely facilitated by its larger scale entry in the Asian market. A weak demand outlook for Europe (see Figure 6) is not sufficient to support expanded Russian production, hence Russia turns to Asia. More generally, narrowing international price differentials limit the expansion of LNG infrastructure post-2020 and supporting shorter, continental trade via pipeline.

Figure 7. Global Supply (Ref_Ref case)

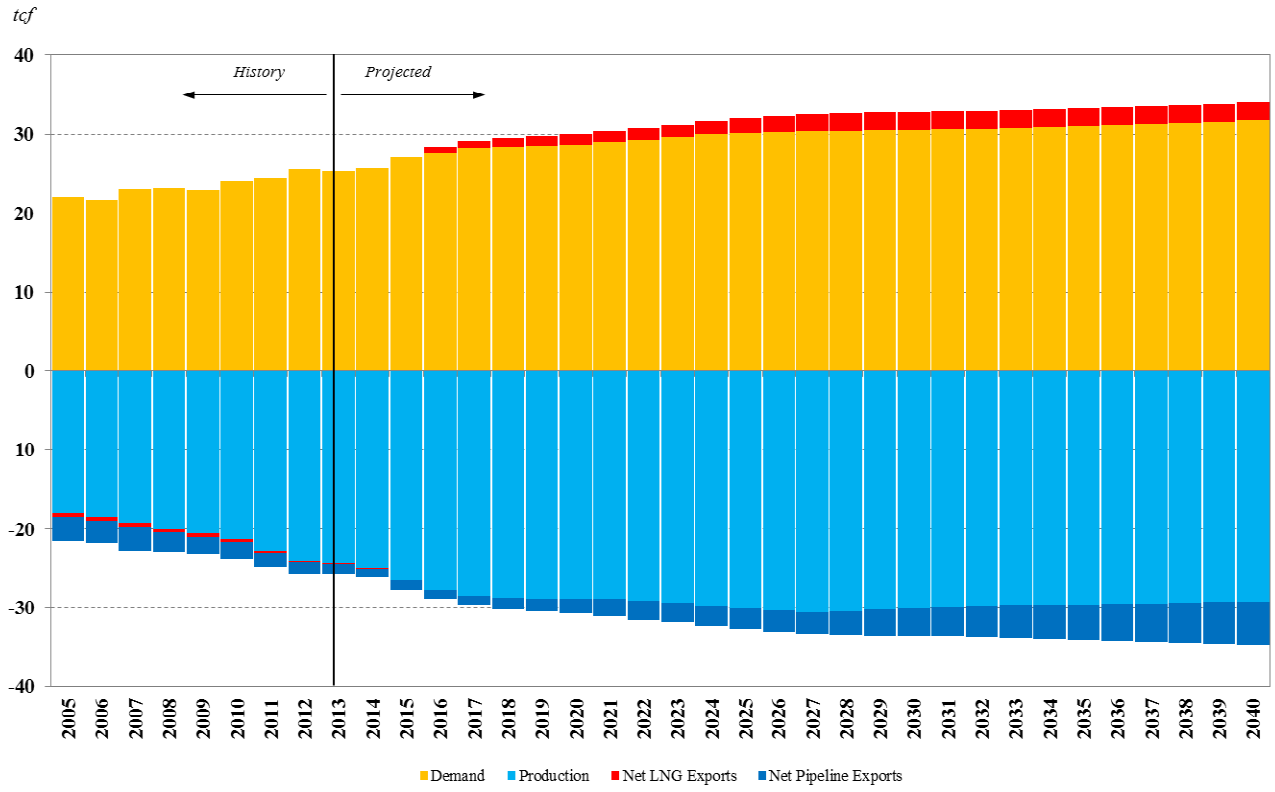


Also evident from Figure 7 is that Canadian supply expands, fueled primarily by shale gas developments in western Canada. This, in turn, impacts the balance of trade for the United States. As mentioned above, growth in U.S. natural gas production supports LNG exports from the United States of 6.5 Bcf/d, but U.S. LNG exports are also supported by developments in the broader, highly interconnected North American market as the deep interconnectedness of the United States and Canada facilitates the flow of Canadian gas to the United States on already existing infrastructure.

As indicated in Figure 8, Canadian exports via pipeline to the United States increase throughout the time horizon after bottoming out in the early 2010s. The majority of Canadian exports are to western

states and the Midwest. Exports to the Mid-Atlantic continue to decline and never recover to any significance, which reflects strong supply growth in the Marcellus shale (see Figure 10).

Figure 8. U.S. Market Balance (Ref_Ref case)



Exports of natural gas via pipeline from the United States to Mexico increase in the near term to about 5.5 Bcf/d in the early 2020s, hold at that level through 2030, then decline through the end of the time horizon as Mexican domestic production begins to climb. The increased connectedness within the North American natural gas market that emerges in the Ref_Ref case reflects a general result that carries significant implications across all scenarios. Namely, Canada, the United States, and Mexico are poised to become more intimately linked through natural gas trade, and, as a result, the

impacts of a policy or commercial development in any one country will affect North America more generally.

As indicated in Figures 3 and 8, U.S. LNG exports rise in the Ref_Ref case (and in all cases considered in this study). However, the impact of U.S. LNG exports and other global supply developments on international and domestic prices ultimately places a check on the total volume of U.S. LNG exports. Specifically, the price spreads in the international marketplace weaken to the point that full cost recovery of U.S. LNG export facilities currently under construction is compromised for about a decade. Of course, those facilities operate, but further investment in LNG export capacity is stymied until global demand pull expands to stimulate new capital flows into the U.S. LNG export value chain. Figure 9 highlights the Ref_Ref case price spreads and notes the time periods where price differences are long term supportive of investment in U.S. LNG export capacity.

Figure 9. Price Differentials and LNG Export Capacity Investment (Ref_Ref case)

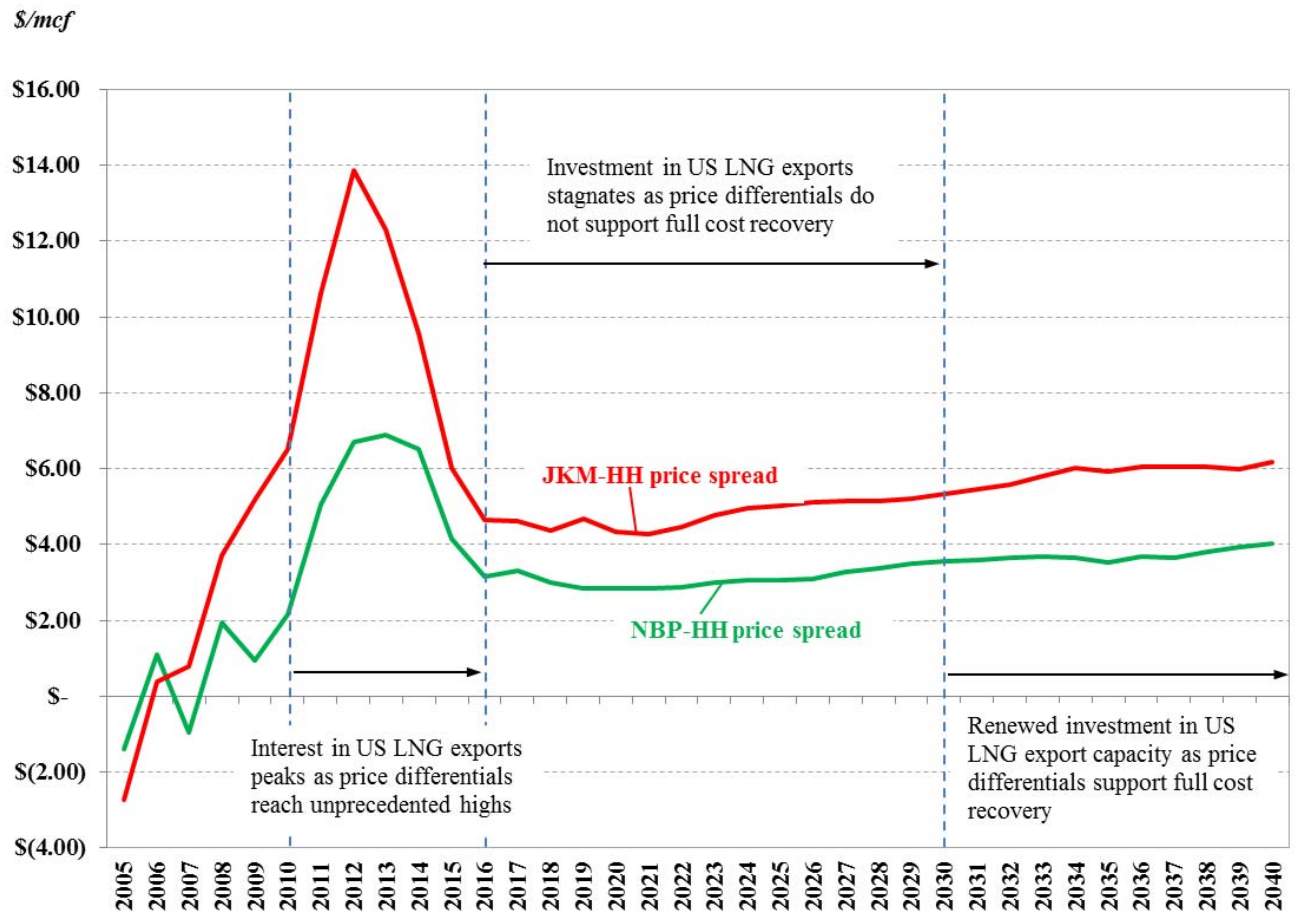
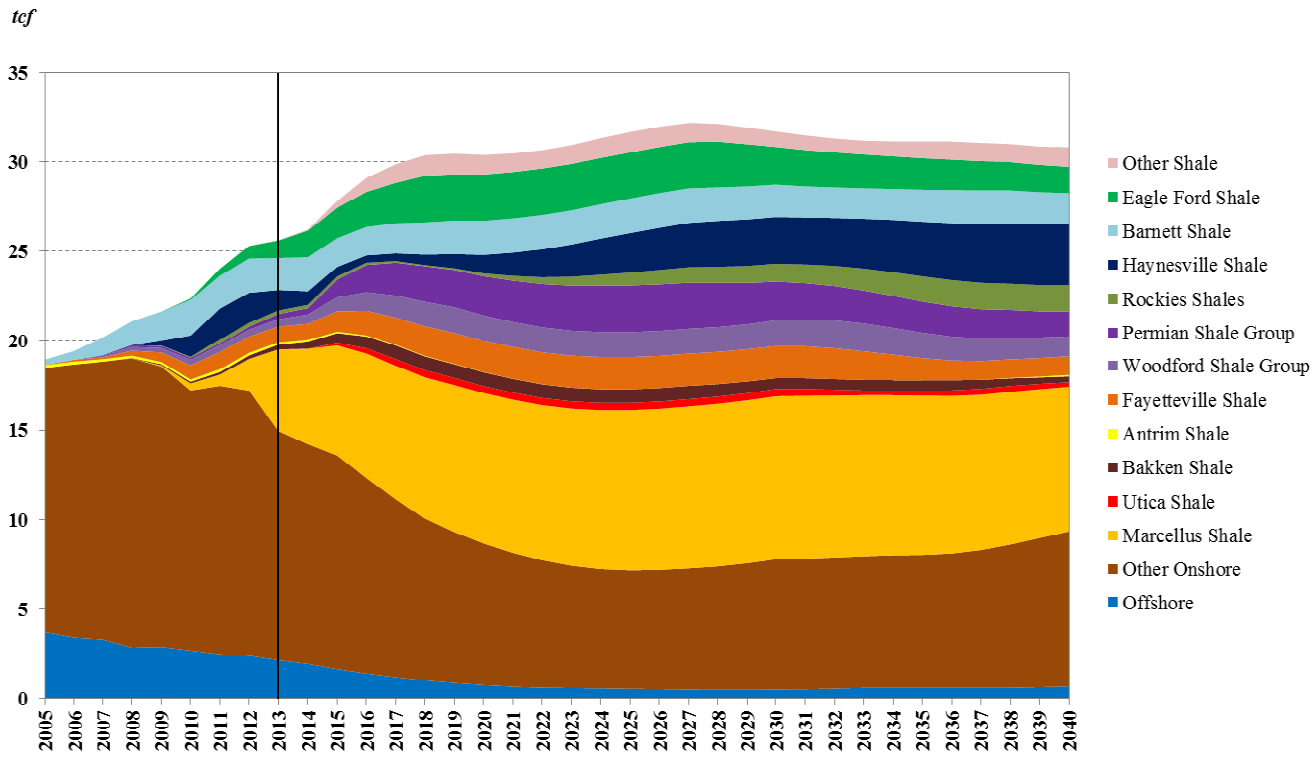


Figure 10 indicates U.S. domestic production by source through 2030. Shale gas production comprises a rising share of U.S. supply, approaching three-quarters of domestic production. The rise in shale production accompanies declines in production from other natural gas resources, both onshore and offshore. The largest producing basin is the Marcellus shale, rising to just over 20 Bcf/d in the late 2020s before beginning to decline. Production from the Haynesville shale is projected to recover in the 2020s due to higher prices and the emergence of a new demand outlet via Gulf Coast LNG export facilities, which attracts upstream capital into northern Louisiana.

Figure 10. U.S. Supply by Resource and Play (Ref_Ref case)

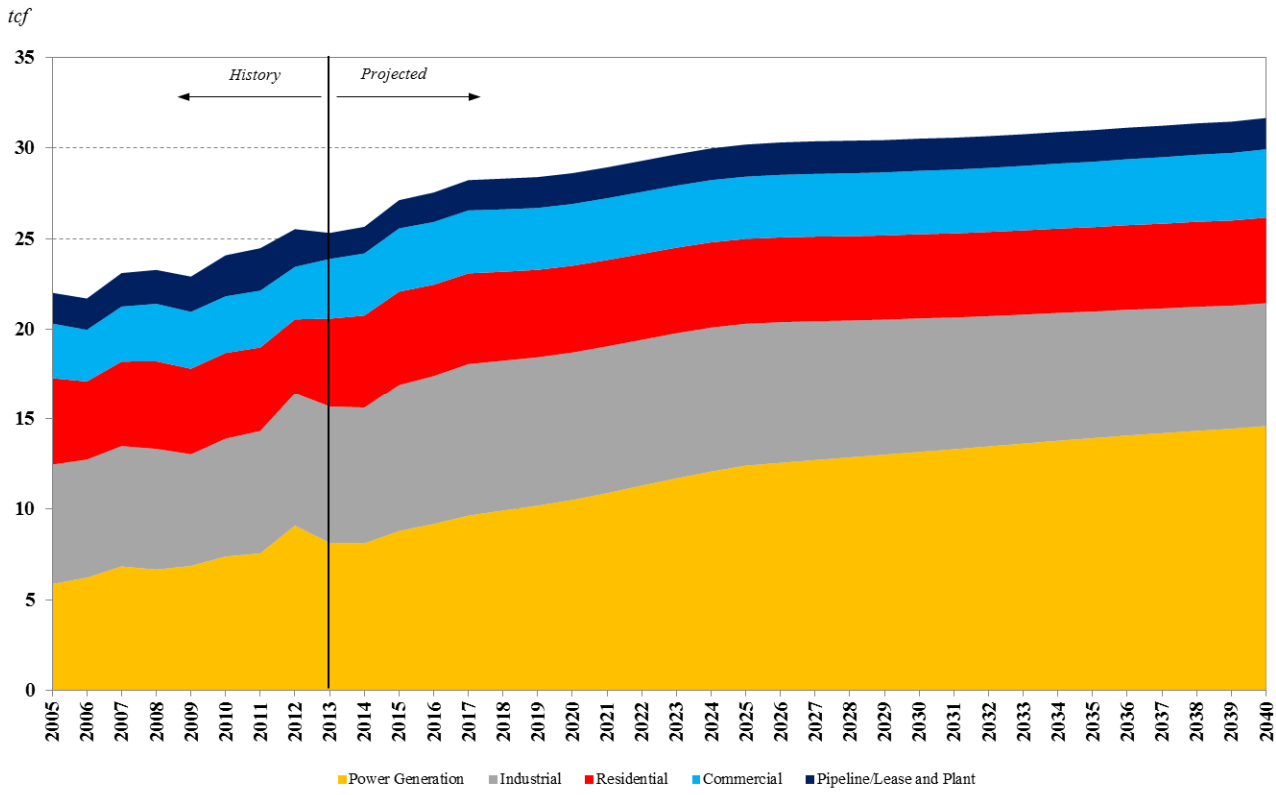


The projected growth in Canadian production drives an increase in exports via pipeline to the United States, and this occurs as growth in U.S. domestic production flattens. Moreover, Mexican natural gas production begins to increase in the 2020s, meaning total supply throughout the broader North American market is quite robust throughout the time horizon.

Strong North American production facilitates demand growth in the United States, in particular, that is driven by demand in the industrial and power-generation sectors in the near term, and continued growth in power generation longer term (see Figure 11). In fact, the share of natural gas in power generation in the Ref_Ref case is projected to approach 37 percent by 2030, largely driven by emerging environmental policies that target the use of coal. In fact, the power-generation sector is

projected to be the most rapidly growing source of domestic demand, rising at an average annual rate of over 3.0 percent through 2020 and 2.3 percent per annum over the entire time horizon. Industrial demand increases at an average annual rate of 2.2 percent through 2020 then is flat to slightly declining after 2020 due to efficiency gains as industrial production continues to increase. The residential and commercial sectors are not projected to see significant growth.

Figure 11. U.S. Demand by End-Use Sector (Ref_Ref case)



The changing U.S. demand and supply portfolio has implications for regional prices. The changing regional price relationships reflect sustained higher levels of production in the Middle Atlantic and Canada longer term, regional patterns of new sources of demand for U.S. natural gas production, such

as LNG exports and industrial demands that tend to primarily impact the Gulf Coast, and growth in power-generation demand particularly where coal capacity is retired.[13]

Longer term growth in Canadian production weakens the price in western Canada (AECO Hub) relative to Henry Hub, but price across North America is generally strengthening over time. So, the western Canadian price also strengthens, just more slowly than Henry Hub. In general, the deep interconnectedness of the North American natural gas market and the high degree of fungibility of different sources of natural gas links the prices and in Canada, the United States, and Mexico and prevents any one region from completely dislocating from the other.

3.2 Select Natural Gas Market Highlights Across All Scenarios

In this section, we highlight the differences across cases in prices at Henry Hub, JKM, and NBP. Then, we discuss the differences in U.S. LNG exports across the various scenarios. More detailed results on the changes in domestic and international production and consumption can be found in the Annexes. We focus on these outputs in particular because they form the basis for understanding the impacts on macroeconomic outcomes across the scenarios, which we turn to in section 4.

[13] Note this occurs even with pipeline flow reversals on mainline infrastructure away from the Mid-Atlantic region, which serve to limit the depth to which basis dives longer term.

Figure 12 indicates the price at Henry Hub for each case considered in this study, and Figure 13 indicates the price path of each scenario relative to the Ref_Ref case discussed above. The only two cases not presented in Figure 12 are LNG20_LRR20 and LNG20_Hi-D20. These are not included because they are identical to the scenarios where LNG exports are endogenously determined under the same set of domestic and international market conditions, specifically the LNG20_LRR and LNG20_Hi-D scenarios.

Figures 12 and 13 highlight the breadth of impact on Henry Hub price revealed by the various scenarios. For example, among the cases considered, price is highest in the case where international demand for LNG is highest while domestic resources are lowest (the LNG20_LRR case). Alternatively, price is lowest when international demand for U.S.-sourced LNG is lowest while domestic resources are highest (Ref_HRR). In fact, in moving from Ref_HRR to LNG20_LRR, we see a price spread that approaches $3.60/mcf by 2040. In other words, when international market conditions are such that demand for U.S. LNG exports is at its highest and natural gas resources are relatively scarce, price is considerably higher than when the exact opposite is true.

Figure 12. Henry Hub Price Across Scenarios

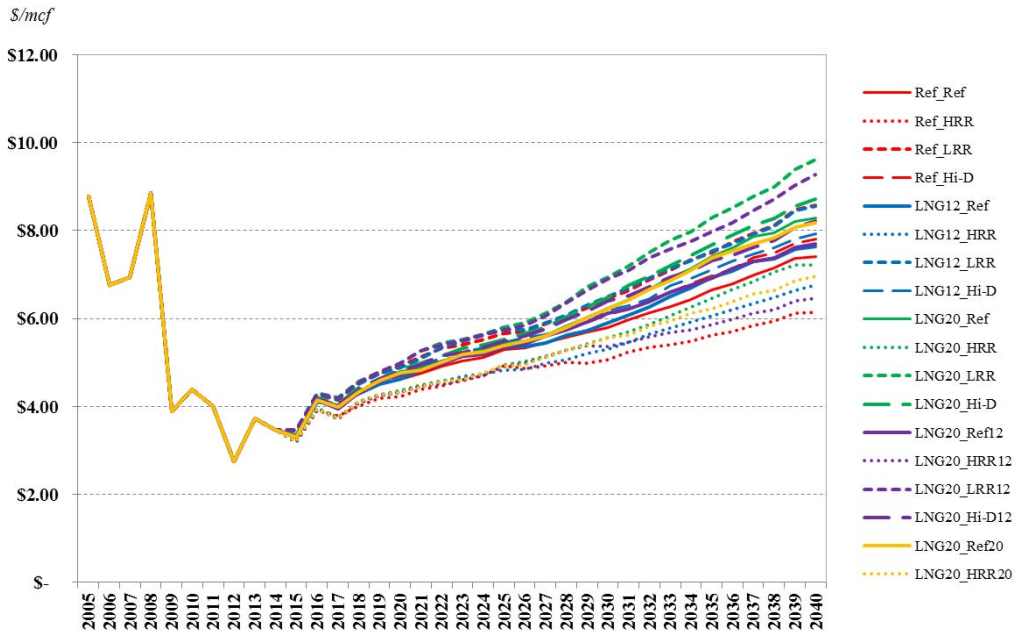
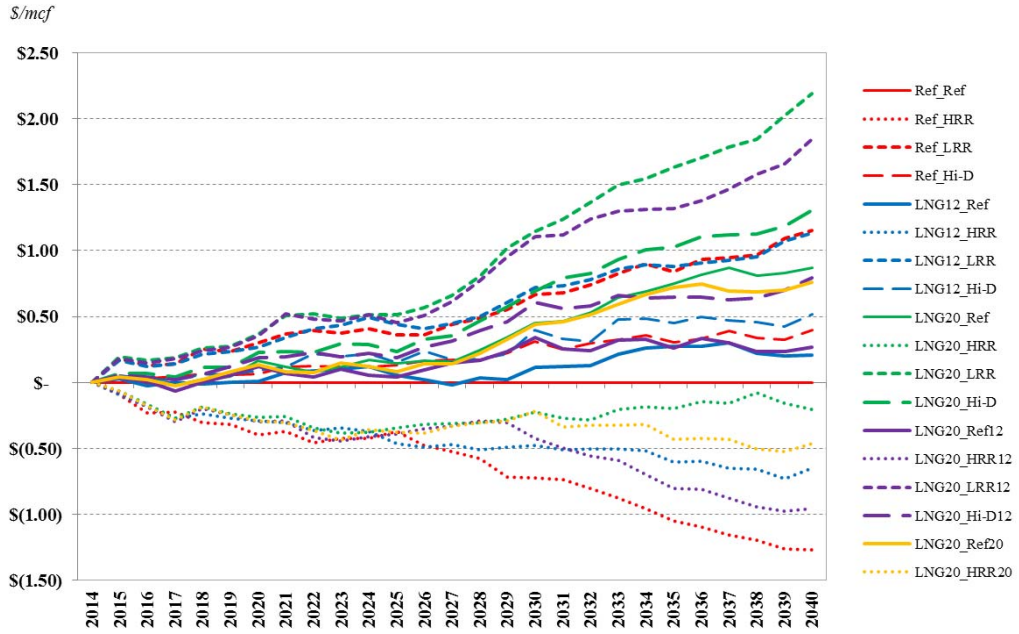


Figure 13. Henry Hub Price Relative to the Ref_Ref Case by Scenario



The other cases collectively reveal a consistent pattern with regard to the Henry Hub price. Namely, as demand for U.S. LNG exports rises, all else equal, the Henry Hub price rises. Moreover, as the availability of U.S. natural gas for export declines, either as resource availability falls or domestic demand rises, the Henry Hub price also rises, all else equal. Therefore, the exact impact of LNG exports on the Henry Hub price depends on both domestic *and* international market considerations. This latter point highlights the basic result that countries become increasingly connected via trade in the Ref_Ref case, and the extent to which this development is reinforced in each scenario plays out in the price at Henry Hub. It also is evident through the manner in which the spreads between Henry Hub and international benchmark prices evolve. Specifically, we see that the spread between Henry Hub and international benchmark prices JKM and NBP narrow as U.S. LNG exports increase within each international demand case, with the majority of the price movement occurring overseas.

Figures 14 and 15 indicate the JKM price and reveal a slightly less diverse picture, but one that is interesting nonetheless. In particular, we see that as international market conditions stimulate greater demand for U.S.-source LNG, the price at JKM rises. This is primarily by construction as the assumptions used to drive up demand for U.S. LNG exports largely target Asia (see Table 2). The price impacts at JKM are exacerbated as U.S. LNG availability is compromised. Notably, the spreads between Henry Hub and JKM (not pictured) are sensitive to both domestic and international drivers. Specifically, we see the spread narrow as more LNG is exported from the United States, all else equal. We return to this point in section 4, but note that the result reinforces the notion that markets become increasingly connected via trade as price signals transmit market information across every region.

Figure 14. JKM Price Across Scenarios

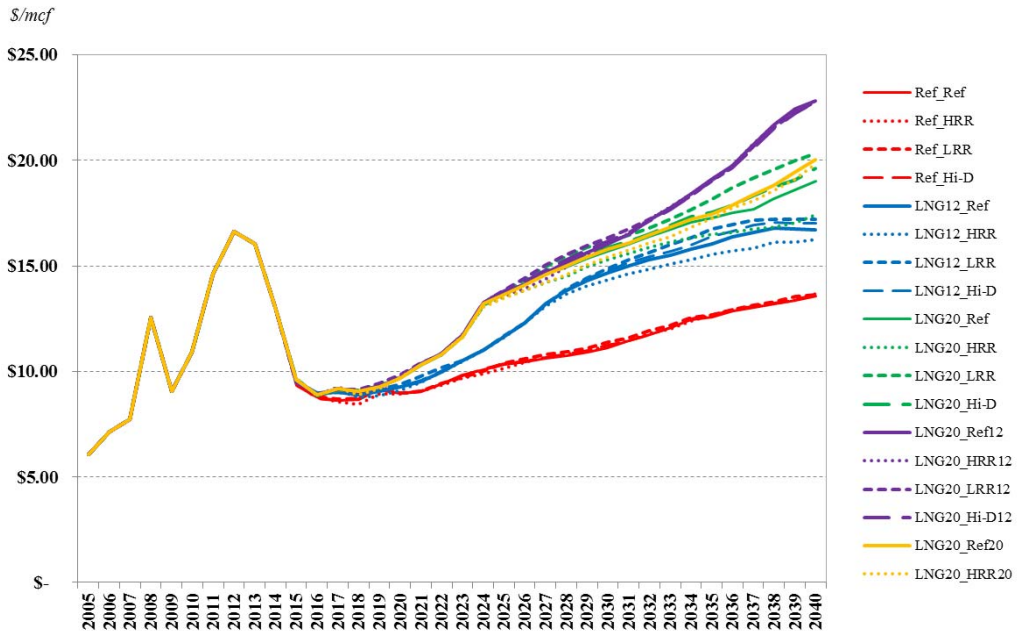


Figure 15. JKM Price Relative to the Ref_Ref Case by Scenario

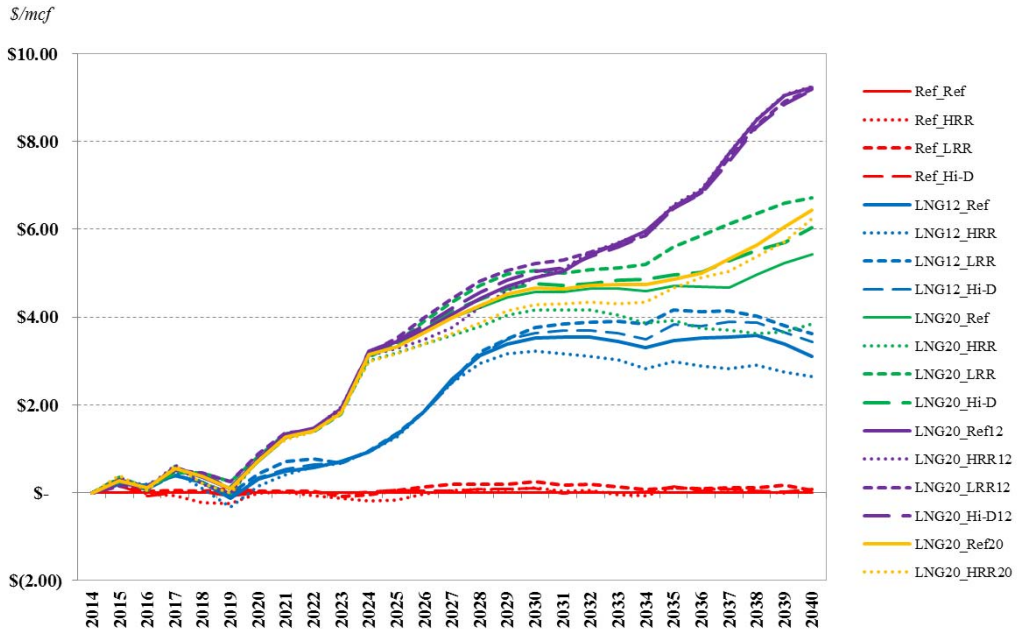


Figure 16. NBP Price Across Scenarios

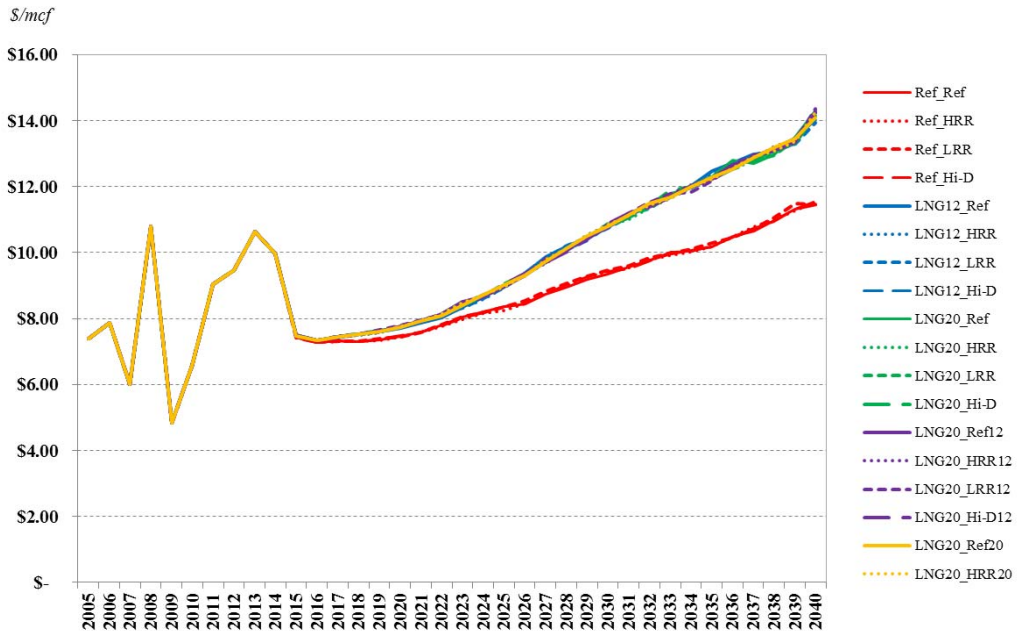
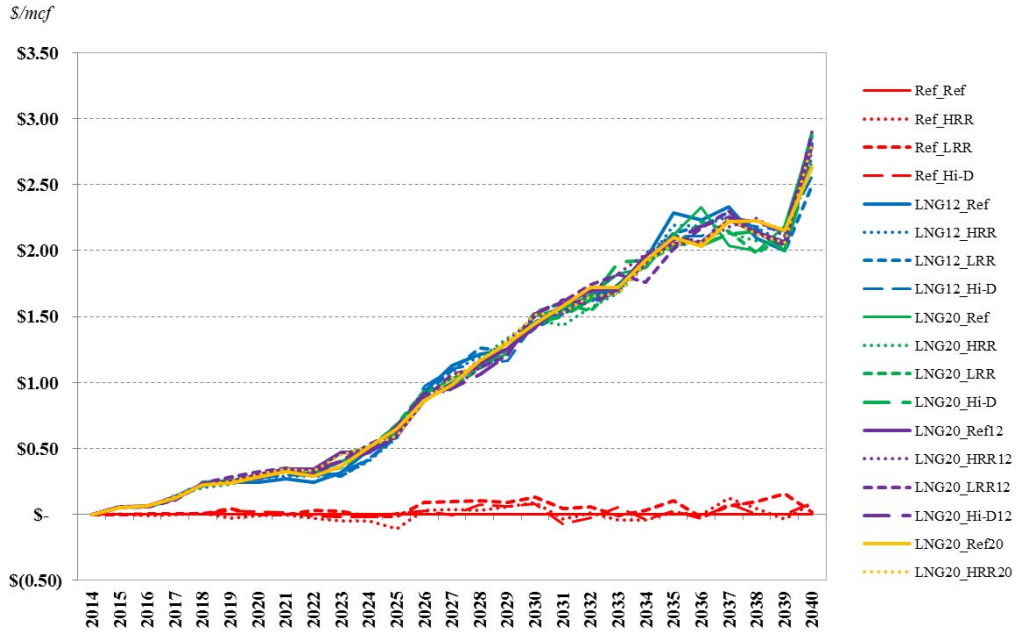


Figure 17. NBP Price Relative to the Ref_Ref Case by Scenario



Figures 16 and 17 detail the pricing results at NBP across the cases. Generally, we see that price is higher in Europe when international market conditions are such that demand for U.S. LNG exports rises. Interestingly, whether or not the increase is to 12 Bcf/d or 20 Bcf/d does not have a significant bearing. This follows because the marginal source of supply to Europe is unchanged beyond the LNG12 international market scenarios and the outlook for total natural gas demand growth in Europe is meager in every case we considered. Thus, the primary sources of supply to northern Europe remain Russia, the North Sea, and LNG primarily from Africa and the Middle East. The price impact is thus driven almost exclusively by deviations in the global LNG market, with modest offsetting responses from traditional pipeline sources of supply, including Russia.

The signal for investments in U.S. LNG export capacity is ultimately contained in the price spreads that emerge across scenarios. Figures 18 and 19 detail the price spreads that are seen between JKM and Henry Hub and NBP and Henry Hub, respectively. The pattern noted above in Figure 9 generally holds across all scenarios. In particular, the global LNG market enters into a period of time where it is relatively well-supplied after 2015. This, in turn, sees price spreads that narrow, and are supportive of LNG exports from the United States through facilities that are already under construction. However, the price spreads post-2015 are generally not supportive of continued investment in new capacity. The stimulus to invest in U.S. LNG export capacity does generally return across the scenarios albeit at different rates. In fact, the higher global LNG demand plus high domestic resource recovery cases see the strongest support for new U.S. LNG export capacity, emerging as soon as the end of this decade, which is about ten years earlier than we see in the Ref_Ref case.

Figure 18. JKM-Henry Hub Price Spreads Across Cases

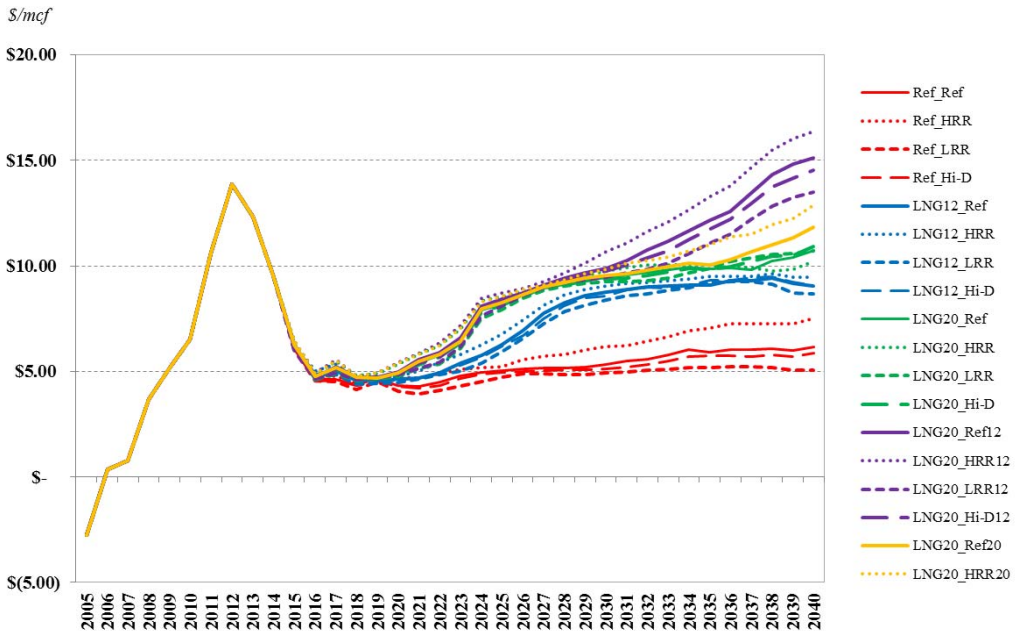


Figure 19. NBP-Henry Hub Price Spreads Across Cases

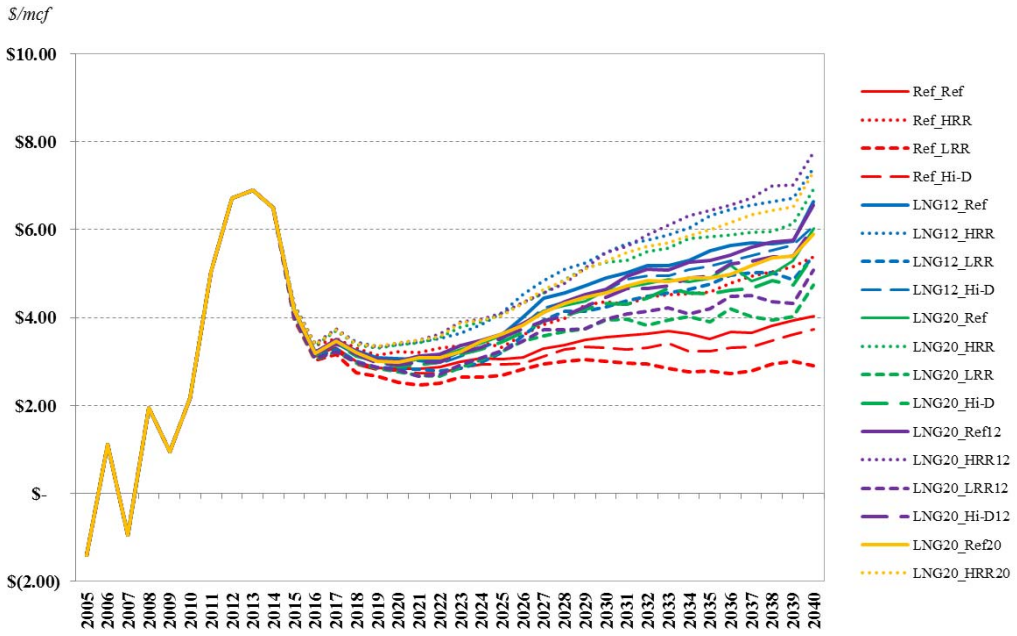
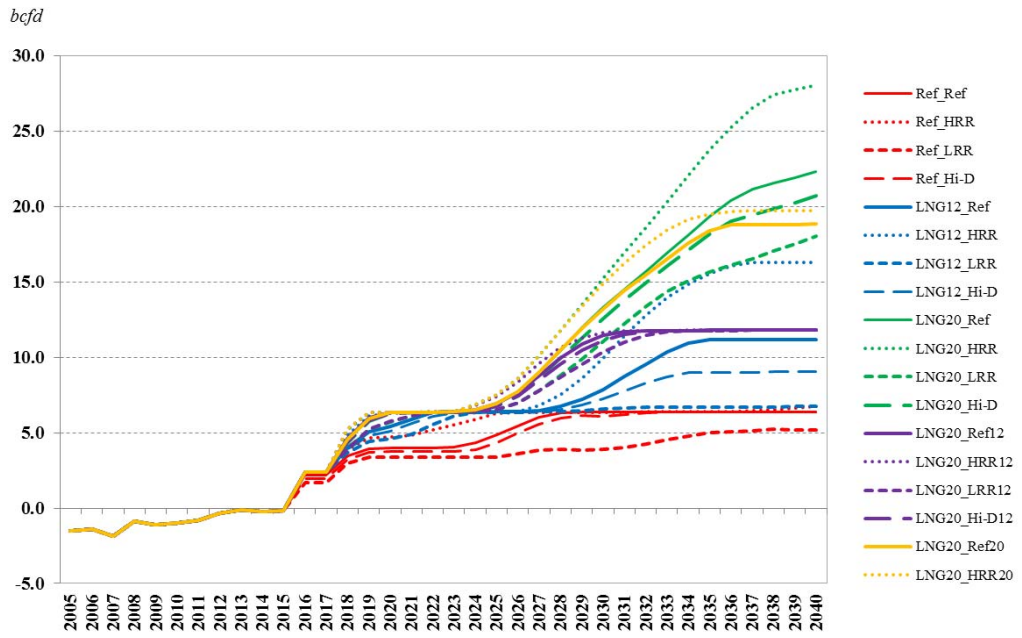


Figure 20 graphs U.S. LNG exports through 2040. Notably, the largest differences emerge after the mid-2020s, a result owing to several factors, including:

- International demand must grow to stimulate investment from new sources of supply. This takes time and generally accompanies economic growth.
- There are a number of planned LNG and pipeline export projects around the world that are already under construction. Thus, absent a very large demand impulse, as in the LNG20 cases, the expansions already underway are sufficient to sate demands for the near term.
- Inhibiting shale resource availability, as in the international LNG12 and LNG20 cases, does not have a material short-term impact because those resources are generally not significant sources of supply even in the international Reference cases until the mid-2020s anyway. So, the supply impact is only felt in the long run.

Figure 20. U.S. LNG Exports Across Scenarios



We see in Figure 20 that the level of U.S. LNG exports approaches 27 Bcf/d in the LNG20_HRR case, which is by far the most aggressive result among the scenarios. This follows from the fact that international market conditions are the most conducive to create demand pull for U.S.-sourced LNG in this case, and the long-term U.S. supply picture is also the most robust. In effect, the international stimulus to total demand for U.S.-sourced natural gas can be met by a very robust supply portfolio.

Table 3. U.S. LNG Exports in 2040 Across Cases (Bcf/d)

		Domestic Scenarios			
International Demand Scenarios		**Reference**	**High Resource Recovery**	**Low Resource Recovery**	**High Natural Gas Demand**
Reference		6.38	6.74	5.20	6.36
Global Demand for U.S. LNG Supports 12 Bcf/d		11.18	16.30	6.73	9.02
Global Demand for U.S. LNG Supports 20 Bcf/d	**U.S. LNG Exports 12 Bcf/d**	11.81	11.82	11.80	11.81
	U.S. LNG Exports 20 Bcf/d	18.82	19.74	*	*
	U.S. LNG Exports Endogenous	22.34	28.05	18.02	20.37

Table 3 indicates the level of U.S. LNG exports in 2040 for every case we considered. The results indicate that the largest driver of change in U.S. LNG exports for a given international market circumstance (or reading across Table 3) is domestic resource availability. It is also evident that for a given domestic scenario (or reading vertically in Table 3), different international market conditions have larger impacts on U.S. LNG export volumes than any of the domestic scenarios we considered.

This highlights the importance of considering the issue of U.S. LNG exports in the context of a global analysis. This point is made even more salient when considering the competiveness of natural gas-consuming industries across countries in a broader macroeconomic framework. We turn to this next.

4 Macroeconomic Impact of Increased U.S. LNG Exports

When comparing the macroeconomic outcomes of different LNG export levels it is important to do so against a clear point of reference. Therefore, we detail the macroeconomic outcomes by comparing cases where international market conditions are held constant as the level of U.S. LNG exports increases. In this section, we focus on the cases where the international market supports more than 20 Bcf/d of demand for U.S. LNG exports. We first present a detailed discussion of the results for the Reference domestic scenario (that is, we compare the LNG20_Ref12, LNG20_Ref20, and LNG20_Ref cases) in order to gauge the effect of increasing U.S. LNG exports above 12 Bcf/d. We then assess whether conclusions drawn from the Reference domestic case hold for the alternative domestic cases—High Resource Recovery (HRR), Low Resource Recovery (LRR) and High Gas Demand (Hi-D).

The key assumptions driving the LNG20_Ref12 case (that is, where international demand supports 20 Bcf/d of U.S. LNG exports but capacity does not exceed 12 Bcf/d in the Reference domestic scenario) are as follows:

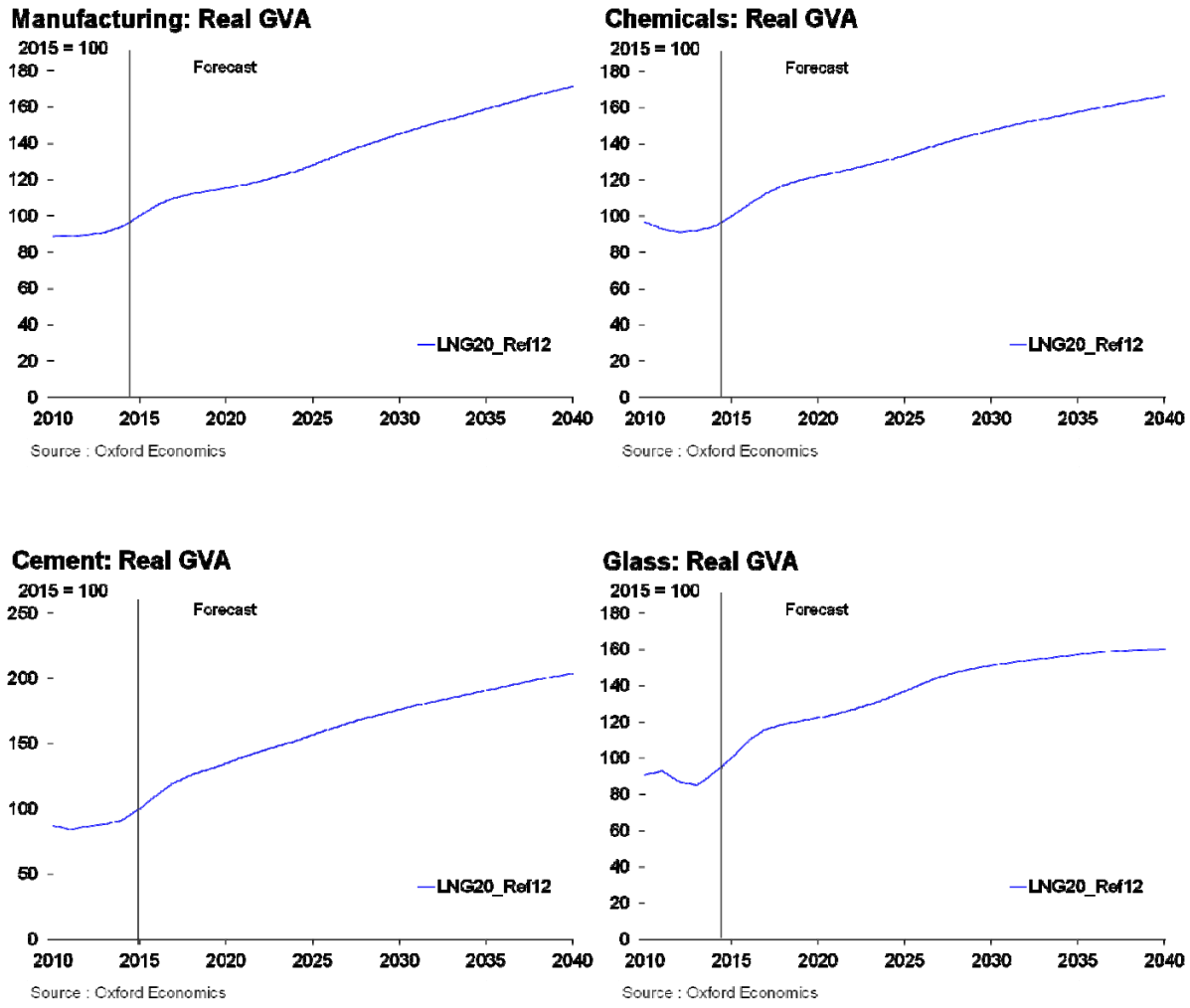
- As discussed in section 2, in order to ensure international demand is sufficient for 20 Bcf/d of U.S. LNG exports, it is assumed accessible shale resources outside the United States are extremely limited relative to the Ref_Ref case. Total accessible shale resources outside the United States are assumed to be 2,713 tcf, compared with 7,578 tcf in the Ref_Ref scenario. In

addition, it is assumed that several large coal-consuming countries, including China, India, Indonesia, and South Korea, reduce coal consumption to limit CO_2 emissions.

- The spread between European and Asian benchmark prices and the Henry Hub price are substantially higher than in the baseline (Ref_Ref) scenario. This follows from diminished supply capabilities outside the United States and ultimately drives an increase in U.S. LNG exports.
- In the LNG20_Ref12 case U.S. GDP growth continues to expand at around 2.6 percent per year on average to 2040.[14] U.S. manufacturing growth continues to expand strongly. Despite higher Henry Hub prices, energy-intensive sectors (EIS) such as chemicals, cement, and glass continue to grow robustly (see Figure 21). Key sectors, such as construction and motor vehicles, continue to drive output in the glass and cement sectors as well as parts of the chemicals sector.

[14] This projection is derived by imposing modeled natural gas market conditions (production and export volumes and prices) on the Ref_Ref baseline. U.S. GDP growth in the Ref_Ref case is based on the EIA 2014 Annual Energy Outlook.

Figure 21. Manufacturing Outlook in LNG20_Ref12 Scenario



Given this backdrop, we compare scenarios in which:

- U.S. LNG exports rise from 12 Bcf/d to a maximum of 20 Bcf/d (that is LNG20_Ref12 vs. LNG20_Ref20).
- U.S. LNG exports rise from 12 Bcf/d to a market-determined level that exceeds 20 Bcf/d (that is LNG20_Ref12 vs. LNG20_Ref).

The rest of this section examines the impact of the scenarios for the natural gas market and the U.S. economy.[15] We begin with a detailed discussion of the results when increasing exports to 20 Bcf/d in the Reference domestic scenario, and then subsequently discuss the impacts in the alternative domestic cases. We then review the impacts of allowing exports to rise to their market-determined level.

4.1 U.S. LNG Exports Increase from 12 Bcf/d to 20 Bcf/d

4.1.1 Natural Gas Market Impacts

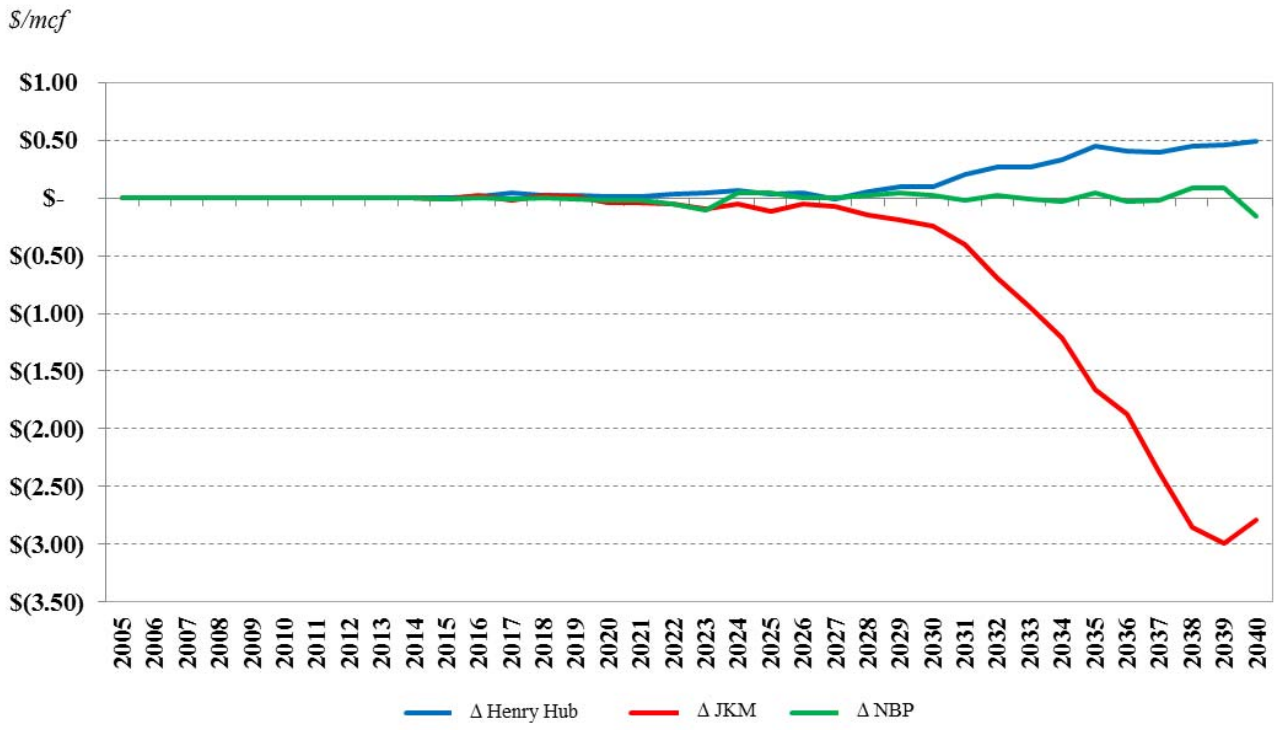
In this section, we highlight the scenarios where international market conditions are supportive of 20 Bcf/d of U.S. LNG exports under the Reference domestic scenario. We begin with the scenario where LNG exports from the United States do not exceed 12 Bcf/d (LNG20_Ref12). Then, we compare this to the case where LNG exports can rise to a maximum of 20 Bcf/d (LNG20_Ref20).

Exports of natural gas overall rise 26 percent, pushing net LNG exports from the United States to 4 Bcf/d from 0.3 Bcf/d in the lower export case. At an aggregate level, the impact on exports, however, is limited, with net fuel exports rising just 0.02 percent of GDP

As indicated in Figure 22, the Henry Hub price rises as LNG exports increase to 20 Bcf/d, while other international benchmark prices decline. This is the result of allowing increased trade from the United States thereby serving to relax the highly constrained supply situation internationally.

[15] Scenario results from the GEM and GIM are presented through 2040, with the focus of analysis covering the period 2026–2040. This is done to highlight the differences across cases. Namely, as indicated in the discussion of the natural gas market results in the previous section, the majority of the differences across scenarios occur after the mid-2020s. Results for the period 2015–2040 and 2015–2025 are given in the Annex. Detailed results for all other modeled scenarios are also available in Annex.

Figure 22. Change in Global Gas Prices (LNG20_Ref20 minus LNG20_Ref12)



Notably, the price response in Asia tends to be greatest as U.S. LNG exports rise to 20 Bcf/d. The JKM price declines in dollar terms by an amount that is roughly six times greater than the price increase at Henry Hub. This is the result of the international market conditions that are simulated in the LNG20 cases. In particular, the LNG demand stimulus is primarily the result of highly constrained supply potentials plus higher demand in Asia. While shale potential is also constrained in Europe in the LNG20 cases, the change relative to the Reference international case is small compared to the change in Asia. In addition, demand is not stimulated in Europe to the same extent as in Asia because the Reference international scenario already assumes policies are in place to reduce CO_2 emissions in Europe. As a result, the European market is simply not as stressed as the Asian market in the LNG20 cases and thus has less to gain from increased availability of U.S. LNG exports.

Figure 23. U.S. Supply by Resource and Play (LNG20_Ref12 case)

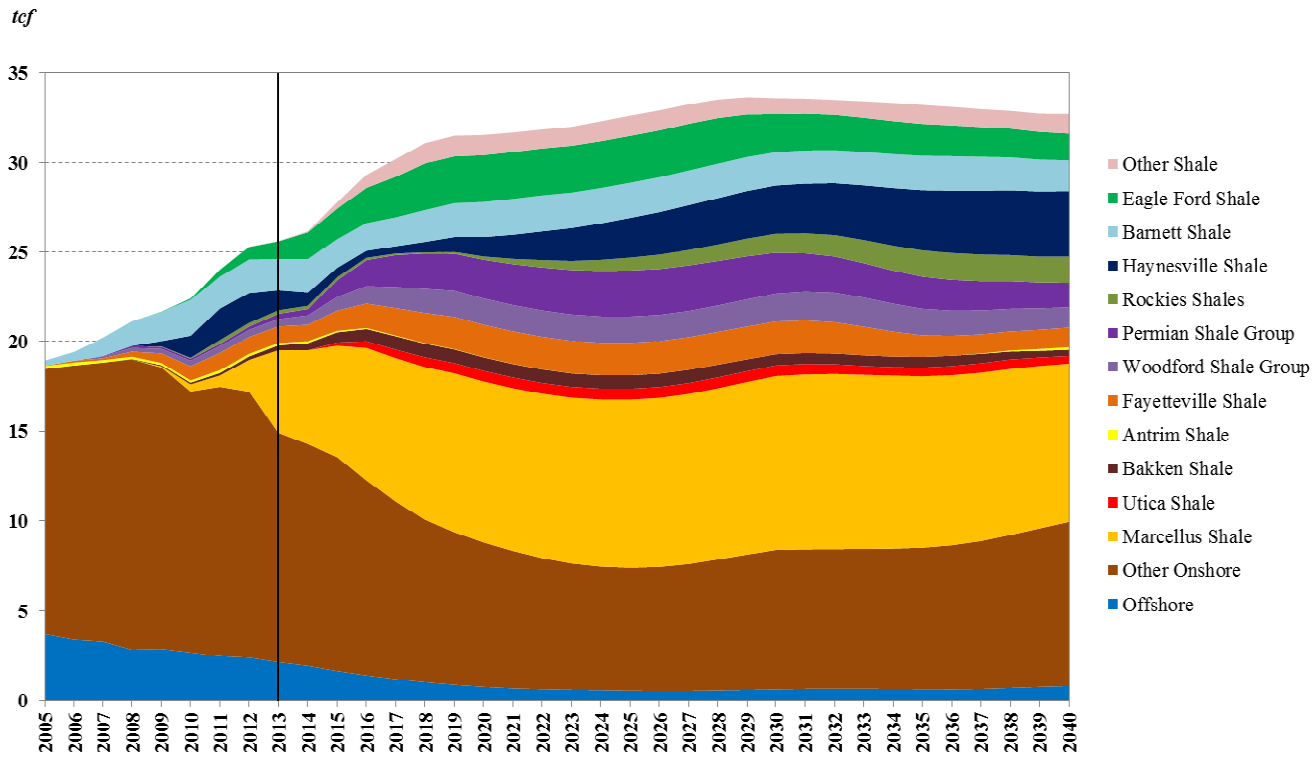
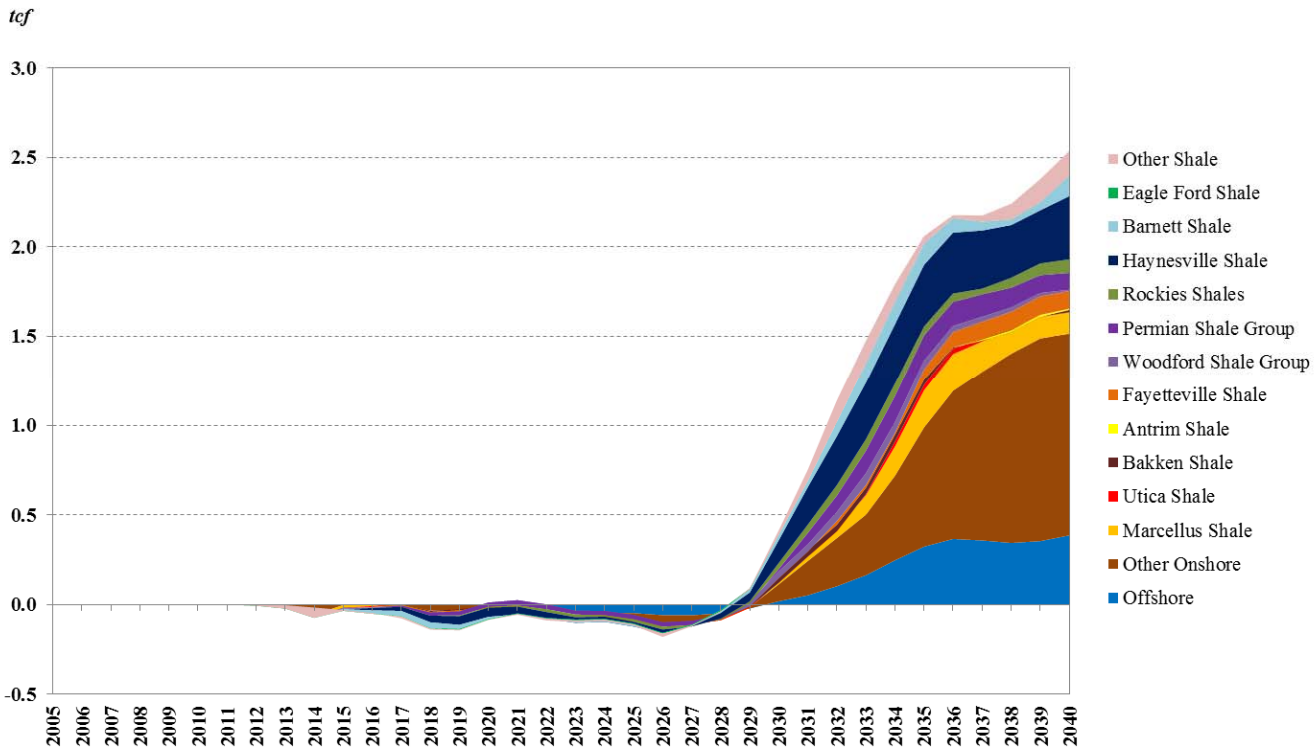


Figure 23 shows that domestic production rises to well over 30 tcf per year by 2030 even when exports are constrained at 12 Bcf/d. While the maximum is only slightly higher than in the Ref_Ref case discussed above in section 3, exports to Mexico via pipeline (not pictured) are lower longer term, which indicates a redirection of supply when international demand pull is greater.

Figure 24. Change in U.S. Production (LNG20_Ref20 minus LNG20_Ref12)



In Figure 24, we see that U.S. production continues to increase through the time horizon when LNG export volumes can expand to 20 Bcf/d, rising 4 percent on average from 2026–2040. Greater LNG exports effectively serve as additional demand for U.S. natural gas, which facilitates additional expansion in the domestic upstream sector.

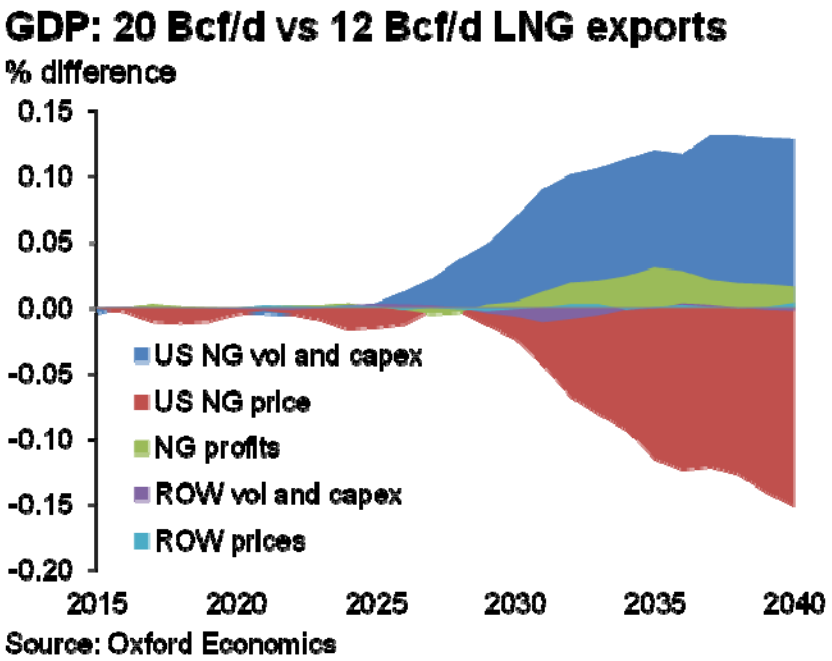
Of course, there are offsetting impacts, but these are relatively small. The majority of the increase in LNG exports is accommodated by expanded production rather than reductions in domestic demand, which declines by about 450 mmcf/d by 2040 with the bulk of the impact split evenly across the power generation and industrial sectors. This fact that the price increase as we move from 12 Bcf/d to

20 Bcf/d of LNG exports slowly climbs to $0.50 by 2040 renders the domestic demand response to be relatively small.

4.1.2 Macroeconomic Impacts in the Domestic Reference Case

The macroeconomic impacts of increasing U.S. LNG exports to 20 Bcf/d from 12 Bcf/d can be decomposed into five main channels identified in section 2.2. When decomposing impacts of greater LNG exports by channel (see Figure 25), the gains from incremental natural gas production and investment in the higher export cases are generally offset to a significant extent by greater increases in U.S. natural gas prices. While U.S. natural gas producers see greater profits, the gains are small relative to the economy as a whole.

Figure 25. GDP Impact by Channel, 20 Bcf/d vs. 12 Bcf/d LNG



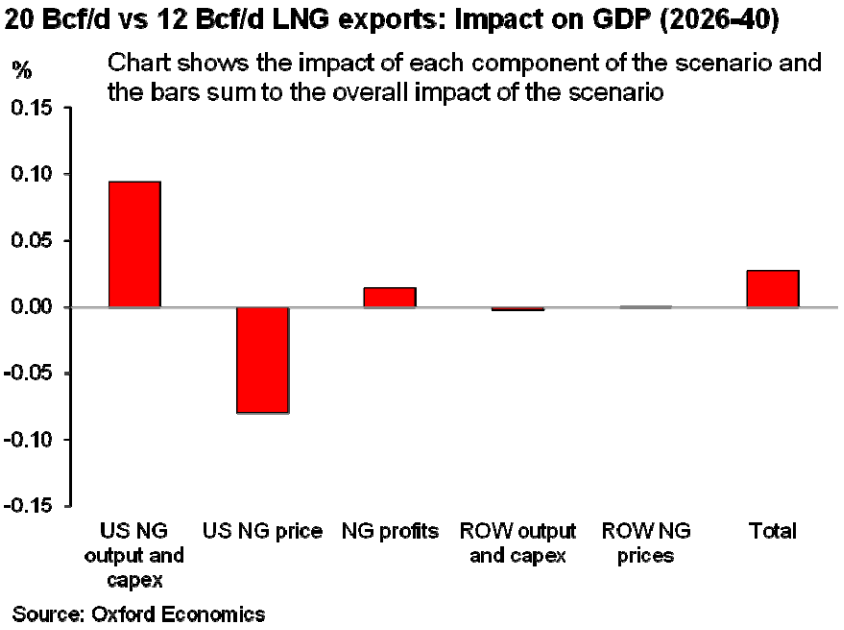


Table 4. Key Scenario Drivers, 12 Bcf/d vs. 20 Bcf/d of LNG Exports (2026–2040 average)

Channel	Indicator	Key Inputs		Change (% or ppts)
		12 Bcf/d	20 Bcf/d	
U.S. LNG Production and Investment	NG production (Bcf/d)	94	97	4.0%
	NG consumption (Bcf/d)	93	93	0.1%
	NG exports (Bcf/d)	17	21	26%
	NG imports (Bcf/d)	16	17	4.2%
	Net fuel exports (% of GDP)*	–	–	0.02%
	Capex (% of GDP)*	–	–	0.06%
U.S. Gas Price	Henry Hub price (2010$/mmBtu)	$6.59	$6.87	4.3%
U.S. Energy Sector Profits	Profits (% of GDP)	0.04%	0.07%	0.03%
Rest of World LNG Production and Investment	Capex (% of GDP)*	–	–	0.00%
Rest of World Gas Prices (2010$/mmBtu)	NBP (UK)	$11.67	$11.68	0.0%
	German Border (NW Europe)	$11.16	$11.16	0.1%
	JKM (Asia-Pacific)	$18.13	$16.89	-6.8%

*Only the change in the value is available and this is applied to more aggregated data

The key drivers of these results are highlighted in Table 4 and are detailed as follows:

- **U.S. LNG Production and Investment**: When U.S. LNG exports rise to 20 Bcf/d from 12 Bcf/d, natural gas production is 4.0 percent higher in the domestic Reference case. This is associated with a rise in net fuel exports of just 0.02 percent of GDP over the period 2026–2040 and additional investment of 0.06 percent of GDP. There are positive multipliers from the extra production and investment, as activity is stimulated in the rest of the economy, and as a result total output is 0.1 percent higher from 2026–2040.
- **U.S. Natural Gas Prices**: The Henry Hub price is, on average, 4.3 percent higher in the 20 Bcf/d export case than the 12 Bcf/d case over the period 2026–2040. As noted above, higher gas prices dampen domestic consumption and erode U.S. export competitiveness. In total, higher prices reduce GDP by 0.1 percent over the period 2026–2040.
- **U.S. Profits**: Profits in the 20 Bcf/d export case are higher given the rise in prices, production and export volumes, but the scale of the impact is small relative to the size of GDP. Profits are 0.03 percent of GDP higher in the 20 Bcf/d case compared with the 12 Bcf/d case. The rise in profit is also modest because it is assumed U.S. producers receive the Henry Hub price on LNG exports rather than the price in the destination market. It assumed that 95 percent of profits are distributed to households and this results in a marginal increase in consumption and GDP over 2026–2040.
- **Rest of World NG Production and Investment**: Production in the rest of the world is little changed when U.S. LNG exports increase to 20 Bcf/d from 12 Bcf/d; international demand conditions remain unchanged, and the addition of incremental U.S. LNG exports displaces very

little supply from the rest of the world. As result, capex needs by the gas sector in the rest of the world remain broadly unchanged when the United States increases LNG exports.

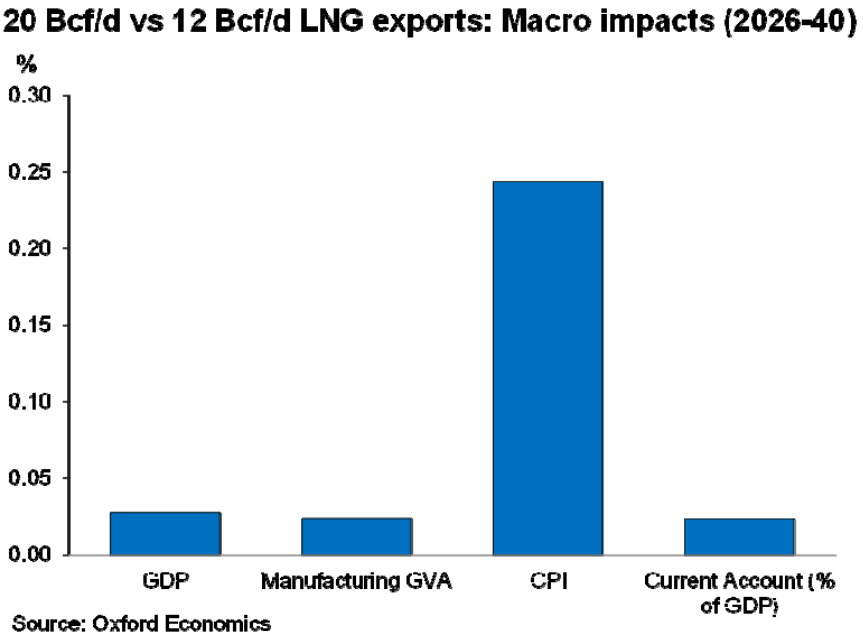
- **Rest of World NG Prices**: The increase in the availability of cheaper U.S. gas exports on the world market dampens NG price increases in Asia, though prices in Europe are little affected. The marginal decline in NG prices both boosts real income in the rest of the world—which boosts demand and is positive for U.S. exports—and boosts the competitiveness of Asian firms relative to U.S. companies, which is negative for U.S. exports. However, the small impact on gas prices and the relative unimportance of natural gas to total energy supply in Asia means that the impact on consumption in Asia is limited as is the competitiveness boost enjoyed by Asian firm from lower gas prices. As result, the overall impact on U.S. GDP through this channel is limited.

The overall macroeconomic impacts of increasing U.S. LNG exports to 20 Bcf/d from 12 Bcf/d are small, reflecting the small size of the shocks relative to the economy overall. In aggregate the size of the economy is little changed in the long run, with GDP less than 0.1 percent ($7.7 billion USD annually in today's prices) higher on average over 2026–2040 than in the 12 Bcf/d export case (see Figure 26).

The United States' current account position is also little impacted by the increase in LNG exports. This is because changes in net exports of LNG are small relative to the size of the economy, and Henry Hub prices are also only modestly higher when the U.S. exports more LNG.

The increase in natural gas prices following an increase in U.S. LNG exports is reflected in a slight increase in the average level of consumer prices, which are 0.25 percent higher on average in the higher export case over the period 2026–2040. However, as this impact is spread over a number of years, so the impact on average inflation is negligible. This modest rise in price level squeezes back some consumer spending and erodes U.S. competitiveness.

Figure 26. Macroeconomic Impact of Increasing LNG Exports to 20 Bcf/d from 12 Bcf/d



At the sector level, firms that supply the natural gas sector and are involved in developing the infrastructure and supply chains needed to increase production and LNG exports benefit. This includes firms in the construction and engineering sectors.

Higher natural gas prices in the United States associated with greater U.S. LNG exports are negative for the energy-intensive manufacturing sectors (see Figure 27), and some sectors—such as glass,

cement, and chemicals[16]—see small declines in output (see Figure 28). These are outweighed by gains in manufacturing industries that benefit from increased investment in the natural gas sector and increased construction activity, such as metals, as well as industry gains attributable to the increase in overall demand (i.e., consumer products, food, etc.). As a result, the manufacturing sector in aggregate is little impacted.

Some sectors such as cement and metals are both energy intensive and construction dependent and their relative exposure to these two factors determines whether or not they benefit from an increase in U.S. LNG exports. However across sectors the overall impacts of greater LNG exports are small compared with the expected growth in sector output through 2040.

[16] It should be noted that the analysis does not account for the potential impacts of higher natural gas production on the production of natural gas liquids (NGL) and the potential impacts of changes in NGL production on the domestic petrochemicals industry. The increase in shale gas production in recent years has been associated with a similar rise in NGL production and a decline in prices, which has benefitted the U.S. petrochemical sector (see, for instance, *U.S. NGLs Production and Steam Cracker Substitution*, Oxford Institute for Energy Studies, September 2014). As such it is possible that the increase in gas production associated with rising exports could provide further benefit to the sector and output overall.

Figure 27. EIS vs. Non-EIS Value-Added, 20 Bcf/d vs. 12 Bcf/d of LNG Exports[17]

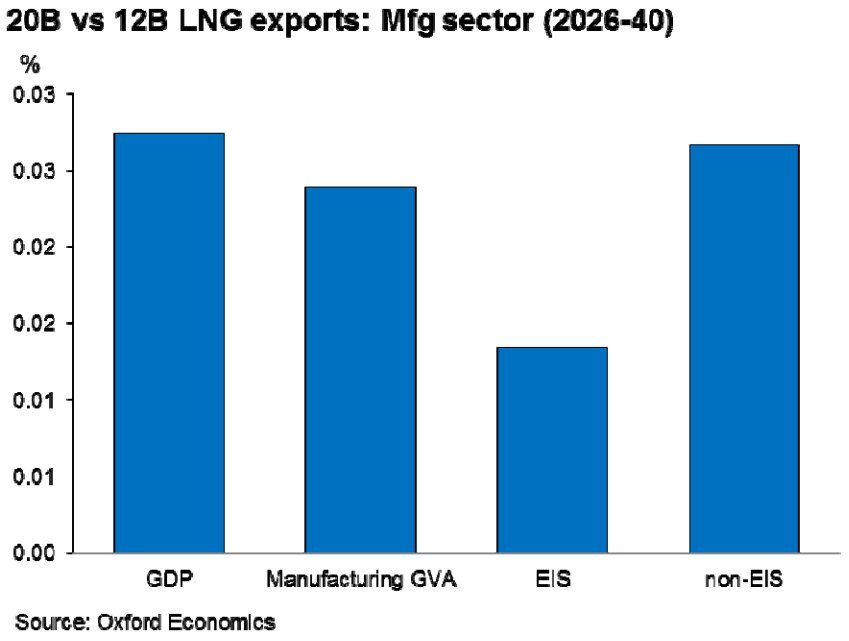
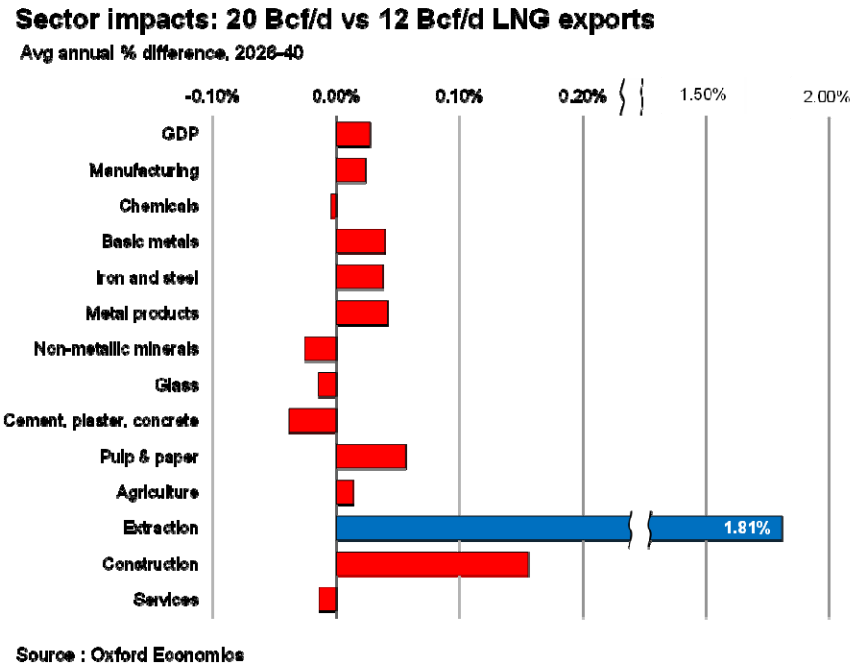
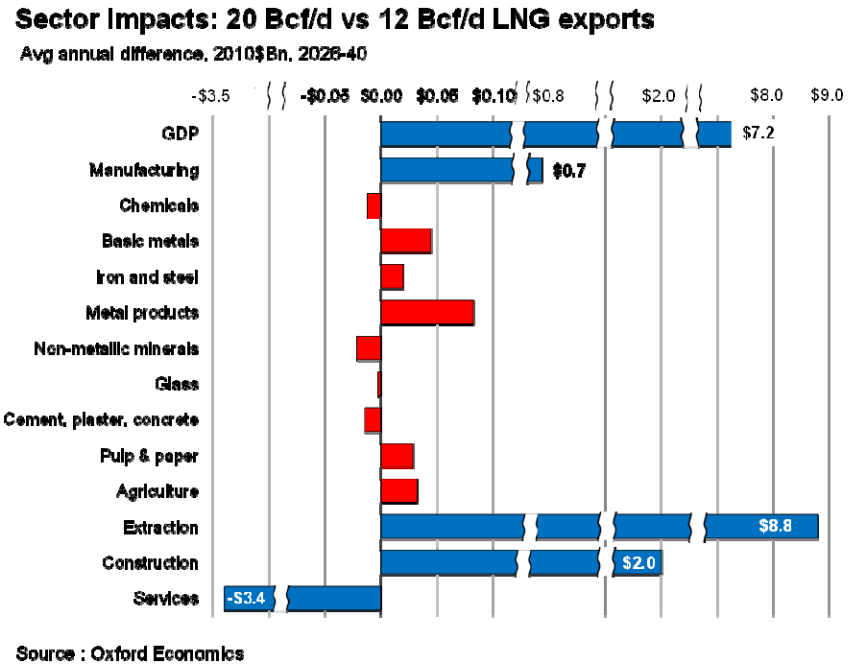


Figure 28. Sector-Level Impacts, 20 Bcf/d vs. 12 Bcf/d LNG Exports



[17] EIS includes chemicals, basic metals and metal products, and non-metallic minerals (which includes cement and glass). These sectors are among the most intensive consumers of natural gas per dollar of output.



4.1.3 Macroeconomic Impacts in the Alternative Domestic Scenarios

The section examines the impact of increasing U.S. LNG exports to 20 Bcf/d from 12 Bcf/d (assuming unchanged international demand) in the HRR case and compares the results to increasing U.S. LNG exports in the Reference domestic case. U.S. exports of LNG do not reach 20 Bcf/d in the LRR scenario and are right at that mark in the Hi-D scenario. Thus, these two alternatives are not assessed here, but are in section 4.2, which examines cases of endogenously determined U.S. LNG exports.

Table 5. Change in Key Scenario Drivers and Scenario Results (2026–2040), 20 Bcf/d vs. 12 Bcf/d LNG Exports Across Domestic Scenarios

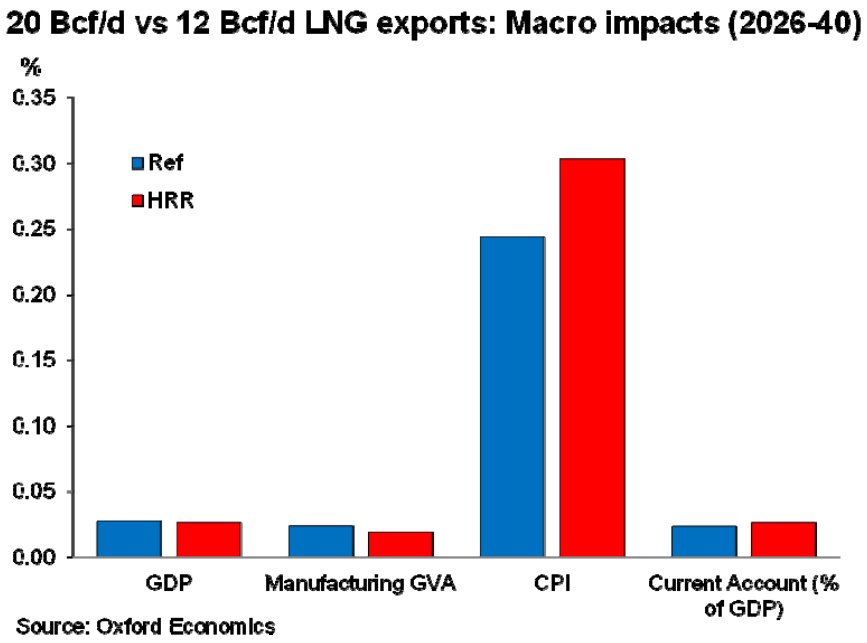
	Reference	High Resource
Scenario Drivers		
United States		
NG Production	4.0%	5.1%
NG Consumption	0.1%	0.3%
NG Exports	26%	28%
NG Imports	4.2%	2.4%
Net Fuel Exp. (% of GDP)	0.02%	0.03%
Henry Hub Price	4.3%	4.7%
Capex (% of GDP)	0.06%	0.06%
Profits (% of GDP)	0.03%	0.03%
Rest of World		
Prices:		
NBP (UK)	0.0%	-0.1%
German Border (NW Europe)	0.1%	0.0%
JKM (Asia-Pacific)	-6.8%	-8.4%
Capex (% of GDP)	0.00%	0.00%
Scenario Results		
GDP Change by Channel		
Total	0.03%	0.03%
U.S. NG Output and Capex	0.09%	0.11%
U.S. NG Price	-0.08%	-0.09%
NG Profits	0.01%	0.02%
Rest of World Output and Capex	0.00%	-0.01%
Rest of World NG Prices	0.00%	0.00%
Manufacturing GVA	0.02%	0.02%

Table 5 compares the changes in the key scenario drivers and outputs when LNG exports increase from 12 Bcf/d to 20 Bcf/d in the domestic Reference (LNG20_Ref12 to LNG20_Ref20) and high domestic resource (LNG20_HRR12 to LNG20_HRR20) scenarios. In the HRR scenarios, there is a greater increase in domestic production when LNG exports increase, a result that follows from the assumptions about U.S. resource endowment. In the higher resource case, LNG production is, on

average, 5.1 percent higher from 2026 to 2040 when LNG exports increase to 20 Bcf/d compared with 4.0 percent increase in the Reference domestic case. The increase in investment is roughly equal between the two cases, and the impact on domestic natural gas prices is slightly greater when U.S. LNG exports increase in the HRR cases compared to the domestic Reference case.

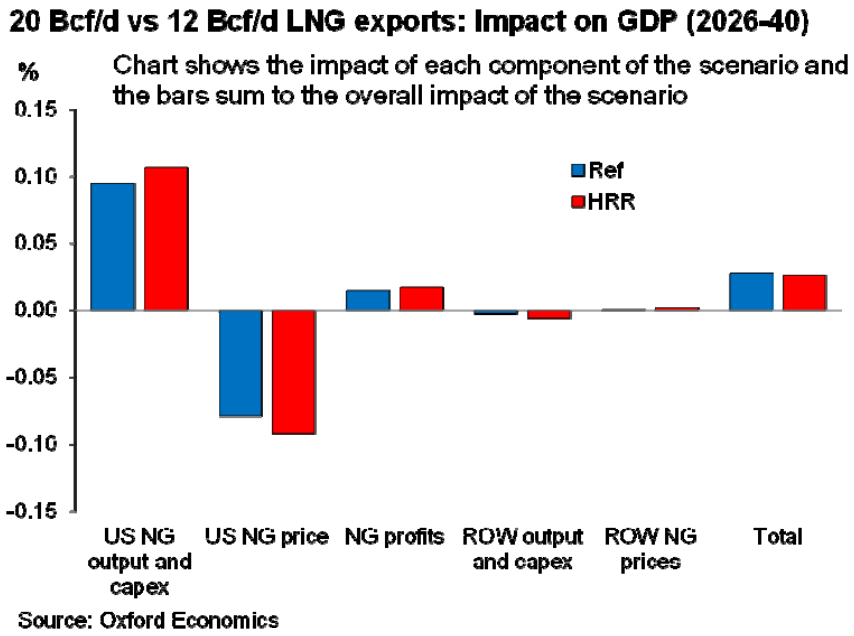
In aggregate, the macroeconomic impacts of increasing export volumes from 12 Bcf/d to 20 Bcf/d in the domestic High Resource scenario are broadly similar to those in the domestic Reference scenario (see Figure 29); GDP is little changed. The higher increase in gas prices has a slightly more pronounced impact on the manufacturing sector. A larger increase in the gas price compared with the reference scenario also results in a bigger impact on the consumer price level and, combined with a slightly larger increase in net gas exports, a slightly larger positive impact on the current account.

Figure 29. Macroeconomic Impacts of Increasing LNG Exports to 20 Bcf/d from 12 Bcf/d in the Domestic Reference and High Resource Scenarios, 2026–2040



Breaking down the results across the different impact channels (see Figure 30), the increase in production and export volumes are slightly higher in the High Resource case, leading to a marginally larger direct impact of rising output in the natural gas sector. However, the increase in prices as LNG exports rise is also slightly larger in the High Resource case, leading to a slightly larger negative macroeconomic impact from this channel. The increase in profits as a share of GDP in each case is the same.

Figure 30. GDP and Manufacturing Sector Impacts, 20 Bcf/d vs. 12 Bcf/d LNG Exports in the Domestic Reference and High Resource Scenarios



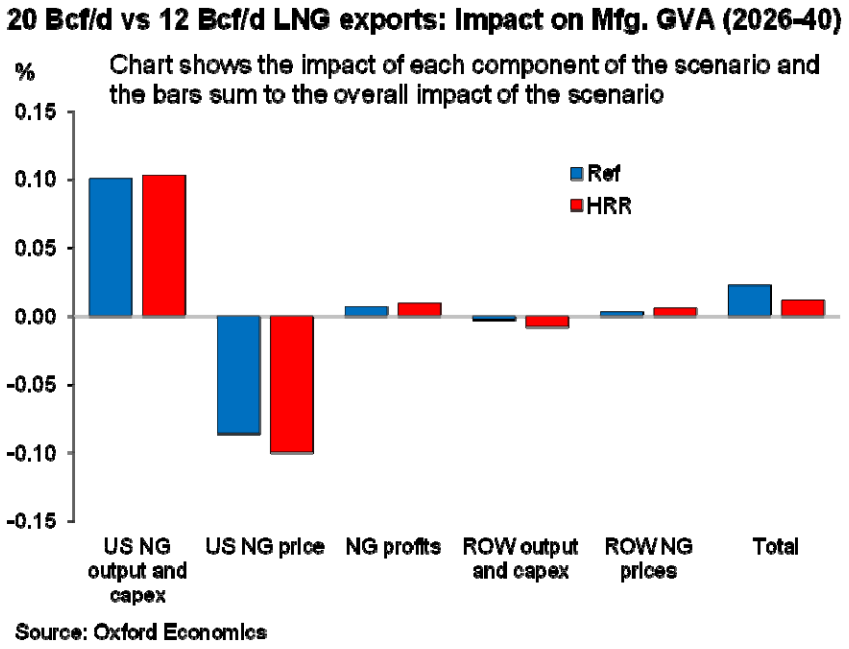


Table 6. Change in Sector Value-Added (2026–2040), 20 Bcf/d vs. 12 Bcf/d LNG Exports

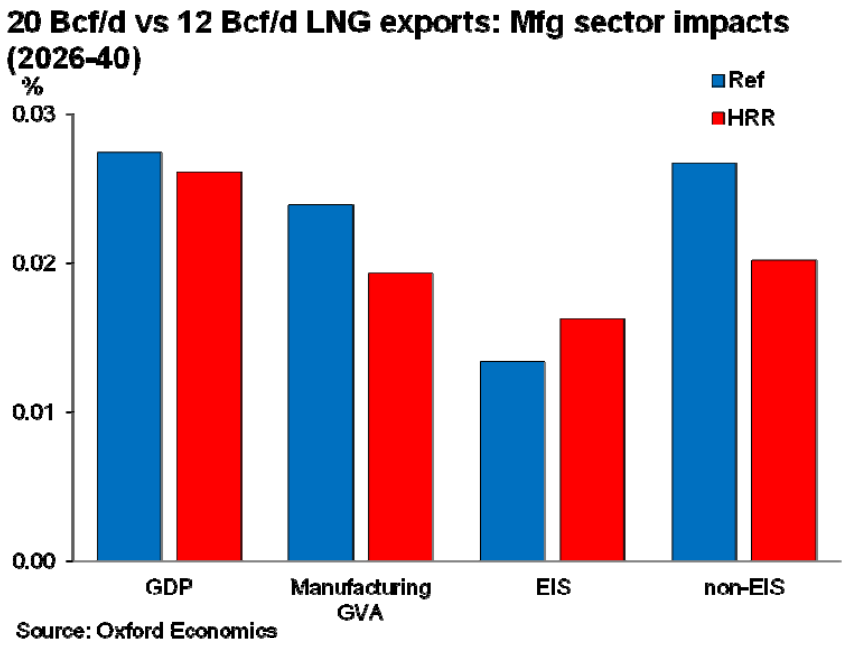
	Reference	High Resource
GDP	0.03%	0.03%
Manufacturing	0.02%	0.02%
Chemicals	0.00%	0.00%
Basic metals	0.04%	0.05%
Iron and Steel	0.04%	0.04%
Metal Products	0.04%	0.05%
Non-Metallic Minerals	-0.03%	-0.04%
Glass	-0.01%	-0.02%
Cement, Plaster, Concrete	-0.04%	-0.05%
Pulp and Paper	0.06%	0.06%
Agriculture	0.01%	0.02%
Extraction	1.81%	2.39%
Construction	0.16%	0.15%
Services	-0.01%	-0.02%

As with the domestic Reference case, impacts from changes in investment and natural gas prices outside of the United States are muted. In aggregate, the increase in LNG exports has little impact on

total output in the long run. Impacts on the manufacturing sector in aggregate are similarly limited. Also, the distribution of results at the sector level (see Table 6) across the HRR scenarios is also similar to those across the domestic Reference scenarios.

Manufacturing output overall is marginally higher in the 20 Bcf/d export case, but lags output overall due to the impacts of higher natural gas prices on energy-intensive production. As in the Reference domestic case, some energy-intensive sectors see small declines in output compared with the 12 Bcf/d export case (see Figure 31), and these negative impacts are slightly larger in the High Resource case due to the larger increase in domestic natural gas prices. Nevertheless these are again negligible compared with the projected output growth of these sectors, and have little noticeable effect on the manufacturing sector as a whole.

Figure 31. EIS vs. Non-EIS Value-Added, 20 Bcf/d vs. 12 Bcf/d LNG Exports in the High Domestic Resource Scenario (2026–2040)



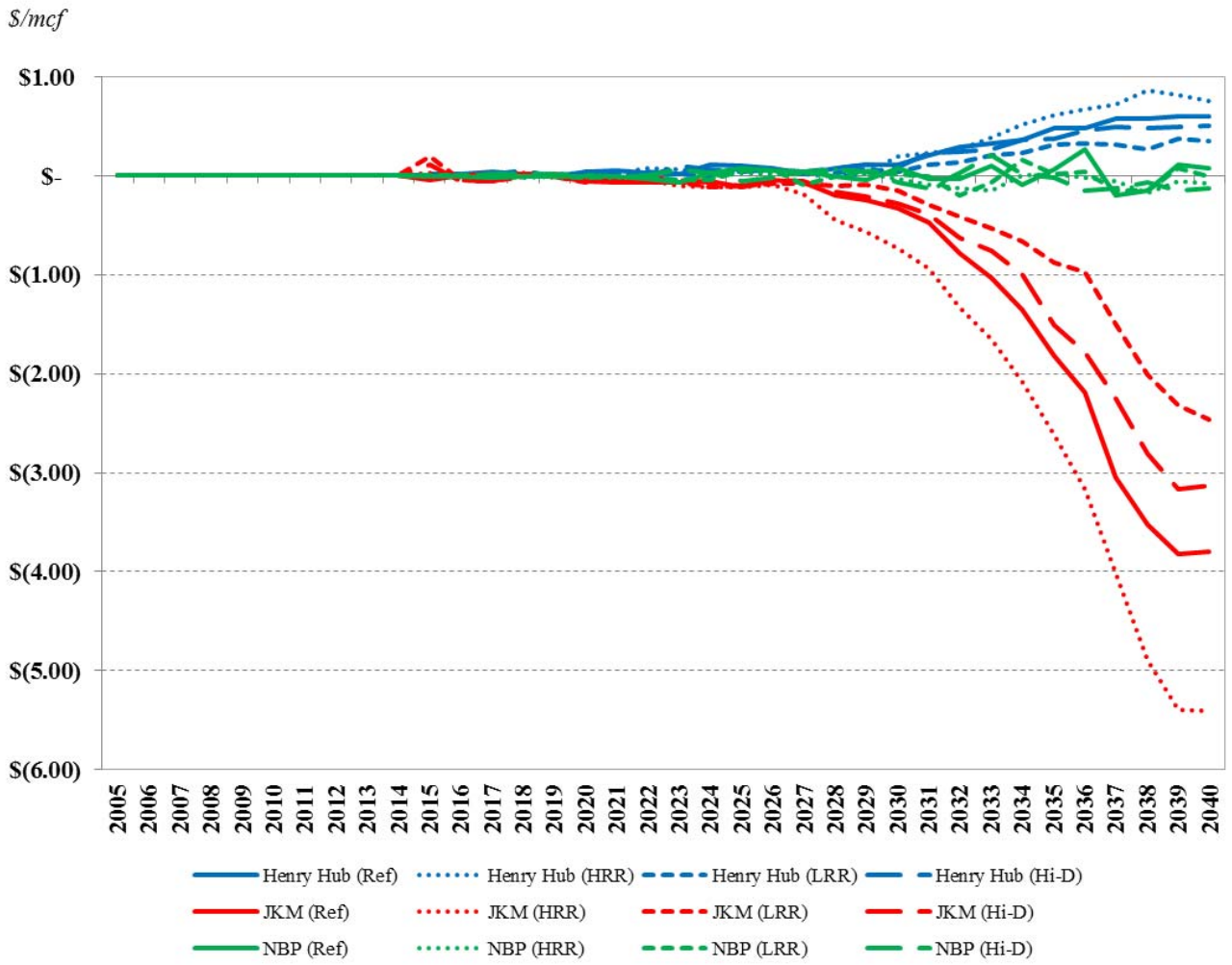
4.2 U.S. LNG Exports Increase from 12 Bcf/d to an Endogenously Determined Level

4.2.1 Natural Gas Market Impacts

In this section, we highlight the scenarios where U.S. LNG exports respond endogenously to demand pull created by international market conditions that are supportive of 20 Bcf/d of U.S. LNG exports under the four different domestic scenarios. We compare these each scenario to the cases where U.S. LNG exports do not exceed 12 Bcf/d (LNG20_Ref12, LNG20_HRR12, LNG20_LRR12, and LNG20_Hi-D12).

As indicated in Figure 32, the Henry Hub price rises as LNG exports increase while other international benchmark prices decline. As in section 4.1, this is the result of allowing increased trade from the United States thereby serving to relax the highly constrained supply situation internationally.

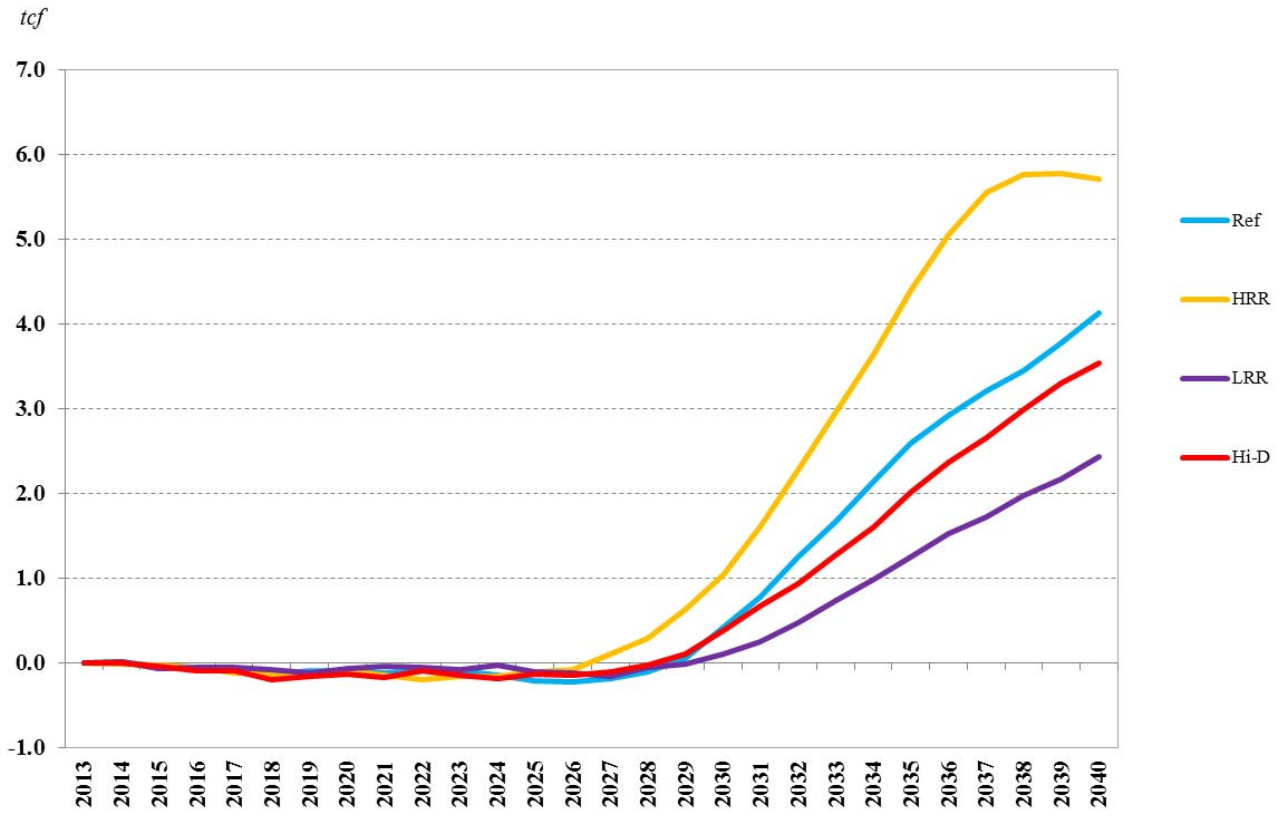
Figure 32. Change in Global Gas Prices
(endogenous exports vs. LNG20 cases where U.S. LNG exports cannot exceed 12 Bcf/d)



As noted in section 4.1, the price response in Asia tends to be greatest as U.S. LNG exports increase. The largest increase in exports occurs in the HRR cases, and it is in these cases where we see the largest increase in Henry Hub (topping out at $0.86 in the late 2030s) and the largest decrease in JKM (approaching $5.50 by 2040). As before, there is virtually no change across the scenarios in the NBP price.

In all cases, as LNG exports increase beyond 12 Bcf/d, U.S. production continues to increase through the time horizon. As indicated in Figure 33, the largest increase in domestic production occurs in the HRR cases, followed by the Ref cases and the Hi-D cases, with the LRR cases seeing the smallest increases in production. Not surprisingly, this is consistent with the change in LNG exports seen across cases and highlighted in section 3.

Figure 33. Changes in Domestic Production
(endogenous exports vs. LNG20 cases where U.S. LNG exports cannot exceed 12 Bcf/d)

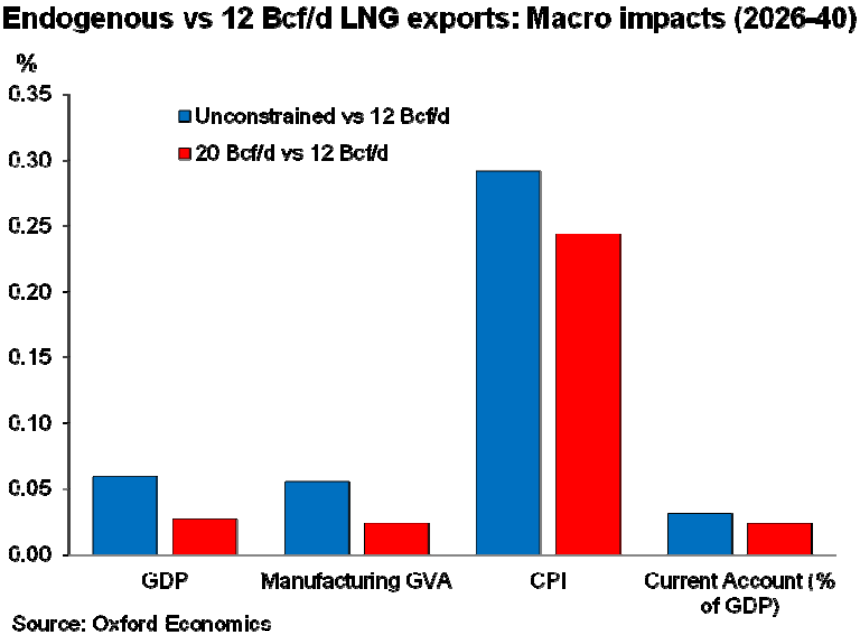


4.2.2 Macroeconomic Impacts

As in the case where LNG exports rise to 20 Bcf/d, the results of increasing exports from 12 Bcf/d to their market-determined level are marginally positive in the Reference domestic scenario. When exports fully respond to international demand conditions we see a larger increase in investment in the natural gas sector than when exports do not exceed 20 Bcf/d. As a result, the endogenous LNG export case produces slightly more positive results than the 20 Bcf/d LNG export case, though the impacts are still very small (see Figure 34).

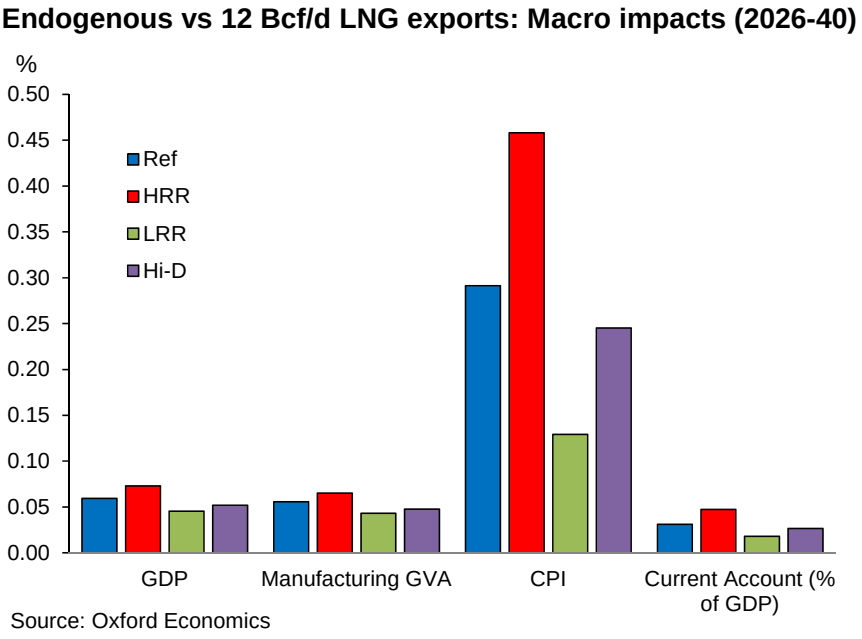
At the same time there is also a greater convergence of domestic natural gas prices with world prices when U.S. LNG exports are allowed to respond fully to global demand conditions as the Henry Hub price increase is greater than in the case where LNG exports could not exceed 20 Bcf/d. Although this helps drive the sector's profits marginally higher, the larger increase in gas prices generates a larger impact on consumer prices in the long run, which offsets some of the positive demand impacts of increased natural gas sector investment by lowering consumption. It should be noted, however, that the price level impacts are small and have little noticeable impact on inflation rates over the forecast horizon. Impacts to the current account are again limited, reflecting both the small direct impact from the increase in net fuel exports and the minor impact of changes in relative natural gas prices on the U.S. export sector overall.

Figure 34. Macroeconomic Impacts of Increasing LNG Exports from 12 Bcf/d, 2026–2040



Results across the alternative domestic scenarios are broadly similar (see Figure 35). In all four cases, impacts on GDP are between 0.05 and 0.07 percent on average over the 2026–2040 period, with the biggest impact in the HRR case where production responds most.

Figure 35. Macroeconomic Impacts of Increasing LNG exports, 2026–2040



Source: Oxford Economics

General price level impacts vary with the change in natural gas prices, but even in the High Resource case, where the impact on Henry Hub prices is the largest, consumer prices are on average just 0.5 percent above the 12 Bcf/d export case over the period 2026–2040. The current account is also little impacted across the domestic cases given the small net export and gas price impacts. The pattern observed in the channel level impacts is consistent across the scenarios, and consistent with that described in in section 4.1.2. Larger increases in natural gas production and exports, which drive larger direct impacts on GDP, are associated with greater increases in domestic natural gas prices, and these contribute to larger negative impacts on consumption and non-fuel exports (see Table 7). Across all scenarios the impacts on profits are negligible, as are the feedback impacts of changes in the natural gas sector outside the United States. Though there are substantial impacts on Asian

natural gas prices, the feedback impacts on the U.S. economy are minimal due to the relatively small share of energy consumption accounted for by gas in Asia.

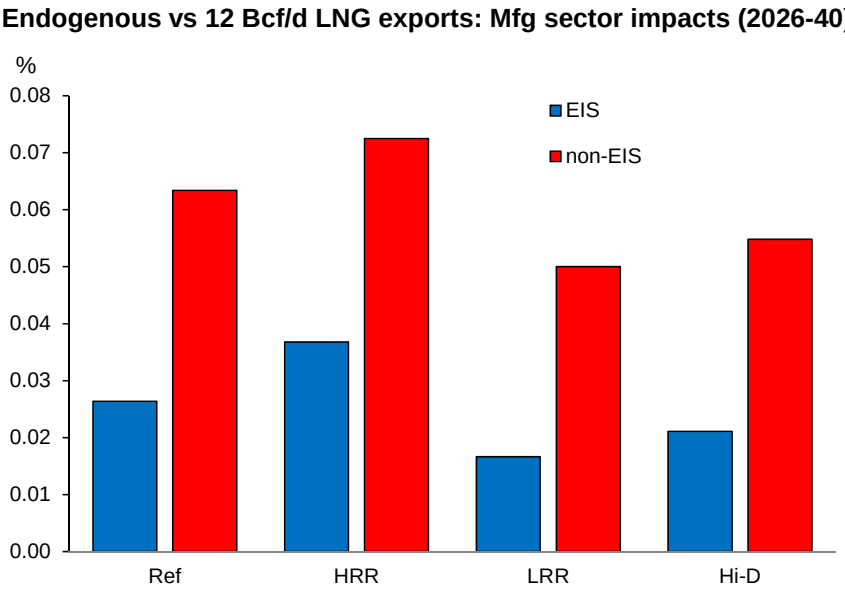
As in the 20 Bcf/d export cases, the energy-intensive sectors generally underperform other downstream sectors (see Figure 36) due to the impacts of higher energy prices.[18]

Table 7. Change in Key Scenario Drivers and Scenario Results (2026–2040), Endogenous LNG Exports vs. 12 Bcf/d LNG Exports

	Reference	High Resource	Low Resource	High Demand
Scenario Drivers				
United States				
NG Production	5.2%	8.5%	2.8%	4.1%
NG Consumption	0.1%	0.5%	0.0%	0.2%
NG Exports	33%	47%	17%	26%
NG Imports	4.3%	4.6%	1.2%	2.6%
Net Fuel Exp. (% of GDP)	0.03%	0.04%	0.01%	0.02%
Henry Hub Price	5.2%	7.5%	2.6%	4.3%
Capex (% of GDP)	0.10%	0.14%	0.07%	0.09%
Profits (% of GDP)	0.04%	0.05%	0.02%	0.03%
Rest of World				
Prices:				
NBP (UK)	0.1%	-0.4%	-0.2%	-0.3%
German Border (NW Europe)	0.1%	-0.1%	-0.1%	0.0%
JKM (Asia-Pacific)	-8.4%	-12.4%	-4.6%	-6.7%
Capex (% of GDP)	0.00%	0.00%	0.00%	0.00%
Scenario Results				
GDP Change by Channel				
Total	0.06%	0.07%	0.05%	0.05%
U.S. NG Output and Capex	0.14%	0.20%	0.09%	0.12%
U.S. NG Price	-0.10%	-0.15%	-0.05%	-0.08%
NG Profits	0.02%	0.03%	0.01%	0.02%
Rest of World Output and Capex	0.00%	-0.01%	0.00%	0.00%
Rest of World NG Prices	0.00%	0.00%	0.00%	0.00%
Manufacturing GVA	0.06%	0.03%	0.04%	0.05%

[18] The lone exception is the High Resource scenario, though the difference is statistically insignificant.

Figure 36. EIS vs. Non-EIS Value-Added, Endogenous vs. 12 Bcf/d LNG Exports (2026–2040)



Source: Oxford Economics

5 Concluding Remarks

The results detailed in this report suggest that the overall macroeconomic impacts of LNG exports are marginally positive. When U.S. LNG exports increase from 12 Bcf/d against the backdrop of an international environment that is consistent with the United States being able to export 20 Bcf/d of LNG, then the overall gain to the U.S. economy is between 0.03 and 0.07 percent of GDP over the period of 2026–2040, or between $7 and $21 billion USD annually in today's prices.

We identified five main channels that determine of the overall economic impact of increasing LNG exports from the United States. These transmission channels are associated production and investment in the natural gas sectors in the United States and the rest of the world, Henry Hub and international natural gas prices, and the profitability of U.S. natural gas producers. The main channel for positive impacts when U.S. LNG exports increase to a higher level, is through higher production

and greater investment in the natural gas sector in the United States. This is due to the fact that most of any U.S. LNG exports would be made possible by increased extraction rather than the diversion of natural gas supplies. U.S. production is between 2.8 and 8.5 percent higher on average over the period 2026–2040 when U.S. LNG exports are increased. The resulting economic benefit typically exceeds any drag on the economy from the main negative impact channel of higher domestic natural gas prices, as this extra natural gas production utilizes high cost resources.

However, the impacts on the U.S. economy through these channels are small. Over the period 2026–2040, the capital investment needed to increase U.S. natural gas production and exports averages between 0.06 and 0.14 percent of GDP, while Henry Hub natural gas prices are between 2.6 and 7.5 percent higher compared to when U.S. LNG exports are 12 Bcf/d. The bulk of the macroeconomic impacts are seen in the period 2026–2040, as this is when developments across scenarios in the natural gas market are the most varied.

Similar to previous studies, our results also suggest an increase in LNG exports from the United States will generate small declines in output at the margin for the energy-intensive, trade-exposed industries. The sectors that appear most exposed are cement, concrete, and glass, but the estimated impact on sector output is very small compared to expected sector growth to 2040. Other sectors benefit from increasing U.S. LNG exports, especially the industries that supply the natural gas sector or benefit from the capex needed to increase production. This includes some energy-intensive sectors such as cement and helps offset some of the impact of higher energy prices.

The results are robust to alternative assumptions for the U.S. natural gas market. The gain for the U.S. economy is greatest when higher levels of resource recovery are assumed in the United States, reflecting a larger increase in production, but the overall impact remains positive in cases with lower resource recovery and higher demand for natural gas in the United States.

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Annex A Background and Statement of Work

The Department of Energy's (DOE) Office of Fossil Energy (FE) has received 45 applications requesting long-term authorization to export domestically produced, lower-48 natural gas as liquefied natural gas (LNG) to non-free trade agreement (FTA) countries in a volume totaling the equivalent of 45.1 billion standard cubic feet per day (Bcf/d) of natural gas.[19] Of these, DOE/FE has granted final authorization for ten applications totaling 9.99 Bcf/d. Currently, the Federal Energy Regulatory Commission is reviewing proposed, lower-48, large-scale LNG export facilities totaling 24.325 Bcf/d under the requirements of the National Environmental Policy Act (NEPA), and has granted authorization to construct six other terminals totaling 10.62 Bcf/d.[20] The Natural Gas Act (NGA), 15 U.S.C. § 717b requires DOE to conduct a public interest review of applications to export LNG and to grant the applications unless DOE finds that the proposed exports will not be consistent with the public interest.[21] Under this provision, DOE performs a thorough public interest analysis before acting.[22]

In 2012, when DOE/FE had received only three applications totaling less than 6 Bcf/d to export LNG to non-FTA countries, DOE/FE commissioned two natural gas export studies—one by EIA and one by NERA Economic Consulting. The studies evaluated macroeconomic and other impacts of LNG exports

[19] As of July 1, 2015. http://energy.gov/sites/prod/files/2015/07/f24/Summary%20of%20LNG%20Export%20Applications_0.pdf.
[20] As of June 18, 2015. http://www.ferc.gov/industries/gas/indus-act/lng/lng-export-proposed.pdf and http://www.ferc.gov/industries/gas/indus-act/lng/lng-approved.pdf.
[21] The authority to regulate the imports and exports of natural gas, including liquefied natural gas, under section 3 of the NGA has been delegated to the Assistant Secretary for FE in Redelegation Order No. 00-002.04E issued on April 29, 2011.
[22] Under NGA section 3(c), the import and export of natural gas, including LNG, from and to a nation with which there is in effect an FTA requiring national treatment for trade in natural gas and the import of LNG from other international sources are deemed to be consistent with the public interest and must be granted without modification or delay. Exports of LNG to non-FTA countries have not been deemed in the public interest and require a DOE/FE review.

from 6 to 12 Bcf/d, the results of which have been used by DOE/FE in evaluating export authorizations.[23]

On May 29, 2014, DOE/FE announced its intention to undertake an updated economic study in order to gain a better understanding of how potential U.S. LNG exports between 12 and 20 Bcf/d could affect the public interest. Specifically, DOE/FE commissioned EIA to update its 2012 LNG Export Study using the *Annual Energy Outlook 2014*.[24]

Further, DOE/FE determined that it would follow the EIA LNG Export Study with an additional study that would evaluate macroeconomic impacts of the exports evaluated in the EIA study and directed the National Energy Technology Laboratory (NETL) to facilitate the performance of this additional analysis. The task was to evaluate the macroeconomic impacts of U.S. LNG exports up to 20 Bcf/d determined by international demand based on a variety of domestic and international scenarios. Further, the task was to assess the potential international demand for U.S. LNG and/or the potential level of U.S. exports that could be supported by the global market, and then to evaluate the macroeconomic impacts of U.S. LNG exports on the U.S. economy, using multiple economic indicators, with an emphasis on the energy sector, and natural gas and energy-intensive industries in particular.

DOE specified that the analysis must rely on authoritative economic models of the U.S. and global economies, U.S. industry (particularly the energy-intensive sector), and the international natural gas market. Also, the analysis had to consider a range of scenarios representing varied assumptions

[23] The EIA and NERA studies can be found at http://www.energy.gov/fe/services/natural-gas-regulation/lng-export-study.
[24] The DOE request can be found here http://energy.gov/fe/downloads/request-update-eia-s-january-2012-study-liquefied-natural-gas-export-scenarios.

regarding export levels, economic growth, global market conditions, and domestic natural gas fundamentals.

NETL directed Leonardo Technologies Inc. (LTI), the prime contractor for its Program and Performance Management Services (PPM) support contract (DE-FE0004002), to carry out the task. LTI determined that it did not have the "authoritative models" called for, nor did it have the economic modeling expertise required to perform this work quickly. Accordingly, it was necessary for LTI to contract with an appropriate subcontractor or subcontractors in order to carry out the work to DOE specifications.

LTI began by compiling a list of known economic consultants with reputations for robust, authoritative modeling of domestic and international energy issues. LTI then cross-walked these firms against a list of companies that had contributed economic analyses as part of the application process followed by companies seeking to export LNG. Many of these companies had either past or present consulting relationships with companies seeking approval from DOE to export LNG and thus were considered to have potential conflicts of interest. For commercial reasons, some companies indicated that they would not be interested in performing this type of public analysis.

LTI determined that the best course of action would be to divide the work into two key subtasks:

- Subtask 1: Determination of international demand for U.S. LNG under different scenarios.
- Subtask 2: Determination of U.S. macroeconomic impacts of various LNG export scenarios consistent with international demand.

Given the need for meeting the criteria listed above, it was determined that separate contractors should be selected for the tasks. After a due diligence evaluation of the capabilities of the available alternatives, LTI selected Dr. Kenneth Medlock with the Center for Energy Studies at Rice University's Baker Institute as the subcontractor for Subtask 1, and Oxford Economics as the subcontractor for Subtask 2.

The final Statement of Work provided to LTI by NETL is found in Annex A.1.

A1. Statement of Work

Study to Assess Macroeconomic Impacts of U.S. Liquefied Natural Gas (LNG) Exports

INTRODUCTION:

The Department of Energy's (DOE) Office of Fossil Energy (FE) has received 36 applications requesting long-term authorization to export domestically produced, lower-48 natural gas as liquefied natural gas (LNG) to non-free trade agreement (non-FTA) countries in a volume totaling the equivalent of 38.06 billion standard cubic feet per day (Bcf/d) of natural gas.[25] Of these, DOE/FE has granted final authorization to three applicants totaling 3.94 Bcf/d. Currently, the Federal Energy Regulatory Commission is reviewing proposed, lower-48, large-scale LNG export facilities totaling 17.47 Bcf/d under the requirements of the National Environmental Policy Act (NEPA), and has granted authorization to construct four other terminals totaling 7.08 Bcf/d.[26] The Natural Gas Act (NGA), 15 U.S.C. § 717b requires DOE to conduct a public interest review of applications to export LNG and to grant the applications unless DOE finds that the proposed exports will not be consistent with the public interest.[27] Under this provision, DOE performs a thorough public interest analysis before acting.[28]

In 2012, when DOE/FE had received only 3 applications totaling less than 6 Bcf/d to export LNG to non-FTA countries, DOE/FE commissioned two natural gas export studies – one by EIA and one by NERA Economic Consulting. The studies evaluated macroeconomic and other impacts of LNG exports from 6 to 12 Bcf/d, the results of which have been used by DOE/FE in evaluating recent export authorizations.

On May 29, 2014, DOE/FE announced its intention to undertake an updated economic study in order to gain a better understanding of how potential U.S. LNG exports between 12 and 20 Bcf/d could affect the public interest. Specifically, DOE/FE commissioned EIA to update its 2012 LNG Export Study using the *Annual Energy Outlook (AEO) 2014*.[29]

DOE/FE and the National Energy Technology Lab (NETL) will follow the EIA LNG Export Study with a study that will evaluate macroeconomic impacts of the exports evaluated in the EIA study. If at any future time the cumulative export authorizations approach the high end of export cases examined,

[25] As of November 7, 2014.
[26] As of October 14, 2014. http://www.ferc.gov/industries/gas/indus-act/lng/lng-export-proposed.pdf and http://www.ferc.gov/industries/gas/indus-act/lng/lng-approved.pdf
[27] The authority to regulate the imports and exports of natural gas, including liquefied natural gas, under section 3 of the NGA has been delegated to the Assistant Secretary for FE in Redelegation Order No. 00-002.04E issued on April 29, 2011.
[28] Under NGA section 3(c), the import and export of natural gas, including LNG, from and to a nation with which there is in effect a free trade agreement (FTA) requiring national treatment for trade in natural gas and the import of LNG from other international sources are deemed to be consistent with the public interest and must be granted without modification or delay. Exports of LNG to non-FTA countries have not been deemed in the public interest and require a DOE/FE review.
[29] DOE/FE's request to EIA, including the study scope can be found at http://www.energy.gov/fe/downloads/request-update-eia-s-january-2012-study-liquefied-natural-gas-export-scenarios

the DOE will conduct additional studies as needed to understand the impact of higher export ranges. At all levels, the cumulative impacts will remain a key criterion in assessing the public interest.

PURPOSE:

The purpose of this task is to evaluate the macroeconomic impacts of U.S. LNG Exports at levels up to 20 billion standard cubic feet per day (Bcf/d) determined by international demand across several scenarios based on domestic and international cases. The analysis will have two elements: first, to assess the potential international demand for U.S. LNG, and second, to evaluate the macroeconomic impacts of U.S. LNG exports on the U.S. economy, using multiple economic indicators, with an emphasis on the energy sector, and natural gas and energy-intensive industries in particular.

To conduct these evaluations, the prime contractor will identify and employ subcontractors with authoritative econometric models of the U.S. and global economies, U.S. industry, particularly the energy-intensive sector, and the international natural gas market. The analysis will consider a range of scenarios representing varied assumptions regarding export levels, economic growth, global market conditions, and domestic natural gas supply and demand.

ANALYSIS TO BE PERFORMED:

To inform the public-interest determinations of LNG export applications, the two tasks will be performed as outlined below.

Task 1: Scenario Analysis of International Demand for U.S. LNG Exports and Market Conditions of the Global Natural Gas Market. This analysis will provide three reasonable scenarios of international demand for U.S. LNG exports over the 2015-2040 timeframe. These demand scenarios will include a range of plausible conditions for the global natural gas market. The contractor will develop a most likely reference case for the global natural gas market and four sensitivity cases that reflect higher levels of international demand for LNG, modeled across a range of domestic resource and demand cases (See Table 1). These cases will be developed with and approved by DOE prior to model runs. The output of this task will be an input to Task 2 described below. At a minimum, the output of this task will address the following characteristics of the global natural gas market over the analysis timeframe in each of the three cases:

a. Demand for U.S. LNG exports segmented by U.S. geographical area of export;
b. Global natural gas production by region;
c. Global natural gas consumption by region;
d. Pricing mechanisms in each region for natural gas;
e. Global wellhead prices by region;
f. Global City Gate prices by region;
g. Global liquefaction costs by region;
h. Global regasification costs by region;

i. Global transportation costs by region;
j. Global supply elasticities by region; and
k. Global demand elasticities by region.

Task 2: U.S. Macroeconomic Impact and Price Response Based on International Demand for U.S. LNG Exports. This analysis will assess the macroeconomic impact of U.S. LNG exports at levels determined by international demand as identified in Task 1 across several scenarios based on domestic and international cases. The price impacts of LNG exports should be incorporated, including a discussion of how domestic natural gas prices are determined and the potential for correlation between domestic and international natural gas prices. This report should include a discussion on fuel demand scenarios, such as demand for natural gas in the power sector, and fuel investment scenarios, such as investment capacity to build the facilities and investment in production scenarios. This analysis should incorporate any spillover effects from the impact of LNG exports on global macroeconomic performance, including discussion of direct, indirect, induced, and catalytic impacts.

a. Timeframe: The timeframe for analysis is from 2015-2040.
b. Domestic Scenarios. The following domestic scenarios will be considered:
    i. A domestic reference case;
    ii. Low oil and gas recoverability case;
    iii. High oil and gas recoverability case; and
    iv. High natural gas demand case.
c. International Scenarios. The international scenarios and assumptions identified in Task 1 will be considered:
    i. The international reference case;
    ii. Sensitivity case 1 with global energy market conditions such that demand for U.S. export volumes is at 12 Bcf/d for the domestic reference case; and
    iii. Sensitivity case 2a with global energy market conditions such that demand for U.S. exports is at 20 Bcf/d for the domestic reference case but U.S. export volumes do not exceed 12 Bcf/d.
    iv. Sensitivity case 2b with global energy market conditions such that demand for U.S. exports is at 20 Bcf/d for the domestic reference case and U.S. export volumes do not exceed 20 Bcf/d.
    v. Sensitivity case 2c with global energy market conditions such that demand for U.S. export volumes is at 20 Bcf/d for the domestic reference case and U.S. export volumes are unconstrained.
d. Indicators. This analysis will consider, at a minimum, the impact of LNG exports using the below economic indicators:
    i. U.S. natural gas prices;
    ii. U.S. Gross Domestic Product (GDP);
    iii. Levels of U.S. employment;

iv. U.S. aggregate consumption;
v. U.S. aggregate investment;
vi. U.S. natural gas export revenues;
vii. U.S. government receipts;
viii. U.S. current account; and
ix. Energy-intensive industry performance.

Table 1: Scenarios to be analyzed in the Macroeconomic Model Based on International Demand for U.S. LNG Exports up to 20 Bcf/d

International Demand Cases		Domestic Scenarios			
		Reference	**High Resource Recovery**	**Low Resource Recovery**	**High Natural Gas Demand**
Reference		Ref_Ref	Ref_HRR	Ref_LRR	Ref_Hi-Demand
Sensitivity Case 1 – Global Demand for U.S. LNG at 12 Bcf/d		12B_Ref	12B_HRR	12B_LRR	12B_Hi-Demand
Sensitivity Case 2 – Global Demand for U.S. LNG at 20 Bcf/d	a.US Exports Limited to 12 Bcf/d	20B_Ref_Cap12	20B_HRR_Cap12	20B_LRR_Cap12	20B_Hi-Demand_Cap12
	b.US Exports Limited to 20 Bcf/d	20B_Ref_Cap20	20B_HRR_Cap20	20B_LRR_Cap20	20B_Hi-Demand_Cap20
	c.Endogenous US Export Level	20B_Ref	20B_HRR	20B_LRR	20B_Hi-Demand

e. Macroeconomic performance comparisons will include, among other comparisons to be provided, an analysis of the impact of increasing export volumes from 12 Bcf/d to 20 Bcf/d when there is sufficient global demand for the higher level of exports via the following comparisons:
   i. 20B_Ref_Cap20 case compared to 20B_Ref_Cap12;
   ii. 20B_HRR_Cap20 case compared to 20B_HRR_Cap12;
   iii. 20B_LRR_Cap20 case compared to 20B_LRR_Cap12; and
   iv. 20B_Hi-Demand_Cap20 case compared to 20B_Hi-Demand_Cap12.

DELIVERABLES:

The following deliverables will be provided to DOE/FE/NETL.

1. Kickoff meeting with prime contractor, subcontractors, DOE-FE, and NETL representatives in attendance to formally agree on study objectives, flow, and timing of milestones and deliverables by both subcontractors and prime contractor. Special attention will be paid to the inputs required from the subcontractor for Task 1 required the subcontractor for Task 2.
2. Work plan with schedule and milestones. Within two weeks after the initiation of the study, the contractor will provide DOE/FE/NETL with a work plan that outlines the study approach to include a schedule of key activities and milestones. There is no prescribed format.
3. Weekly status updates. Each week, the prime contractor will provide an update regarding the study's progress to DOE/FE/NETL staff. These updates will typically be conducted as conference calls. The subcontractors may be required to participate as necessary.
4. Working level conference call meetings to discuss the Task 1 model results, their integration with Task 2 modeling, and a review of a broad range of key econometric parameters. This would include confirmation of alignment of the model with the EIA scenarios, and assumptions/results on other key energy and major macroeconomic variables. The subcontractors will be required to participate.
5. Working level meeting to discuss Task 2 model results, and a review of a broad range of key econometric parameters. This would include confirmation of alignment of the model with the EIA scenarios, and assumptions/results on other key energy and major macroeconomic variables. The subcontractors will be required to participate.
6. Preliminary findings report and presentation. The contractor will prepare a preliminary report, integrating individual Task reports provided by subcontractors, that discusses the draft findings of the three areas of analysis and will provide to DOE/FE for review. The prime contractor will prepare an integrated presentation to accompany the preliminary report for use in briefing DOE/FE/NETL and other government officials regarding the study. The prime contractor, together with appropriate representatives from each of the subcontractors, will discuss the preliminary findings with DOE/FE/NETL staff and determine whether the scenarios and assumptions identified are still valid, some cases should be eliminated, and/or other cases added. Should additional work beyond that outlined in this Statement of Work (SOW) be identified, appropriate alterations to this SOW, together with allocated funding adjustments, will be developed and implemented.
7. Final report. The prime contractor will prepare a final report incorporating final reports from both Task 1 and Task 2 subcontractors that explains in detail the findings of the three areas of

analysis and will provide to DOE/FE/NETL. This final report will be released for public comment and published in the public domain.

8. Response to questions. After releasing the study results, at the request of DOE/FE/NETL, the prime contractor, with input from appropriate subcontractors, will prepare written responses to questions about the study raised through public comment or export application proceedings.

Deliverable	Due Date
Kickoff meeting	Upon completion of subcontracts (Feb 3, 2015)
Work plan with schedule and milestones	2 weeks from kickoff meeting
Status updates	Weekly
Discussion of preliminary Task 1 results	4 to 11 weeks from kickoff meeting
Delivery of revised Task 1 results to Task 2 contractor	13 weeks from kickoff meeting
Discussion of preliminary Task 2 results	15 weeks from kickoff meeting (May 19, 2015)
Preliminary findings report	17 weeks from kickoff meeting (June 1, 2015)
Final report	20 weeks from kickoff meeting (June 19, 2015)
Response to questions	TBD following final report

Annex B Modeling Approach

B1. The Rice World Gas Trade Model

The RWGTM is a dynamic spatial partial equilibrium model in which all spatial and temporal arbitrage opportunities in natural gas markets are captured. As such, each point of infrastructure in the gas delivery value chain—field development, pipelines, LNG regasification, LNG shipping, and LNG liquefaction—is modeled as an independent, intertemporal, profit-maximizing entity. Thus, in addition to a host of fixed parameters such as the upfront fixed cost, interest rate on debt, required return on equity, debt-equity ratio, income tax rate, sales tax rate, and royalty, the optimal investment path for field development is dependent on the wellhead price and for transportation infrastructure on the tariff collected. In this manner, the model is solving a classic intertemporal optimization problem for investment in fixed capital infrastructure.[30]

Put another way, the RWGTM proves and develops resources, constructs and utilizes transportation infrastructure, and calculates prices to equate demands and supplies while maximizing the present value of producer profits within a competitive framework. New capital investments in production and delivery infrastructure thus must earn a minimum return for development to occur. The debt-equity ratio is allowed to differ across different categories of investment, such as proving resources, developing wellhead delivery capability, constructing pipelines, and developing LNG infrastructure. By developing supplies, pipelines, and LNG delivery infrastructure, the RWGTM provides a framework for

[30] The initial conditions are calibrated to recent historical data. The terminal value condition must also be specified in order to find an optimal investment path in natural gas production and delivery infrastructure. As such, the transversality condition is modeled by assuming a competing technology, such as solar, becomes available at a specified delivered price to consumers in unlimited quantities. The RWGTM Reference case assumes the competing price is $14 per mcf equivalent in 2020, declining to $9 per mcf equivalent by 2070. We have run scenarios where the adoption of the backstop is accelerated through cost reductions, but that is not germane to this proposed study.

examining the effects of different economic and political influences on the global natural gas market within a framework grounded in geologic data and economic theory. In fact, the RWGTM has been used to this end in multiple studies and published works.[31]

B1a. Demand in the RWGTM

Regions in the RWGTM are defined at the country and sub-country level into 290 regional demand sinks, with extensive representation of natural gas transportation infrastructure. The extent of detail in each region is primarily based on data availability. In addition, demand sinks are situated along transportation networks in order to simulate actual flows of natural gas. Countries and regions with well-developed energy infrastructure, such as the United States, have extensive sub-regional detail, which allows better understanding of the effects that intra-regional capacity constraints and differences in regional policies may have on current and future market developments. Outside the United States, demand is modeled for the power-generation sector and all direct uses, which includes residential, commercial, and industrial demands. In the United States, demand is modeled at the state and sub-state level specifically for the residential, commercial, industrial, and power generation end-use sectors.

In the United States, sub-state demand representation is significant and is located based on data from the U.S. general and Economic Census—for example county-level populations—as well as the location

[31] For example, see Kenneth B. Medlock III, "Modeling the Implications of Expanded U.S. Shale Gas Production," *Energy Strategies Review* No. 1, (2012); Peter Hartley and Kenneth B. Medlock III, "Potential Futures for Russian Natural Gas," *Energy Journal*, Special Issue, "World Natural Gas Markets and Trade: A Multi Modeling Perspective" (2009); Peter Hartley and Kenneth B. Medlock III, "The Baker Institute World Gas Trade Model," in *Natural Gas and Geopolitics: 1970–2040*, edited by David Victor, Amy Jaffe, and Mark Hayes, Cambridge University Press (2006); Peter Hartley and Kenneth B. Medlock III, "Political and Economic Influences on the Future World Market for Natural Gas," in *Natural Gas and Geopolitics: 1970–2040*, edited by David Victor, Amy Jaffe, and Mark Hayes, Cambridge University Press (2006).

of power plants obtained from U.S. EPA NEEDS database. For example, there are 10 regions in Texas, 5 regions in California, 4 regions in Pennsylvania, and 5 regions in New York. Table B1 outlines the sub-regional detail of U.S. demand by state in the RWGTM.

Table B1. Example of Regional Detail in the RWGTM (U.S. Lower 48)

State	# of Regions	State	# of Regions	State	# of Regions
Alabama	2	Maine	1	Ohio	3
Arizona	2	Maryland*	3	Oklahoma	1
Arkansas	1	Massachesetts	2	Oregon	2
California	5	Michigan	2	Pennsylvania	4
Colorado	1	Minnesota	1	Rhode Island	1
Connecticut	2	Mississippi	4	South Carolina	2
Delaware	1	Missouri	1	South Dakota	1
Florida	4	Montana	1	Tennessee	2
Georgia	3	Nebraska	1	Texas	10
Idaho	1	Nevada	2	Utah	1
Illinois	2	New Hampshire	1	Vermont	1
Indiana	2	New Jersey	4	Virginia	3
Iowa	1	New Mexico	2	Washington	2
Kansas	1	New York	5	West Virginia	1
Kentucky	2	North Carolina	2	Wisconsin	1
Louisiana	4	North Dakota	1	Wyoming	3

* - includes Washington DC

Outside the United States, sub-national detail varies depending on infrastructure and data availability. For example, there are 6 regions in India, 8 regions in China, 6 regions in Germany, 4 regions in the UK, 10 regions in Australia, 1 region in Bangladesh, 2 regions in Thailand, etc.[32] In international locations, the distribution of natural gas demands outside the power-generation sector is based on regional populations obtained from the website City Population (http://www.citypopulation.de/). Natural gas demands in the power-generation sector are generally regionalized using the location of

[32] A more extensive detail is available upon request.

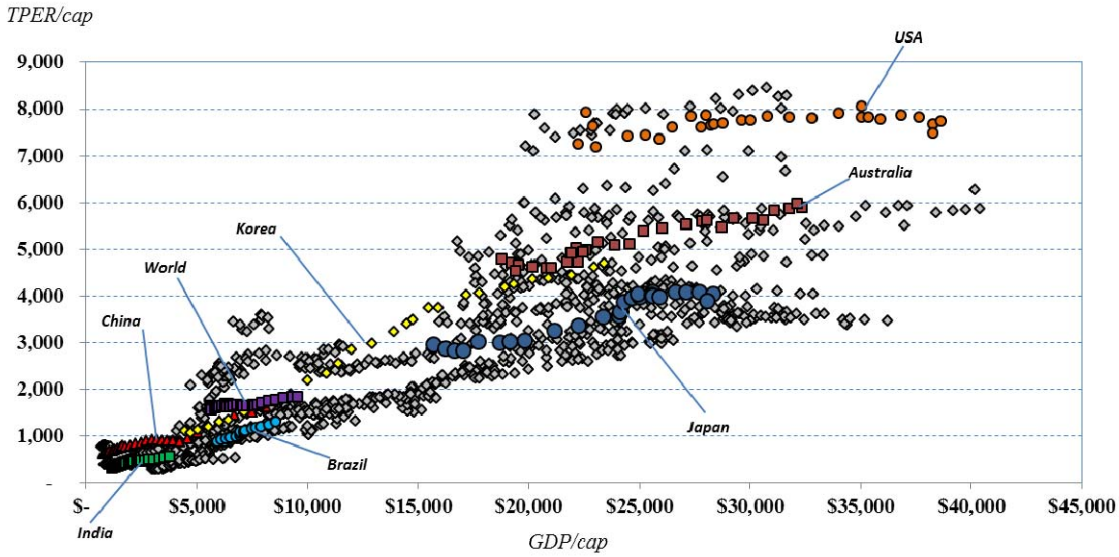
natural gas power plants, which is obtained from several sources, including *Platts* and the *Oil and Gas Journal*.

In order to forecast demand for natural gas, we begin by forecasting total primary energy requirement (TPER) for every country around the world. This is done by econometrically estimating the relationship between energy intensity (defined as TPER divided by GDP) and real (purchasing power parity adjusted) per capita income using a panel of 67 countries covering 1980–2010. This follows a large literature on the subject that has found energy intensity declines as per capita income rises, after rising to a peak generally associated with industrialization of an economy (see, for example, Medlock and Soligo [2001]). Specifically, as continued economic development begets changes in economic structure, and as improvements in end-use energy efficiency occur, energy intensity declines. This tends to drive a decline in the income elasticity of energy demand as per capita income rises.

Figure B1 indicates data for TPER per capita plotted against GDP per capita for 67 countries (in 2010$ USD). This is the data used to estimate the relationship between energy intensity and income. We have highlighted a few select countries for illustrative purposes. As can be seen in Figure B1, energy use increases with GDP. However, perhaps not as obvious, the rate of increase declines as economic development progresses. As referenced above, this is driven by both structural and technical change, and it leads to declining energy intensity.[33]

[33] Medlock (2009) expands on this point in great detail.

Figure B1. Total Primary Energy Requirement Across 67 Countries from 1980–2010



Source: International Energy Agency

Although the number of countries included in the estimation of the energy intensity-income relationship far from captures all countries, the countries included collectively account for over 90 percent of global energy demand. We use the estimated relationship to forecast TPER for all countries. This step requires us to multiply the forecast for energy intensity by a forecast for GDP. For the purpose of this study, GDP forecasts for use in the RWGTM are provided by Oxford Economics.[34] As population growth also matters, population growth rates are adopted from the United Nations mid-trend growth projections. These rates of growth, of course, vary significantly across countries, but we do not consider scenarios with alternative population growth rates in the analysis conducted herein.

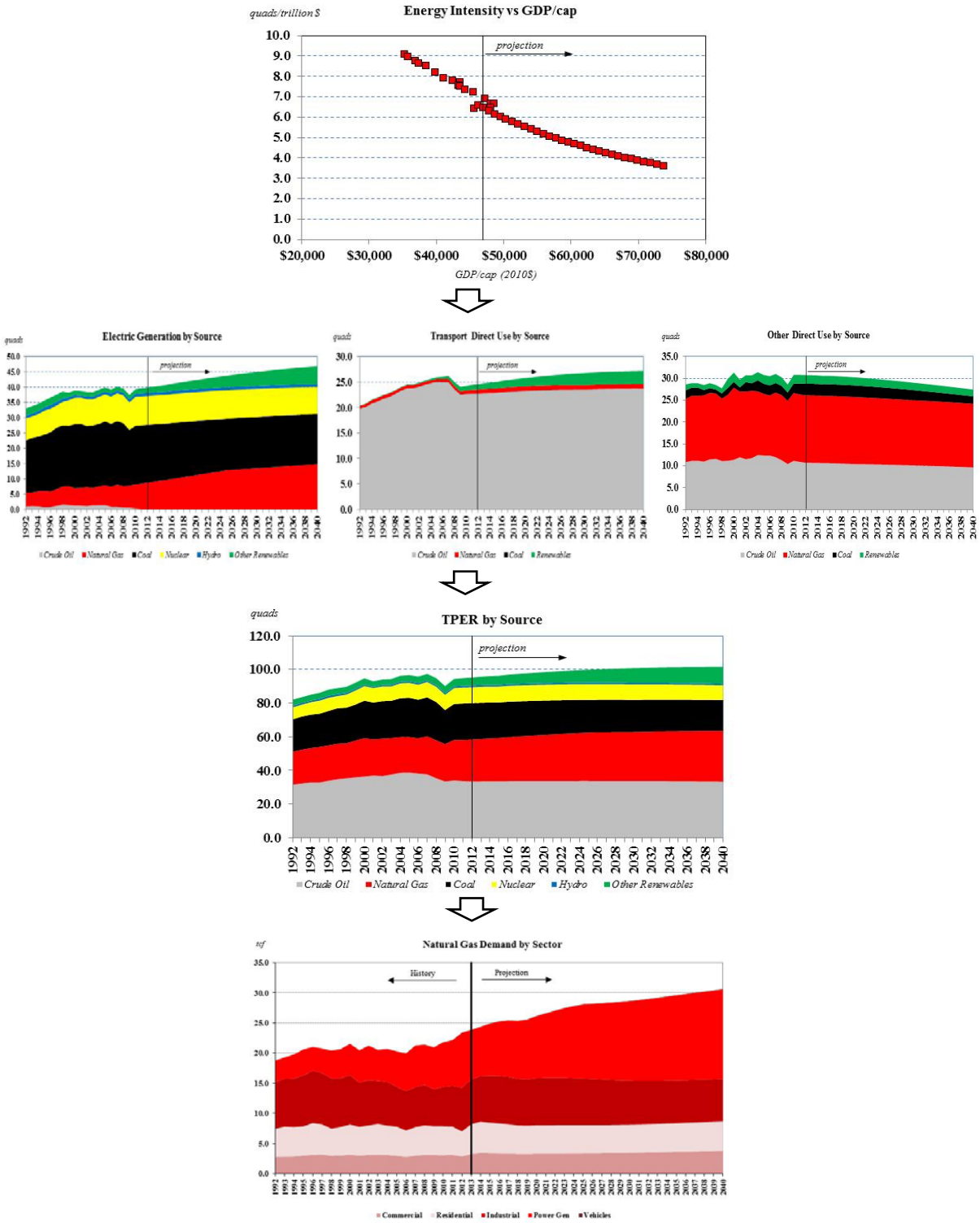
TPER is disaggregated into demand by end-use sector designations—transport, other direct uses, and electric generation—and by component fuel shares—coal, gas, oil, nuclear, hydro, and other renewables. Sector demands are allowed to evolve according to econometrically fit relationships

[34] More detail on the forecasts can be made available upon request.

between electricity intensity of TPER and GDP and transport energy intensity of TPER and income. Other direct uses are modeled as the remainder of TPER.[35] We then incorporate announced policy dictating various forms of energy—such as nuclear, renewables, and hydro—and allow an econometric fit of the residual component shares (all of which are fossil fuels) to determine the mix of crude oil, natural gas, and coal in TPER by sector. The fuel shares are fit using a simultaneous equations framework that includes the effects of relative fuel prices. In addition, the econometric fits indicate that higher incomes reveal an increasing preference for natural gas versus coal, which is consistent with the *relative* preference ordering of environmental attributes increasing with rising incomes. The results of this exercise are depicted for the United States in Figure B2.

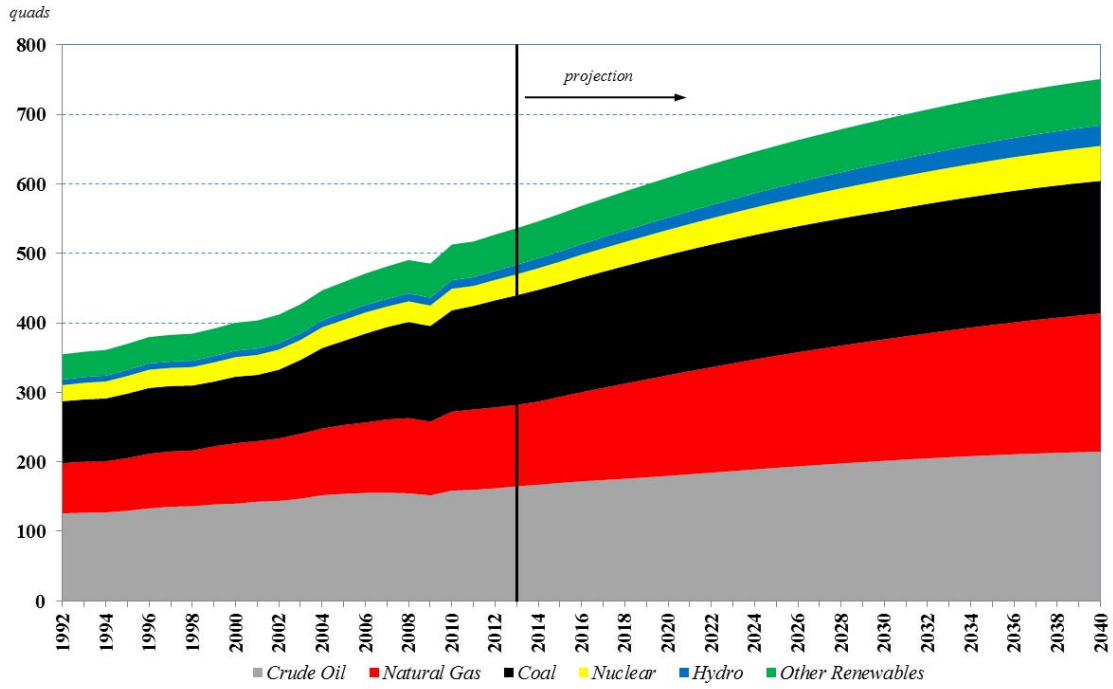
[35] So, we fit the share of electric generation in TPER against per capita income and the share of transportation energy in TPER against per capita income. The residual share is classified as other direct uses. The relationships are all non-linear, and the results generally indicate increasing electrification and transport orientation. Note these are shares, not absolute values.

Figure B2. Illustration of U.S. Demand (1992–2040) Estimation by Step



We generate forecasts for every country in the world in a similar manner. Aggregating across all countries yields the global TPER forecast seen in Figure B3.

Figure B3. Global TPER by Source



In addition, we generate forecasts by fuel source for every country in the world. It is important to point out that the forecast methodology as described is specific to a set of prices. As such, the demands in any given year are just one point along a demand curve. Thus, we call the initial demands that follow from this exercise the RWGTM "reference demand" because it is the demand that is associated with a specific reference price. The reference demand is included in the RWGTM along with the estimated price elasticity thus allowing demand to be price-responsive. As such, if the model-solved price deviates from the reference price, the demand in each end-use sector deviates from the reference demand according to estimated country-specific, sector-specific price elasticity.

Table B2. Implied Price Elasticity of Demand by Country/Region and Sector

Region	Countries	Direct Use	Power Gen
AFRICA	East Africa (Sudan/Ethiopia/Somalia/Kenya/Uganda/Tanzania)	-3.2811	-3.0875
	Algeria	-0.0945	-0.0332
	Egypt	-0.1403	-0.0354
	Libya	-0.2020	-0.0522
	Morocco	-0.5861	-0.1761
	Tunisia	-0.2383	-0.0339
	Southern Africa (South Africa/Namibia/Mozambique/Botswana)	-0.4050	-0.3418
	Angola	-0.1809	-0.4728
	Nigeria	-0.1512	-0.0327
	Northwest Africa	-0.4324	-1.1198
	West Central Coast Africa (Cameroon/Eq Guinea/Gabon/Congo)	-0.8257	-1.4507
ASIA and PACIFIC	Afghanistan	-1.1321	-0.1994
	Bangladesh	-0.1449	-0.0400
	China	-0.5872	-0.2632
	Hong Kong	-2.9761	-0.1080
	India	-0.5816	-0.1572
	Myanmar	-0.1411	-0.0581
	Nepal	-3.4637	-4.8156
	Pakistan	-0.1492	-0.0598
	Sri Lanka	-0.7934	-0.3116
	Thailand	-0.4131	-0.0479
	Vietnam/Laos/Cambodia	-0.5665	-0.0560
	Brunei	-0.0954	-0.0360
	Indonesia	-0.1877	-0.1150
	Japan	-0.7368	-0.0910
	Malaysia	-0.1492	-0.0465
	North Korea	-3.7623	-4.4502
	Philippines	-1.3388	-0.0949
	Singapore	-0.5043	-0.0363
	South Korea	-0.5342	-0.1613
	Taiwan	-1.1917	-0.1456
	Australia	-0.2593	-0.1379
	New Zealand	-0.3012	-0.1133
	Papua New Guinea	-1.2936	-0.2313
CENTRAL AND SOUTH AMERICA	Argentina	-0.1012	-0.0443
	Bolivia	-0.1358	-0.0373
	Brazil	-0.3258	-0.2105
	Central America	-3.5509	-3.7979
	Cuba	-0.5989	-0.1214
	Other Caribbean	-1.1636	-0.1052
	Chile	-0.2773	-0.0779
	Colombia	-0.1459	-0.0766
	Ecuador	-0.6186	-0.0900
	Paraguay	-3.4812	-4.0898
	Peru	-0.2777	-0.0493
	Suriname/Guyana/French Guiana	-0.8787	-0.0587
	Trinidad & Tobago	-0.0498	-0.0328
	Uruguay	-0.8240	-0.3858
	Venezuela	-0.0964	-0.0695

Region	Countries	Direct Use	Power Gen
EUROPE	Austria	-0.2209	-0.0987
	Balkans (Slovenia, Croatia, and Bosnia Herzegovina)	-0.1734	-0.0746
	Balkans (Albania, Macedonia, Serbia, Montenegro)	-0.2881	-0.4974
	Belgium	-0.1835	-0.0825
	Bulgaria	-0.3358	-0.2082
	Czech Republic	-0.2427	-0.3458
	Denmark	-0.2881	-0.1044
	Finland	-0.6130	-0.1504
	France	-0.3137	-0.4616
	Germany	-0.2153	-0.1528
	Greece	-0.6979	-0.1301
	Hungary	-0.1310	-0.0871
	Ireland	-0.2807	-0.0465
	Italy	-0.1386	-0.0495
	Luxembourg	-0.2442	-0.0419
	Netherlands	-0.1201	-0.0487
	Norway	-0.1886	-0.3947
	Poland	-0.2415	-0.4678
	Portugal	-0.3785	-0.0675
	Romania	-0.1430	-0.1049
	Slovakia	-0.1375	-0.2216
	Spain	-0.2352	-0.0682
	Sweden	-1.4161	-0.9198
	Switzerland	-0.3711	-0.9357
	United Kingdom	-0.1373	-0.0714
FORMER SOVIET UNION	Armenia	-0.1415	-0.0869
	Azerbaijan	-0.1337	-0.0362
	Belarus	-0.1408	-0.0388
	Estonia	-0.3546	-0.1936
	Latvia	-0.1765	-0.0465
	Lithuania	-0.2329	-0.0943
	Georgia	-0.1455	-0.0597
	Kazakhstan	-0.1431	-0.1458
	Kyrgyzstan	-0.3291	-0.0839
	Moldova	-0.1322	-0.0387
	Russia	-0.1178	-0.0492
	Tajikistan	-0.3059	-0.1023
	Turkmenistan	-0.0820	-0.0352
	Ukraine	-0.1206	-0.1414
	Uzbekistan	-0.0645	-0.0367
MIDDLE EAST	Bahrain	-0.0693	-0.0311
	Iran	-0.0825	-0.0348
	Iraq	-0.3125	-0.1564
	Israel	-0.6918	-0.0691
	Jordan	-0.7776	-0.0319
	Kuwait	-0.1150	-0.0630
	Lebanon	-1.6106	-0.2203
	Oman	-0.0764	-0.0329
	Qatar	-0.0560	-0.0310
	Saudi Arabia	-0.1317	-0.0394
	Syria	-0.2573	-0.0410
	Turkey	-0.2536	-0.0511
	UAE	-0.0783	-0.0313
	Yemen	-3.7623	-3.8558
NORTH AMERICA	Canada	-0.1133	-0.1864
	Mexico	-0.2271	-0.0517
	United States	-0.1475 *Residential*	-0.1186
		-0.1218 *Commercial*	
		-0.2201 *Industrial*	

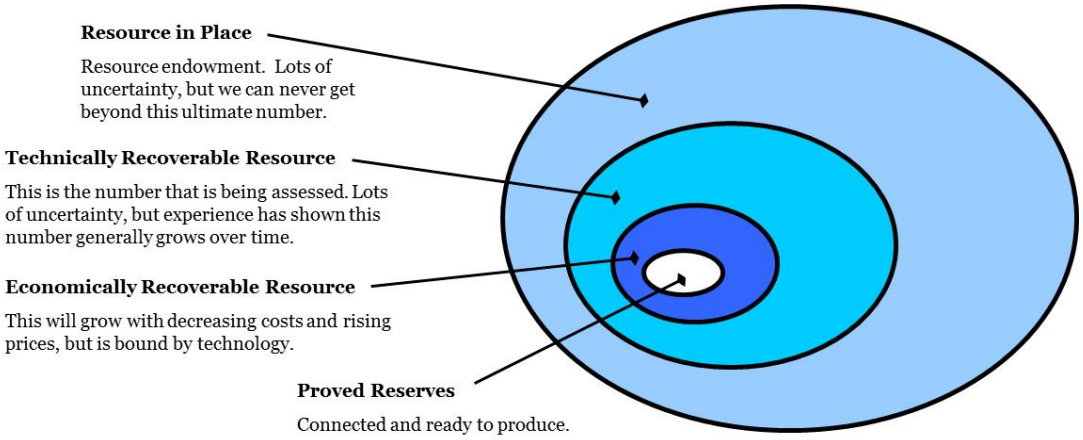
This raises another important point. As a result of the manner in which natural gas demand is estimated as a share of TPER, the price elasticity varies with the share of natural gas in total primary energy. Specifically, as the share of natural gas in total energy approaches zero, the price elasticity rises in absolute value, all else equal. In other words, the natural gas price elasticity of demand is high if a country/region is not currently invested in natural gas-consuming capital. One interpretation of this result from the econometric analysis is that future demand growth in regions where natural gas use is not prevalent would require investment in natural gas-using capital equipment, which would be slow to come if price is high. Moreover, in regions where the natural gas share is already high, natural gas demand has relatively little ability to respond to price because other types of energy-using capital are not prevalent. Table B2 details the short-run price elasticities used in this study. The mid-point elasticities in Table B2 are implied by the estimated equations for the procedure explained above.

Modeling demand in this manner provides flexibility to analyze how different scenarios will impact the demand for natural gas. For example, if the international demand for U.S.-sourced LNG is very high, this acts as an impulse to demand for U.S. natural gas. All else equal, price will be influence upwards, which could crowd out demand from other sectors. However, the extent to which price increases is also a function of the elasticity of domestic supply, which is contingent on domestic resource cost and availability. We now turn our attention to resource quantity and cost assessments in the RWGTM.

B1b. Resources and Production in the RWGTM

Because the RWGTM proves and develops resources, finding and development costs and resource assessments are critical inputs. Both conventional and unconventional resources are characterized across 140 regions into three primary categories: (1) proved reserves, (2) growth in existing fields, and (3) undiscovered resources. Proved reserves and geologic assessments of unproven resources are taken from a number of sources, such as the U.S. Geological Survey (USGS), National Petroleum Council (NPC), Australian Bureau of Agriculture and Resource Economics, and Baker Institute CES research on unconventional resources.

Figure B4. Resources Defined[36]



Production in the RWGTM requires investment in the development of resources, so the finding and development costs of resources are an important input. Even if technically recoverable resources are assessed to be very large, the relevant quantity is the commercially viable subset of what is

[36] Modified from V.E. McKelvey, "Mineral Resource Estimates and Public Policy," *American Scientist* 60, no. 1 (1972): 32–40.

technically recoverable. Technically recoverable resources define the resources that can be recovered with existing technology regardless of cost, whereas economically recoverable resources define what is commercially accessible. Resources that are "proved" are a subset of what is commercially viable, because proved reserves typically refer to resources that can be produced in a relatively short period of time. In sum, large resource in-place estimates do not imply large-scale production will be forthcoming. Productivity improvements, cost reductions, and the price environment all play an important role in defining what is *technically recoverable* and what is *economically recoverable* relative to the *total resource endowment*. Figure B4 illustrates this principle.

North America finding and development (F&D) costs for non-shale resources are based on estimates developed by the NPC in its 2003 report and have been adjusted using data from their 1998–2000 point of reference, using the Bureau of Economic Analysis (BEA) KLEMS database to account for changes in upstream costs, which has varied widely through the years. As explained below, upstream costs are closely correlated to the crude oil and natural gas price environment.

The F&D cost curves are developed by linking data on well development costs to the geologic characteristics of each play in areas where such information is known. The NPC report in 2003 aimed at assessing the future of the North American natural gas market and detailed costs for over 900 plays in North America. That data was utilized to develop an econometric relationship between costs and geology in non-shale resources. Then, the statistically derived information was used to generate costs (via an "out of sample" fit) in regions around the world where geologic characteristics are known, but costs are not. In other words, costs have been econometrically related to play-level geologic

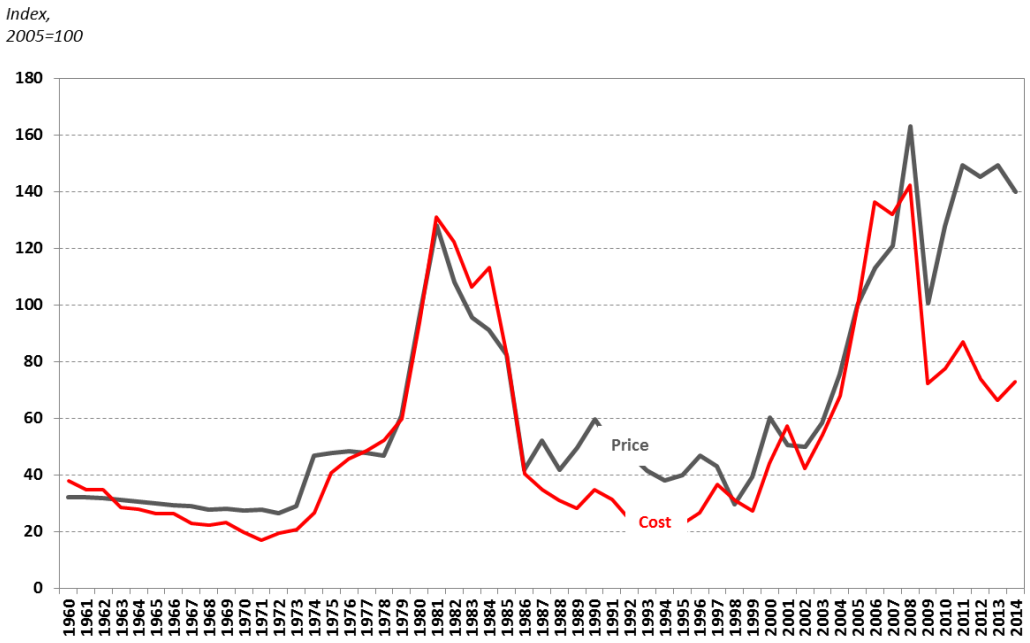
characteristics and applied globally to generate costs for all regions of the world. The methodology employed for non-shale gas resources is outlined in detail in Hartley and Medlock (2006).[37]

A note on the long-run cost environment assumed in the RWGTM is important here. In general, upstream costs rise and fall over time. The RWGTM Reference case assumes the cost environment drifts to a long-run average level. Analyzing data available from the KLEMS database from the BEA on the real cost of oil and gas extraction, we are able to differentiate a long-run average cost from short-term peaks and valleys. Of course, there are uncertainties regarding this approach, and although not explicitly addressed in this study, we have executed scenarios in the RWGTM assuming different long-run cost levels. However, an underlying assumption that costs do not change can cement the myopia that is often present in forecasting.[38]

Figure B5 graphs an index of development costs and the price of oil, each in real 2010 values having been adjusted using the GDP deflator. Notably, the two indices generally move together, but neither is a clear leading indicator of the other. This general pattern supports the notion that in some periods costs rise due to "demand pull" occurring when high energy prices encourage greater upstream investment activity, while in other periods price rises due to "cost push" when scarcity of raw materials and qualified personnel drive up development costs.[39] In either case, the cost environment is germane to market conditions, so what one assumes going forward will be very important for the projected time horizon.

[37] Peter Hartley and Kenneth B. Medlock III, "The Baker Institute World Gas Trade Model" in *Natural Gas and Geopolitics: 1970–2040*, ed. David Victor, Amy Jaffe, and Mark Hayes, Cambridge University Press (2006).
[38] Based on unpublished analysis as part of CES sponsored research, the *QP-Rice International Natural Gas Program*.
[39] Certainly, the latter point has been a concern in the oil and gas industry for the better part of the last two decades. Often referred to as "the great crew change," a graying industry has seen a diminishing availability of qualified individuals to operate technically complex oil and gas mining operations.

Figure B5. Real Development Costs and the Real Price of Oil (1968–2014)



Source: U.S. Bureau of Economic Analysis; U.S. Energy Information Administration

While the average long-run cost is assumed to be the average of the cost levels over the last 25 years, which is generally consistent with a real oil price (in 2010$) of just under $80 per barrel, short-run pressures are allowed to increase costs in any given year above the long-run level. These so-called "short-run adjustment costs" raise F&D costs above their long-run level when development activity rises within a given year. Thus, if a particular scenario in the RWGTM involves, for example, an unexpected demand shock, both short-run cost and price will rise as development activity ramps up to respond.

The RWGTM also contains detailed estimates of resource quantities and development costs for shale resources around the world. The initial assessments of technically recoverable shale resources are taken from the report "Technically Recoverable Shale Oil and Gas Resources: An Assessment of 137

Shale Formations in 41 Countries Outside the United States" by Advanced Resources International for the U.S. Energy Information Administration in June 2013.[40] In developing F&D curves for shale, we also used data from the report "Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays" by INTEK, Inc. for the EIA in July 2011,[41] as well as shale gas well production data across regions in the United States collected from DrillingInfo.com.

Geophysical data and well performance data are used to generate finding and development cost curves for an average shale gas well in every assessed basin. Specifically, the *average* expected ultimate recovery (EUR) for play *i* is found using the following relationship

$$\underbrace{EUR_{i,avg}}_{\frac{X}{YZ}\ bcf/well} = \underbrace{TRR_i}_{X\ bcf} / \underbrace{\left(Area_i \cdot WellSpacing_i\right)}_{Y\ miles^2 \cdot Z\ well/miles^2}$$

where the relevant data are taken from the aforementioned ARI report for international locations. For domestic shales the average EUR, and the distribution of EURs, is taken from the INTEK report. The distribution of EURs is fit to the INTEK data for each shale play by estimating

$$EUR_{i,p} = a\ln\left(p\right) + b$$

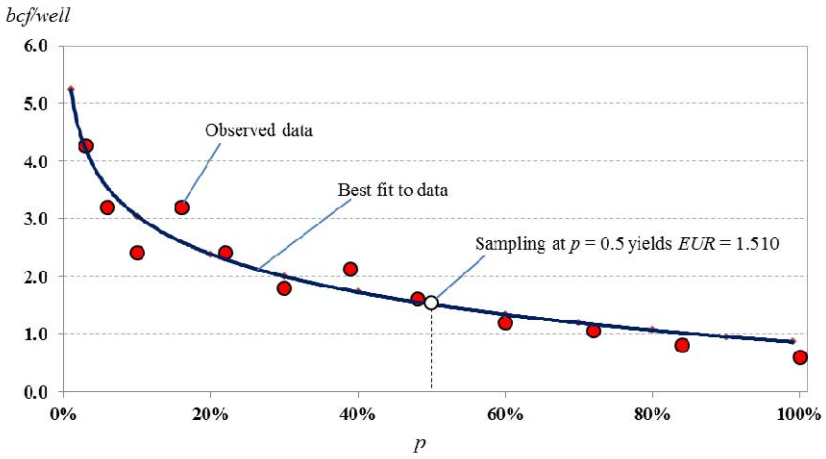
where *p* is the probability of a well's EUR being less than $EUR_{i,p}$. For example, in the Barnett shale we estimate the relationship above to find

$$EUR_{Barnett,p} = -0.9520\ln\left(p\right) + 0.8501$$

[40] Available at http://www.eia.gov/analysis/studies/usshalegas/pdf/usshaleplays.pdf.
[41] Available at http://www.eia.gov/analysis/studies/usshalegas/pdf/usshaleplays.pdf.

with $R^2 = 0.9118$.[42] This equation then allows us to "sample" at any *p* to obtain an EUR. Figure B6 illustrates this procedure.

Figure B6. Estimating EURs for Known Shale Plays



Next, we determine the cost per unit at each EUR as

$$\underbrace{Cost\ per\ unit_{i,p}}_{\frac{X}{Y}\ \$/mcf} = \underbrace{F\ \&\ D_i}_{X\ million\$/well} \Big/ \underbrace{EUR_{i,p}}_{Y\ bcf/well}.$$

Specifically, we determine the average per unit cost for each 20th percentile by: (1) assuming wells can be drilled uniformly in available acreage across the areal extent of the shale, (2) sampling from the EUR distribution and determining the total resource in each percentile of the distribution, then (3) taking a volume weighted average of the per unit costs at each percentile in the distribution. Similar steps were taken for every shale play in the United States. Then, the parameters describing the distribution of shale gas well performance for plays in the United States are used to derive EUR

[42] The regressions for the other shales in the United States also fit the data very well, with R^2 ranging between 0.9101 and 0.9963.

distributions for shales around the world. This allows us to "tier" the resources according to cost for every shale in the world.

Where available, we use published data on full cycle finding and development costs. However, this is not available for every location in the world. As such, we estimate drilling costs ($F\&D_i$) as a function of depth and pressure

$$F\&D_i = \underset{(0.8941)}{0.8616} + \underset{\left(9.0041\times10^{-5}\right)}{3.6605\times10^{-4}}\,TVD_i + \underset{(1.8606)}{3.2192}\,Pressure_i$$

with $R^2 = 0.9016$. Thus, for example, a horizontal well with total vertical depth of 4,000 feet and pressure gradient of 0.5801 psi/ft^2 is estimated to cost $4.19 million. If EUR is 2.5 Bcf/well, then the cost per mcf is estimated to be $1.67/mcf. Of course, a return must be earned on capital, and operating costs must also be covered, which is how we arrive at an estimated breakeven cost for the average well in this example. Of course, the income tax rate, severance tax, royalties, and other relevant parameters also come into the calculation when determining the breakeven price. Using the average set of values for these parameters in the RWGTM for the United States would put the breakeven price for this example at $5.96/mcf. Taking things a step further, this approach allows an evaluation of the relative competitiveness of resources across regions under different tax regimes.

Unless otherwise stated in a specific scenario, we honor "above ground" constraints, such as fracturing moratoria in places like France and the State of New York. Other issues also present impediments to development. For instance, the lack of a well-developed service industry or lack of a competitive upstream sector can raise costs relative to what is seen elsewhere. As a result, costs are

higher in these places, with the inputs benchmarked against publically reported well costs. In addition, in countries such as China, water availability for hydraulic fracturing may raise costs and even severely restrict the shale gas potential to varying extents in different basins. Despite constraints faced in some regions due to water scarcity, it is possible that breakthroughs in the use of brackish water from deep-source aquifers, top-side water recycling capability, and/or the use of super-critical nitrogen or liquefied petroleum gas (LPG) to fracture shale will make much of the resource more viable at some point in the future. In the RWGTM, we do not assume any such technological breakthroughs, unless otherwise stated in a particular scenario, so shale development costs are typically higher in regions affected by water shortages as a result.

Figures B7 and B8 indicate the breakeven curves, inclusive of fiscal terms and return to capital, for shale in North America and around the world. The data are also presented in a table in Annex D. One should not interpret the graphs in Figures B7 and B8 as classical long-run supply curves. Rather, they are only *illustrative* of cost largely because the resources are geographically dispersed. Aggregating them ignores transportation costs to a generally accepted pricing location, and the transportation costs are heterogeneous across resources. A prime example is highlighted in the graph for "EUROPE and FSU" in Figure B8. Here, Russian shale is identified (tiers 1 through 4 of the Bazhenov shale to be specific; tier 5 breakeven exceeds $20 so is not illustrated). In order for this resource to be commercially viable in Western Europe, it would need to be transported a long distance via pipeline. Therefore, to a consumer in Europe, a breakeven of just under $5 per mcf is not very relevant because upon including transport costs, that Russian shale is not competitive with several tier 1 shales in Western Europe.

Figure B7. Shale Breakeven Curves for North America by Country

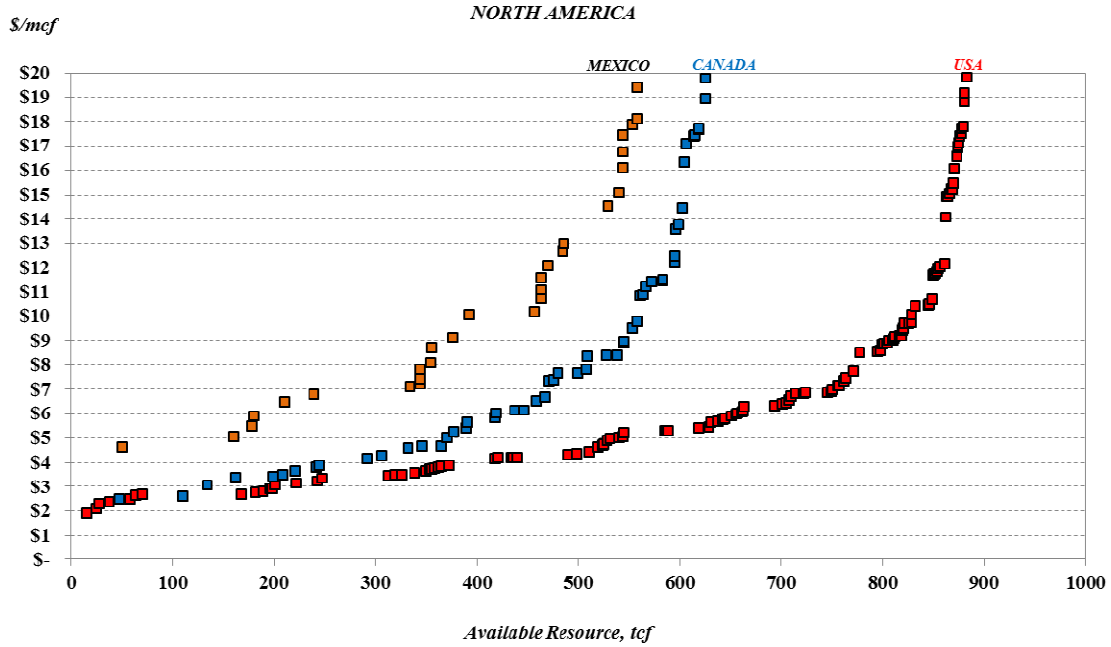
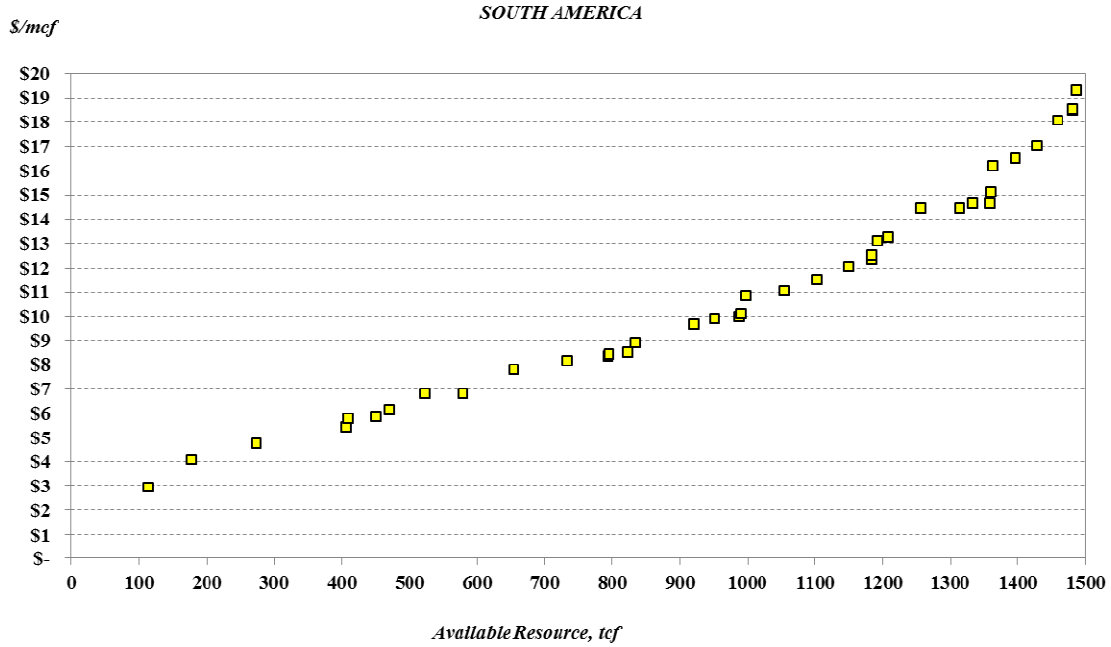
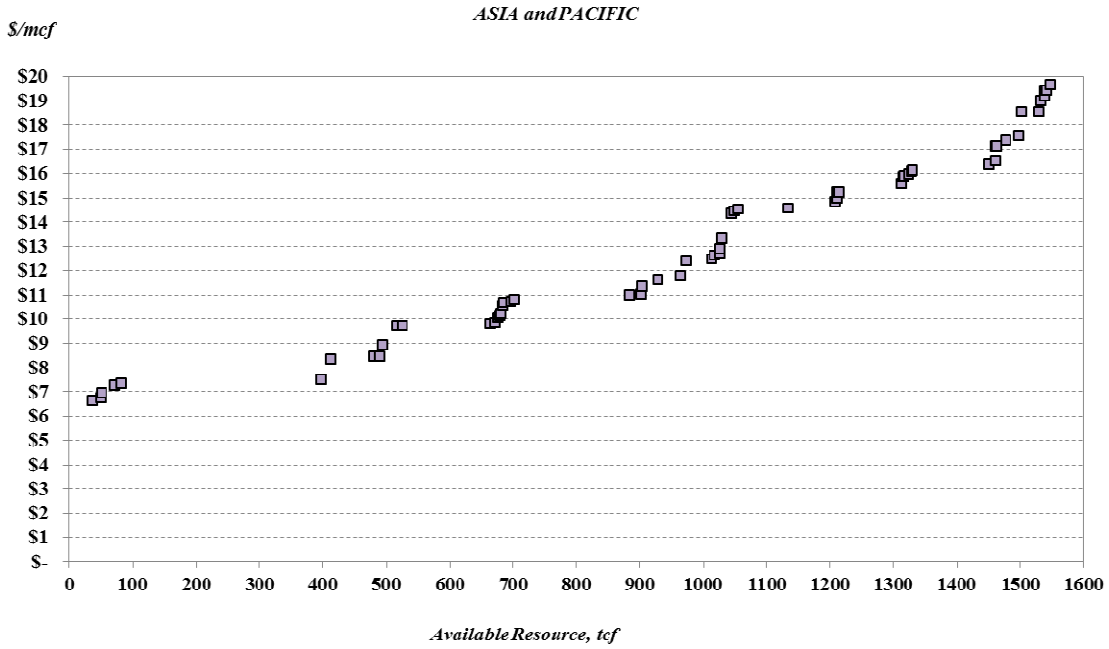
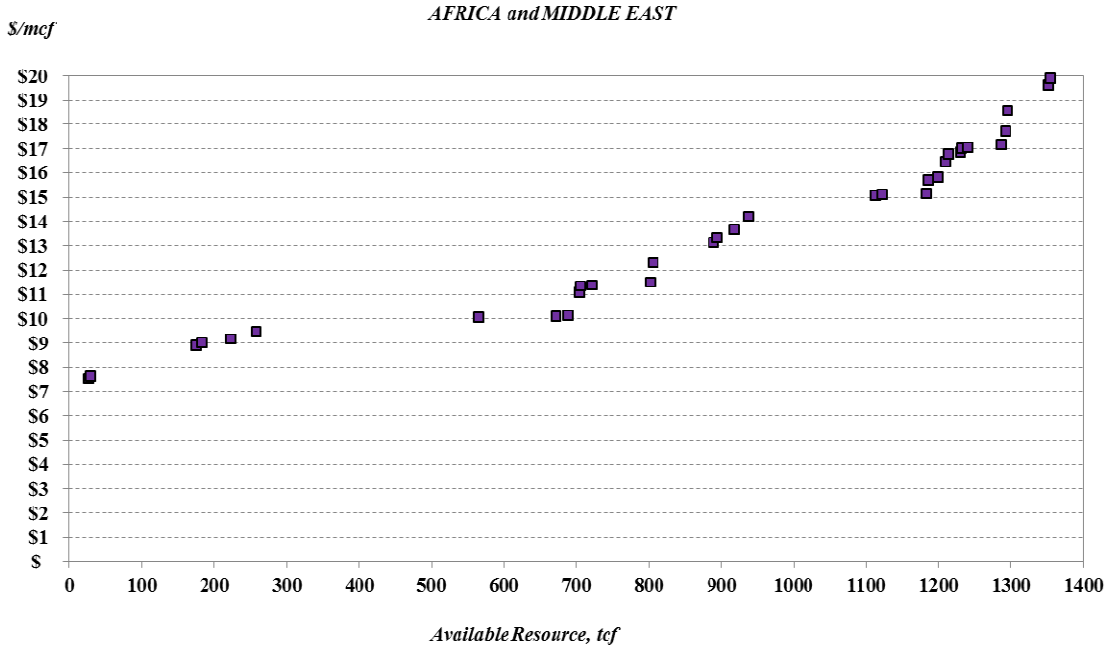
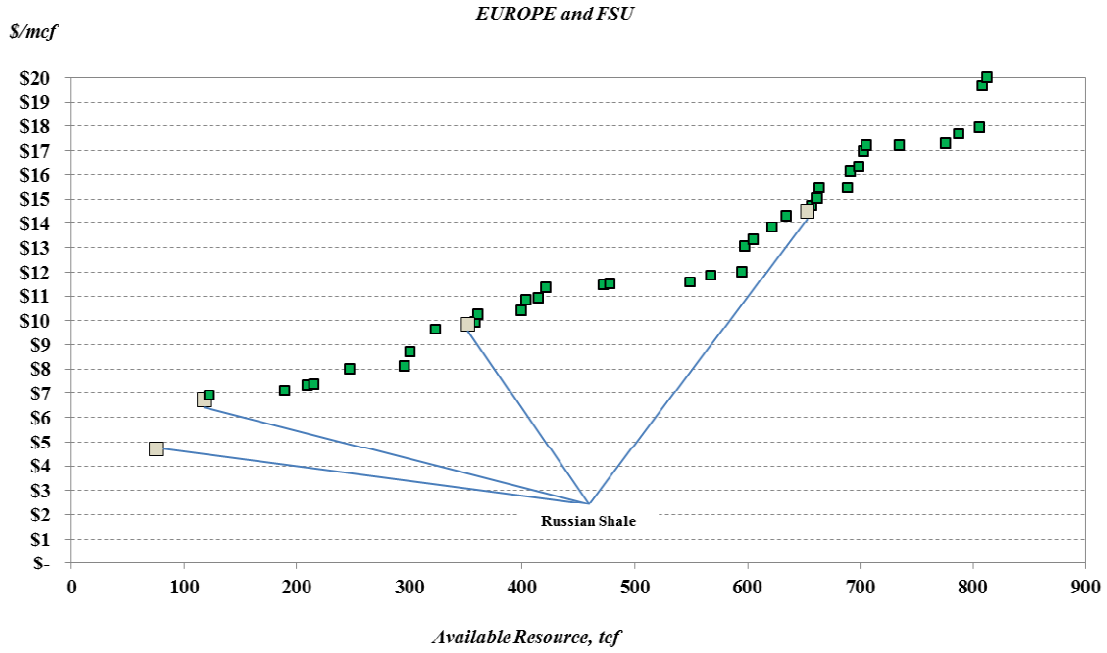


Figure B8. Shale Breakeven Curves for Regions Outside North America




ASIA and PACIFIC
$/mcf
$20
$19
$18
$17
$16
$15
$14
$13
$12
$11
$10
$9
$8
$7
$6
$5
$4
$3
$2
$1
$-
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
Available Resource, tcf


AFRICA and MIDDLE EAST
$/mcf
$20
$19
$18
$17
$16
$15
$14
$13
$12
$11
$10
$9
$8
$7
$6
$5
$4
$3
$2
$1
$
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
Available Resource, tcf



Many factors influence cost and productivity, which leads to tremendous heterogeneity. For example, shale that is clay-rich is generally not prone to high production rates, which in turn tends to reduce its commercial attractiveness even if the technically recoverable resource assessment is large. Other factors—such as total organic carbon, natural fracturation, isopach, permeability, porosity, and other features—are also critical, which makes the degree of complexity involved in developing cost curves for undeveloped shale resources very high thus imbedding a significant degree of uncertainty.

We must also recognize that estimates of shale gas resources will change over time as more is learned about each play. In addition, as new imaging technologies and new extraction processes are developed, assessments for *economically* recoverable shale gas could increase, particularly as technical advances drive improvements in productivity. As such, estimates of productivity improvement can be important and have significant impacts on upstream activity and price. We allow

technical improvements in shale extraction throughout the model time horizon, approaching an overall cost reduction of 10 percent at a rate of 2 percent per year. In the various scenarios considered in this study, we vary shale resource availability to be both higher and lower in the United States and other parts of the world in order to motivate demand for and availability of U.S.-sourced LNG.

As indicated to above, factors other than technical advances can alter development costs. Specifically, various regulatory, policy, and market factors can contribute to heterogeneity in costs. As outlined in Medlock (2014b), geology is a *necessary* condition for successful upstream development, but it is far from *sufficient*, and the recent growth in production in the United States owes to a very unique set of circumstances, including:

- A regulatory and legal apparatus in which upstream firms can negotiate directly with landowners for access to mineral rights on privately owned lands.
- A market where liquid pricing locations, or hubs, are easily accessed due to liberalized transport services that dictate pipeline capacity is unbundled from pipeline ownership.
- A well-developed pipeline network that can facilitate new production volumes as they are brought online.
- A market in which interstate pipeline development is relatively seamless due to a well-established governing body, i.e., the Federal Energy Regulatory Commission (FERC), and a comparatively straightforward regulatory approval process.

- A market in which demand pull is sufficient, and can materialize with minimal regulatory impediment, to provide the opportunity for new supplies to compete against other supplies or energy sources for market share.
- A market where a well-developed service sector already exists that can facilitate fast-paced drilling activity and provide rapid response to demands in the field.
- A service sector that strives to lower costs and advance technologies in order to gain a competitive advantage.
- A rig fleet that is capable of responding to upstream demands without constraint.
- A deep set of upstream actors—independent producers—that behave as "entrepreneurs" in the upstream, thereby facilitating a flow of capital into the field toward smaller-scale, riskier ventures than those typically engaged by vertically integrated majors.

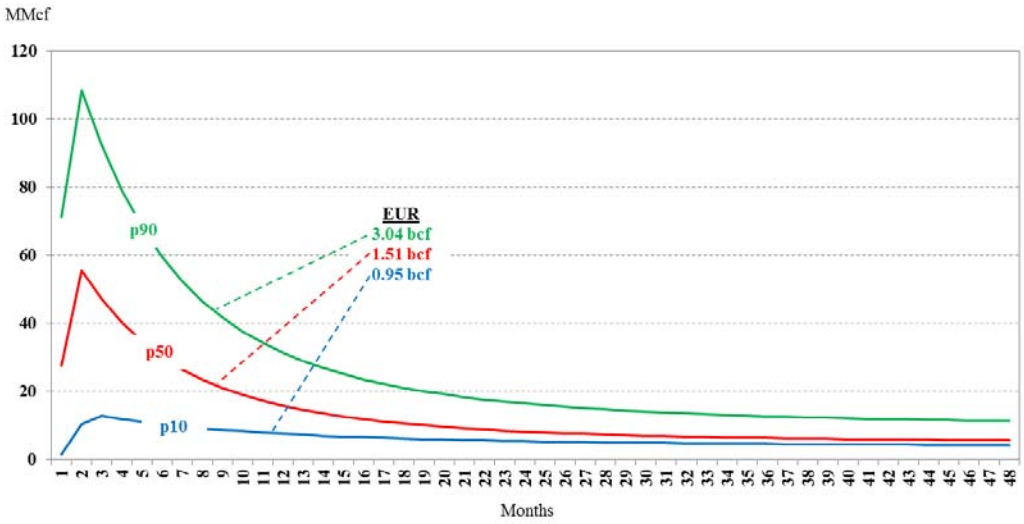
Many of the above factors are unique to the United States, and their absence in other parts of the world can serve to raise the cost of developing shale (and other) resources. For example, in the absence of a robust upstream sector capable of handling the large-scale demands of shale gas development, scarcity constraints (on labor, rigs, and equipment) can become binding. This has been evidenced in places like Poland, for example, where drilling costs are roughly double those seen for shale production targets at similar depths in the United States. This, all else equal, requires those wells to be about twice as productive to stand on the same commercial footing as a similar well in the United States. However, if upstream activity ramps up in these regions, the availability of rigs, personnel, and equipment should increase. This would, with the development of a deeper supply chain bring costs down. We capture this in the RWGTM by allowing current costs around the world to

approach the costs seen in the United States. The transition is parameterized by a learning function that allows costs to fall asymptotically to costs that would be representative of similar activities in the United States.[43] Absent resource development, however, costs remain at their initial higher levels.

Characterizing shale gas decline curves is a very important matter when modeling potential production. The models of physical flow through porous media that are the basis for the classically accepted Arps' equations do not fit observed production data for shale gas wells. Patzek, Male, and Marder (2014) developed an alternative descriptor of decline curves for shale based on the physics of fluid flow in ultralow permeability, ultralow porosity rock media, such as shale. Their analysis resulted in a hypothesis that shale gas wells should decline so that production is inversely proportional to the square root of time. Medlock and Seitlheko (2015) subsequently tested this hypothesis by linearizing their postulated decline curve and econometrically fitting it to a panel of over 16,000 wells in the Barnett shale. They could not reject the hypothesis of Patzek, Male, and Marder at a very high level of significance. This, in turn, allows for the construction of "type" curves, and allows a characterization of the distribution of well performances, which is depicted below in Figure B9 for the Barnett shale.

[43] So, if shale-directed activity in Poland were to increase significantly, the cost to drill a well with vertical depth of 8,500 feet that currently costs just over $16 million would fall over the course of a decade to approach $9 million.

Figure B9. Barnett Shale "Type" Well Decline



Source: Reproduced from Medlock and Seitlheko (2015)

Of particular note in Figure A9 is the fact that the EUR can vary substantially within a play. This, of course, has implications for the economic viability of each well and is a core component in the construction of the productivity tiers discussed above. Importantly, when assessing the long-term potential of a play, individual well economics do not convey the complete story. Virtually every operator has a portfolio of acreage and wells, and the performance of the portfolio is what determines commercial success. As drilling commences, a tremendous amount of information is gathered at the play and the acreage that has the greater proportion of high-performing wells—the so-called "sweet spots"—become better identified. Operators will turn their focus to those regions over time, especially if price is expected to be low. As this occurs, fewer wells are needed to maintain a given play-level production volume because each subsequent well is more productive. This "learning-by-doing" process results in an observed play-level productivity improvement. Importantly,

however, this is distinctly different from technologically-driven productivity improvements, which generally tend to lift productivity of all wells regardless of location.

B1c. Other Model Attributes

In the RWGTM, events in one region of the world—economic, political, or otherwise—influence all other regions because commodity movement via pipelines and/or LNG tankers connects markets and transmits both physical commodity volumes and price signals. The costs of constructing new pipelines and LNG facilities in the RWGTM are estimated using data from previous and potential projects available from the Energy Information Administration, International Energy Agency (IEA), and various industry reports. Within the United States, Federal Energy Regulatory Commission (FERC)-filed tariff rates determine pipeline transportation costs. Transportation costs for regions outside the United States are determined by a rate-of-return calculation on existing infrastructure or are based on information obtained from various industry reports, where such information is available.

The transportation infrastructure is characterized to a fine level of detail, reflecting the geographic detail of supply and demand represented in the model. The infrastructure representation in the RWGTM for the U.S. natural gas market replicates interstate and intrastate pipeline networks with great detail. In fact, as noted above, in the lower 48 states there are over 100 demand regions characterized by industrial, power generation, residential, commercial, and transportation demand, with each of these demands connected to supply sources by a highly detailed representation of the North American pipeline network. More generally, the degree of regional detail around the world varies according to the density of pipeline infrastructure and the size of local demand centers.

The RWGTM balances supply and demand through spatial optimization along a given transportation network within a time period, while using intertemporal dynamic optimization to prove resources and develop infrastructure across time periods. This, as noted earlier, allows the model to eliminate all spatial and intertemporal arbitrage opportunities. In other words, the model solves for the optimal investment pathway—through field level upstream development, pipeline construction and utilization, and LNG value chain development and use—to balance supply and demand in each location. This allows us to construct scenarios that consider the effects of different economic and/or geopolitical assumptions on investment and trade.

B2. The Oxford Global Economic Model

Oxford's Global Economic Model (GEM) is the world's leading globally integrated macro model, used by over 100 clients around the world, including finance ministries, leading banks, and blue-chip companies.

The GEM covers 46 countries, including the United States, Canada, the EU, and major emerging markets including China and India. The model provides a rigorous and consistent structure for analysis and forecasting, and allows the implications of alternative global scenarios and policy developments to be analyzed at both the macro and sector level.

Theoretical motivations

Broadly speaking, there are three types of macroeconomic model designed to help economists in forecasting and analysis of the impacts of alternative economic scenarios and policies. At one extreme, there are the purely statistical models known as vector autoregressions (VARs). Their strengths are short-term forecasting (usually six months to a year or so) and the generation of stylized facts. However, they are much less useful for longer-term forecasting and, because they lack any economic structure, they cannot be used for policy analysis.

At the other extreme are the so-called computable general equilibrium models (CGEMs) such as dynamic-stochastic general equilibrium (DSGE) models. These models' equations are derived by assuming private agents solve dynamic optimization problems, and they typically do not have error terms, or residuals, like econometrically-estimated relationships. They are calibrated so that in

equilibrium they reproduce historical averages of key macro variables. Their strength is their high degree of rigour, but when econometricians perform statistical tests on them, they typically do badly relative to the traditional models.

The Oxford Economics Global Economic Model (GEM) takes a third approach, which draws elements from both VAR and DSGE models. The GEM is a large-scale macroeconometric model: like a VAR model, behavioral equations in the GEM are estimated using statistical regressions on observable data; the choice of which variables to include in the equations, however, are drawn from economic theory. The main advantage of the macroeconometric approach is that it provides both a forecasting tool and a tool for policy analysis.

Model form, parameter estimation and calibration

The GEM is an error correction model, a form of a multiple time series model that estimates the speed at which a dependent variable returns to its equilibrium after a shock to one or more independent variables. This form of model is useful as estimating both the short and long run effects of variables on the given variable in question. The GEM exhibits 'Keynesian' features in the short run. Factor prices are sticky and output is determined by aggregate demand. In the long-run, its properties are Neoclassical, such that prices adjust fully and the equilibrium is determined by supply factors – productivity, labor and capital – and attempts to raise growth by boosting demand only leads to higher prices.

This explicit division into short and long components does not imply that the long-term steady state solution is independent of the short-term drivers. Rather, the error correction format introduces a

feedback loops such that short-run deviations from the equilibrium adjust back to the steady state. In other words, an error correction model combines the long-run equilibrium relationship implied by co-integration with the short run dynamic adjustment mechanism that describes how the variables react when they move out of long-run equilibrium. Intuitively, if forecasts are derived using observed data, then significant and persistent deviations from the historical trend would suggest a change in the underlying drivers of an economic phenomenon.

The GEM is a disaggregated empirical model where behavioral equations are estimated on observable data. Individual country models, and the six regional models which complete the world coverage of the Oxford Global Economic Model, are estimated using the previously described error correction format. Economic theory is used to determine appropriate explanatory variables for behavioral relationships such as prices, exchange rates, productivity, and employment.

Coefficients on behavioral relationships which cannot be estimated using econometric regressions are calibrated using proxy series, established economic theory, or imposed to obtain consistency with an observed empirical relationship. The different approaches for determining coefficients are largely driven by the availability and quality of underlying data. Coefficients on variables in the long-run are imposed using theory, for example the permanent income hypothesis as a driver of long-run consumption.

Overview of country models in the Global Economic Model

The structure of each of the country models is based on the income-expenditure accounting framework. However, the models have a coherent treatment of supply. In the long run, each of the

economies behaves like the classic one sector economy under Cobb-Douglas technology. Countries have a natural growth rate, which is determined by capital stock, labor supply adjusted for human capital, and total factor productivity. Output cycles around a deterministic trend, so the level of potential output at any point in time can be defined, along with a corresponding natural rate of unemployment.

Firms are assumed to set prices given output and the capital stock, but the labor market is characterized by imperfect competition. Firms bargain with workers over wages but choose the optimal level of employment. Under this construct, countries with higher real wages demonstrate higher long-run unemployment, while countries with more rigid real wages demonstrate higher unemployment relative to the natural rate.

Inflation is a monetary phenomenon in the long run. All of the models assume a vertical Phillips curve, so expansionary demand policies place upward pressure on inflation. Unchecked, these pressures cause an unbounded acceleration of the price level. Given the negative economic consequences of this (as seen in the 1970s in developed economies and more recently in some emerging markets), most countries have adopted a monetary policy framework which keeps inflation in check. The model mirrors this, by incorporating endogenous monetary policy. For the main advanced economies, monetary policy is underpinned by the Taylor rule, captured using an inflation target, such that interest rates are assumed to rise when inflation is above the target rate, and/or output is above potential. The coefficients in the interest rate reaction function, as well as the inflation target itself, reflect assumptions about how hawkish different countries are about inflation. A by-product of this system is that scenarios under fixed interest rates only make sense in the short-run. A scenario which

imposes a fixed interest rate, and therefore assumes a lack of monetary policy, in conjunction with a vertical Phillips curve, would result in accelerating (or decelerating) inflation after several years.

Demand is modeled as a function of real incomes, real financial wealth, real interest rates and inflation. Investment equations are underpinned by the Tobin's Q Ratio, such that the investment rate is determined by the return relative to the opportunity cost, adjusted for taxes and allowances. Countries are assumed to be "infinitely small", in the sense that exports are determined by aggregate demand and a country cannot ultimately determine its own terms of trade. Consequently, exports are a function of world demand and the real exchange rate, and the world trade matrix ensures adding-up consistency across countries. Imports are determined by real domestic demand and competitiveness.

Finally, the model assumes adaptive rather than forward looking expectations because we believe that introducing expectations on the basis of economic theory is more advantageous than using the forward looking assumption ubiquitously. There is disagreement among economists about whether forward looking expectations are consistent with observed data, which become even more acute in light of the difficulties with obtaining accurate data on expectations for model-building purposes. Instead, we adopt adaptive expectations, which are introduced using a framework in which expectations are formed using the actual predicted values from the model. Exogenous variables are assumed to be known a priori. Where appropriate, the model does introduce expectations implicitly and explicitly, therefore accounting for how and extent to which agents respond to information about changes in fundamentals. An example of this includes our derivation of exchange rate forecasts which implicitly capture expectations: in the short-run, the exchange rate is driven by movements in

domestic interest rates relative to the United States, therefore accounting for uncovered interest rate parity. Another example is our use of a variable for forward guidance to capture expected movements in interest rates.

Linkages between economies

Individual country models within the GEM are linked in a number of ways:

- Trade (Exports driven by weighted matrix of trading partners' import demand)
- Competitiveness (IMF relative unit labor costs where available, relative prices elsewhere)
- Interest Rates and Exchange Rates
- Commodity Prices (e.g. oil, gas and coal prices depend on supply/demand balance; metal
- prices depend on growth in industry output)
- World Price of Manufactured Goods

Link to sector/industry output

In addition, the Global Economic Model links to the Global Industry Model to break-down of value added and employment by sector. Consistency between the income-expenditure and value-added approaches to output is ensured by scaling value added in each sector up or down to obtain expenditure-based value added as the sum of value added in the sectors.

The sector breakdown reflects the input-output structure of each economy. For each sector we calculate the total demand for that sector as a weighted average of value added in other sectors and final expenditure, with the weights taken from input-output tables. We then use total demand to estimate the value added for that respective sector since in the long run (everything else equal) value

added and demand must grow in line with each other. Value added is also affected by competitiveness (measured by relative unit labour costs) to a degree that reflects the international openness of each sector. Employment by sector is derived from value added in that sector and sector-specific productivity trends. As in the case of value added, consistency between the total employment forecast and employment in all sectors is achieved by scaling the sector employment variables up or down.

At the country level, the model's structure is Keynesian in the short run, with output driven by shifts in demand, but in the long run the model is neoclassical, and GDP is determined by the economy's supply-side potential (i.e., the level of output is determined by an economy's labor supply, capital stock, and productive potential). For example, increased demand will lead to higher output and employment initially, but eventually that feeds through into higher wages and prices. Given an inflation target, interest rates have to rise, reducing demand again ("crowding out"). As a result, output returns to its potential level over the long run.

Overview of the Global Economic Model
Consumption—function of real income, wealth, and interest rates
Investment—"q" formulation with accelerator terms
Exports—depend on world demand and relative unit labor costs
Imports—depend on total final expenditure and competitiveness
Real wages depend on productivity and unemployment relative to NAIRU
Prices are a markup on unit costs, with profits margins a function of the output gap
Monetary policy endogenized; options include Taylor rule, fixed money and exchange rate targeting
Exchange rate determined by UIP
Expectations adaptive

At the global level, countries are linked through trade, financial variables, and commodity prices. As a result, the model is able to capture both the direct and indirect impacts of changes in the global

natural gas market. The output of the GEM is then the dynamic impact on GDP, interest rates, employment, inflation, and other macro variables.

B3. The Oxford Economics Global Industry Model

Linked to the Global Economic Model is the Oxford Economics Global Industry Model. This model, based upon standard industrial classifications and updated quarterly, has a detailed breakdown of output by sector across 100 sectors and 67 countries. The model includes a particularly detailed breakdown in the manufacturing sector, covering eight key sectors: metals, chemicals, motor vehicles, engineering and metal goods, electronics and computers, textiles and clothing, aerospace, and other intermediate goods. The GIM generates forecasts for both gross output and gross value added (output excluding intermediate consumption).

Forecasts for individual industries are driven by the macroeconomic forecast from the GEM combined with our detailed model of industry interactions. Demand from households, firms, and government is allocated to individual industries using weights based upon national input-output tables. These tables show the percentage of each industry's output that is driven by consumption, investment, exports, and intermediate demand. So, for example, a forecast of economic growth led by strong investment will lead to rapid growth in capital goods sectors. Furthermore, sectors that supply those industries will also benefit through supply-chain linkages (i.e., intermediate levels of demand) also captured in the model. Finally, the industry model takes into account the impacts of changes in competitiveness of a sector's market share both domestically and overseas.

Annex C Scenario Results Tables

Table C1. Impact of Increasing LNG Exports, Annual Avg. Change from 12 Bcf/d, 2015–2040*

	12 Bcf/d to 20 Bcf/d LNG Exports		12 Bcf/d to Market-Determined (endogenous) LNG Export Level			
	Reference	High Resource Recovery	Reference	High Resource Recovery	Low Resource Recovery	High Natural Gas Demand
U.S. Natural Gas Market (Bcf/d)						
NG Production	3.5	4.9	4.6	8.1	2.3	3.8
	2.3%	*3.0%*	*2.9%*	*4.9%*	*1.6%*	*2.3%*
NG Consumption	0.1	0.2	0.0	0.4	-0.1	0.0
	0.0%	*0.2%*	*0.0%*	*0.3%*	*0.0%*	*0.0%*
NG Exports	4.2	5.1	5.3	8.5	2.6	4.2
	16%	*18%*	*20%*	*30%*	*11%*	*16%*
NG Imports	0.8	0.4	0.8	0.8	0.2	0.5
	3.0%	*1.9%*	*3.1%*	*3.5%*	*0.9%*	*1.9%*
Prices (2010$)						
Henry Hub Price	$0.17	$0.15	$0.20	$0.25	$0.12	$0.18
	3.3%	*3.4%*	*4.0%*	*5.6%*	*2.0%*	*3.4%*
NBP (UK)	$0.00	-$0.01	$0.01	-$0.03	-$0.01	-$0.01
	0.0%	*-0.1%*	*0.1%*	*-0.3%*	*-0.1%*	*-0.1%*
German Border (NW Europe)	$0.00	$0.00	$0.01	-$0.01	-$0.01	$0.00
	0.0%	*0.0%*	*0.1%*	*-0.1%*	*-0.1%*	*0.0%*
JKM (Asia-Pacific)	-$0.73	-$0.89	-$0.89	-$1.31	-$0.50	-$0.71
	-4.9%	*-6.0%*	*-6.0%*	*-8.8%*	*-3.3%*	*-4.8%*
Macroeconomic Impacts						
GDP (annual avg., 2014$B)	$3.8	$4.1	$8.5	$11.1	$6.7	$7.4
	0.02%	*0.02%*	*0.03%*	*0.04%*	*0.03%*	*0.03%*
Employment (000s)	3.0	5.6	10.6	17.2	8.6	7.8
	0.00%	*0.00%*	*0.01%*	*0.01%*	*0.01%*	*0.00%*
CPI (level)	0.16%	0.20%	0.19%	0.30%	0.08%	0.16%
Current Account (% of GDP)	0.02	0.03	0.03	0.05	0.02	0.03
Sector Value-Added:						
Manufacturing	0.01%	0.01%	0.03%	0.04%	0.02%	0.02%
EIS	0.00%	0.01%	0.01%	0.02%	0.01%	0.01%
Non-EIS	0.01%	0.01%	0.03%	0.04%	0.03%	0.03%
Agriculture	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%
Extraction	1.00%	1.36%	1.30%	2.23%	0.67%	1.03%
Construction	0.09%	0.09%	0.15%	0.19%	0.10%	0.13%
Services	-0.01%	-0.01%	-0.01%	-0.01%	0.00%	0.00%

***The % rows in this table represent the annual average % difference for the specified time period, between the scenario in question and the 12Bcf/d equivalent – so the % show the percentage equivalent of the change in Bcf/d, US$, '000s, etc.**

Table C2. Impact of Increasing LNG Exports, Annual Avg. Change from 12 Bcf/d, 2015–2025*

	12 Bcf/d to 20 Bcf/d LNG Exports		12 Bcf/d to Market-Determined (endogenous) LNG Export Level			
	Reference	High Resource Recovery	Reference	High Resource Recovery	Low Resource Recovery	High Natural Gas Demand
U.S. Natural Gas Market (Bcf/d)						
NG Production	-0.2	-0.1	-0.2	-0.3	-0.1	-0.3
	-0.3%	*-0.2%*	*-0.4%*	*-0.4%*	*-0.2%*	*-0.4%*
NG Consumption	-0.1	0.0	-0.1	-0.1	-0.1	-0.2
	-0.1%	*0.0%*	*-0.1%*	*-0.1%*	*-0.1%*	*-0.2%*
NG Exports	-0.1	0.0	-0.1	0.0	0.0	-0.1
	-1%	*0%*	*-1%*	*0%*	*-1%*	*-1%*
NG Imports	0.1	0.1	0.1	0.1	0.0	0.1
	0.9%	*1.0%*	*0.9%*	*1.4%*	*0.4%*	*0.6%*
Prices (2010$)						
Henry Hub Price	$0.17	$0.15	$0.20	$0.25	$0.12	$0.18
	0.6%	*0.4%*	*0.9%*	*0.8%*	*0.4%*	*0.8%*
NBP (UK)	$0.00	-$0.01	$0.01	-$0.03	-$0.01	-$0.01
	0.0%	*-0.1%*	*0.1%*	*-0.3%*	*-0.1%*	*-0.1%*
German Border (NW Europe)	$0.00	$0.00	$0.01	-$0.01	-$0.01	$0.00
	0.0%	*0.0%*	*0.1%*	*-0.1%*	*-0.1%*	*0.0%*
JKM (Asia-Pacific)	-$0.73	-$0.89	-$0.89	-$1.31	-$0.50	-$0.71
	-4.9%	*-6.0%*	*-6.0%*	*-8.8%*	*-3.3%*	*-4.8%*
Macroeconomic Impacts						
GDP (annual avg., 2014$B)	-$1.6	-$0.3	-$2.6	-$1.7	-$1.4	-$2.2
	-0.01%	*0.00%*	*-0.01%*	*-0.01%*	*-0.01%*	*-0.01%*
Employment (000s)	2.9	5.4	10.2	16.5	8.3	7.5
	0.00%	*0.00%*	*0.01%*	*0.01%*	*0.01%*	*0.00%*
CPI (level)	0.01%	0.01%	0.02%	0.02%	0.01%	0.02%
Current Account (% of GDP)	0.02	0.03	0.03	0.05	0.02	0.03
Sector Value-Added:						
Manufacturing	-0.01%	0.00%	-0.01%	0.00%	-0.01%	-0.01%
EIS	-0.01%	0.00%	-0.01%	-0.01%	-0.01%	-0.01%
Non-EIS	0.00%	0.00%	-0.01%	0.00%	-0.01%	-0.01%
Agriculture	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Extraction	-0.13%	-0.08%	-0.15%	-0.17%	-0.10%	-0.18%
Construction	-0.01%	0.00%	-0.02%	0.00%	-0.01%	-0.01%
Services	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%

***The % rows in this table represent the annual average % difference for the specified time period, between the scenario in question and the 12Bcf/d equivalent – so the % show the percentage equivalent of the change in Bcf/d, US$, '000s, etc.**

Annex D RWGTM Results (Price, Demand, Supply, and LNG Trade)[44]

D1. Natural Gas Prices (2010$/mmBtu)[45]

		2005	2010	2015	2020	2025	2030	2035	2040
Henry Hub	Ref_Ref	$ 8.79	$ 4.39	$ 3.28	$ 4.62	$ 5.30	$ 5.79	$ 6.66	$ 7.42
	Ref_HRR	$ 8.79	$ 4.39	$ 3.19	$ 4.23	$ 4.93	$ 5.07	$ 5.62	$ 6.15
	Ref_LRR	$ 8.79	$ 4.39	$ 3.46	$ 4.92	$ 5.66	$ 6.46	$ 7.50	$ 8.57
	Ref_Hi-D	$ 8.79	$ 4.39	$ 3.33	$ 4.69	$ 5.43	$ 6.10	$ 6.97	$ 7.81
	LNG12_Ref	$ 8.79	$ 4.39	$ 3.31	$ 4.63	$ 5.35	$ 5.90	$ 6.94	$ 7.63
	LNG12_HRR	$ 8.79	$ 4.39	$ 3.19	$ 4.34	$ 4.83	$ 5.31	$ 6.06	$ 6.77
	LNG12_LRR	$ 8.79	$ 4.39	$ 3.45	$ 4.89	$ 5.74	$ 6.51	$ 7.54	$ 8.55
	LNG12_Hi-D	$ 8.79	$ 4.39	$ 3.33	$ 4.72	$ 5.45	$ 6.18	$ 7.11	$ 7.93
	LNG20_Ref	$ 8.79	$ 4.39	$ 3.32	$ 4.79	$ 5.44	$ 6.24	$ 7.41	$ 8.29
	LNG20_HRR	$ 8.79	$ 4.39	$ 3.22	$ 4.36	$ 4.95	$ 5.56	$ 6.47	$ 7.21
	LNG20_LRR	$ 8.79	$ 4.39	$ 3.47	$ 4.99	$ 5.81	$ 6.93	$ 8.30	$ 9.61
	LNG20_Hi-D	$ 8.79	$ 4.39	$ 3.35	$ 4.86	$ 5.53	$ 6.48	$ 7.69	$ 8.72
	LNG20_Ref12	$ 8.79	$ 4.39	$ 3.31	$ 4.75	$ 5.34	$ 6.13	$ 6.93	$ 7.69
	LNG20_HRR12	$ 8.79	$ 4.39	$ 3.20	$ 4.33	$ 4.91	$ 5.37	$ 5.86	$ 6.46
	LNG20_LRR12	$ 8.79	$ 4.39	$ 3.46	$ 4.98	$ 5.75	$ 6.89	$ 7.98	$ 9.27
	LNG20_Hi-D12	$ 8.79	$ 4.39	$ 3.34	$ 4.81	$ 5.48	$ 6.40	$ 7.31	$ 8.21
	LNG20_Ref20	$ 8.79	$ 4.39	$ 3.32	$ 4.76	$ 5.38	$ 6.23	$ 7.38	$ 8.18
	LNG20_HRR20	$ 8.79	$ 4.39	$ 3.22	$ 4.34	$ 4.92	$ 5.57	$ 6.23	$ 6.96
NBP	Ref_Ref	$ 7.38	$ 6.56	$ 7.43	$ 7.46	$ 8.36	$ 9.34	$ 10.18	$ 11.46
	Ref_HRR	$ 7.38	$ 6.56	$ 7.43	$ 7.45	$ 8.25	$ 9.43	$ 10.20	$ 11.54
	Ref_LRR	$ 7.38	$ 6.56	$ 7.43	$ 7.46	$ 8.34	$ 9.47	$ 10.28	$ 11.47
	Ref_Hi-D	$ 7.38	$ 6.56	$ 7.43	$ 7.48	$ 8.37	$ 9.42	$ 10.21	$ 11.55
	LNG12_Ref	$ 7.38	$ 6.56	$ 7.49	$ 7.70	$ 8.95	$ 10.80	$ 12.47	$ 14.27
	LNG12_HRR	$ 7.38	$ 6.56	$ 7.49	$ 7.73	$ 8.94	$ 10.80	$ 12.37	$ 14.17
	LNG12_LRR	$ 7.38	$ 6.56	$ 7.49	$ 7.73	$ 8.95	$ 10.76	$ 12.31	$ 13.95
	LNG12_Hi-D	$ 7.38	$ 6.56	$ 7.49	$ 7.73	$ 8.95	$ 10.79	$ 12.28	$ 14.02
	LNG20_Ref	$ 7.38	$ 6.56	$ 7.48	$ 7.75	$ 9.04	$ 10.84	$ 12.30	$ 14.32
	LNG20_HRR	$ 7.38	$ 6.56	$ 7.49	$ 7.75	$ 9.04	$ 10.81	$ 12.31	$ 14.13
	LNG20_LRR	$ 7.38	$ 6.56	$ 7.48	$ 7.77	$ 9.04	$ 10.88	$ 12.20	$ 14.35
	LNG20_Hi-D	$ 7.38	$ 6.56	$ 7.48	$ 7.74	$ 8.98	$ 10.80	$ 12.23	$ 14.14
	LNG20_Ref12	$ 7.38	$ 6.56	$ 7.49	$ 7.76	$ 8.96	$ 10.76	$ 12.23	$ 14.24
	LNG20_HRR12	$ 7.38	$ 6.56	$ 7.49	$ 7.76	$ 9.01	$ 10.84	$ 12.29	$ 14.21
	LNG20_LRR12	$ 7.38	$ 6.56	$ 7.48	$ 7.78	$ 8.99	$ 10.86	$ 12.19	$ 14.35
	LNG20_Hi-D12	$ 7.38	$ 6.56	$ 7.48	$ 7.74	$ 9.03	$ 10.86	$ 12.26	$ 14.27
	LNG20_Ref20	$ 7.38	$ 6.56	$ 7.48	$ 7.74	$ 9.01	$ 10.79	$ 12.28	$ 14.09
	LNG20_HRR20	$ 7.38	$ 6.56	$ 7.48	$ 7.76	$ 8.96	$ 10.86	$ 12.23	$ 14.26
JKM	Ref_Ref	$ 6.05	$ 10.91	$ 9.31	$ 8.95	$ 10.32	$ 11.12	$ 12.57	$ 13.58
	Ref_HRR	$ 6.05	$ 10.91	$ 9.50	$ 8.95	$ 10.15	$ 11.23	$ 12.68	$ 13.65
	Ref_LRR	$ 6.05	$ 10.91	$ 9.46	$ 8.98	$ 10.37	$ 11.38	$ 12.69	$ 13.63
	Ref_Hi-D	$ 6.05	$ 10.91	$ 9.47	$ 8.96	$ 10.37	$ 11.22	$ 12.71	$ 13.66
	LNG12_Ref	$ 6.05	$ 10.91	$ 9.51	$ 9.27	$ 11.62	$ 14.66	$ 16.04	$ 16.69
	LNG12_HRR	$ 6.05	$ 10.91	$ 9.54	$ 9.11	$ 11.59	$ 14.34	$ 15.55	$ 16.23
	LNG12_LRR	$ 6.05	$ 10.91	$ 9.50	$ 9.38	$ 11.66	$ 14.88	$ 16.74	$ 17.21
	LNG12_Hi-D	$ 6.05	$ 10.91	$ 9.62	$ 9.30	$ 11.66	$ 14.75	$ 16.41	$ 17.01
	LNG20_Ref	$ 6.05	$ 10.91	$ 9.55	$ 9.66	$ 13.64	$ 15.70	$ 17.29	$ 19.01
	LNG20_HRR	$ 6.05	$ 10.91	$ 9.67	$ 9.71	$ 13.49	$ 15.30	$ 16.51	$ 17.43
	LNG20_LRR	$ 6.05	$ 10.91	$ 9.66	$ 9.78	$ 13.74	$ 16.18	$ 18.18	$ 20.30
	LNG20_Hi-D	$ 6.05	$ 10.91	$ 9.65	$ 9.70	$ 13.68	$ 15.87	$ 17.54	$ 19.63
	LNG20_Ref12	$ 6.05	$ 10.91	$ 9.60	$ 9.72	$ 13.75	$ 16.03	$ 19.10	$ 22.80
	LNG20_HRR12	$ 6.05	$ 10.91	$ 9.64	$ 9.74	$ 13.61	$ 16.03	$ 19.13	$ 22.83
	LNG20_LRR12	$ 6.05	$ 10.91	$ 9.46	$ 9.84	$ 13.84	$ 16.34	$ 19.05	$ 22.76
	LNG20_Hi-D12	$ 6.05	$ 10.91	$ 9.53	$ 9.70	$ 13.78	$ 16.16	$ 19.06	$ 22.76
	LNG20_Ref20	$ 6.05	$ 10.91	$ 9.59	$ 9.68	$ 13.64	$ 15.78	$ 17.44	$ 20.01
	LNG20_HRR20	$ 6.05	$ 10.91	$ 9.70	$ 9.71	$ 13.48	$ 15.41	$ 17.23	$ 19.81

[44] RWGTM outputs are annual and more detailed than indicated. The tables simply reveal trends across scenarios.
[45] Only international benchmark prices are presented here to highlight general scenario outcomes.

D2. Demand (tcf)[46]

Ref_Ref Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.750**	**34.643**	**36.561**	**37.177**	**37.924**	**38.871**	**2.02%**	**1.11%**	**0.41%**
Canada	3.144	2.815	3.134	3.372	3.504	3.569	3.632	3.712	-0.03%	1.12%	0.38%
Mexico	1.656	2.286	2.486	2.646	2.854	3.078	3.295	3.489	4.14%	1.39%	1.35%
United States	22.014	24.087	27.130	28.624	30.204	30.530	30.997	31.670	2.11%	1.08%	0.32%
Central & South America	**4.208**	**4.897**	**5.729**	**6.175**	**6.881**	**7.457**	**7.902**	**8.256**	**3.13%**	**1.85%**	**1.22%**
Argentina	1.428	1.529	1.612	1.864	2.036	2.174	2.288	2.386	1.22%	2.37%	1.06%
Brazil	0.657	0.890	1.157	1.350	1.557	1.744	1.888	2.000	5.82%	3.02%	1.68%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.402	0.426	-2.40%	3.72%	1.65%
Colombia	0.236	0.321	0.393	0.402	0.446	0.491	0.524	0.562	5.25%	1.27%	1.56%
Peru	0.056	0.194	0.220	0.234	0.265	0.290	0.314	0.328	14.69%	1.91%	1.43%
Trinidad and Tobago	0.575	0.824	0.752	0.760	0.770	0.757	0.742	0.716	2.73%	0.24%	-0.48%
Venezuela	0.828	0.748	1.102	0.980	1.131	1.237	1.301	1.340	2.90%	0.27%	1.13%
Other Central & South America	0.135	0.205	0.264	0.294	0.343	0.394	0.443	0.498	6.96%	2.66%	2.53%
Europe	**20.095**	**20.525**	**17.991**	**18.715**	**19.325**	**19.582**	**19.658**	**19.524**	**-1.10%**	**0.72%**	**0.07%**
Austria	0.354	0.353	0.286	0.295	0.307	0.314	0.318	0.318	-2.10%	0.71%	0.24%
Belgium	0.601	0.700	0.613	0.655	0.696	0.729	0.742	0.746	0.19%	1.29%	0.46%
France	1.740	1.695	1.425	1.440	1.438	1.391	1.349	1.297	-1.98%	0.09%	-0.69%
Germany	3.203	3.329	3.061	3.116	3.176	3.191	3.137	3.048	-0.45%	0.37%	-0.27%
Italy	3.046	2.935	2.324	2.343	2.358	2.359	2.352	2.329	-2.67%	0.15%	-0.08%
Netherlands	1.741	1.937	1.720	1.755	1.759	1.726	1.681	1.616	-0.12%	0.23%	-0.56%
Norway	0.187	0.194	0.223	0.239	0.257	0.238	0.204	0.195	1.77%	1.41%	-1.81%
Poland	0.573	0.606	0.617	0.689	0.759	0.823	0.866	0.900	0.75%	2.09%	1.14%
Portugal	0.152	0.182	0.146	0.153	0.160	0.165	0.169	0.168	-0.43%	0.95%	0.34%
Romania	0.643	0.455	0.454	0.493	0.521	0.529	0.533	0.523	-3.42%	1.39%	0.03%
Spain	1.188	1.265	1.052	1.100	1.144	1.177	1.193	1.206	-1.21%	0.84%	0.36%
Turkey	0.967	1.346	1.533	1.684	1.801	1.879	1.970	2.057	4.72%	1.62%	0.89%
United Kingdom	3.376	3.337	2.648	2.727	2.802	2.847	2.913	2.904	-2.40%	0.57%	0.24%
Other Europe	2.324	2.192	1.890	2.027	2.148	2.213	2.231	2.216	-2.04%	1.29%	0.21%
Eurasia	**21.786**	**21.616**	**21.674**	**22.964**	**24.213**	**24.911**	**25.213**	**25.528**	**-0.05%**	**1.11%**	**0.35%**
Kazakhstan	0.477	0.303	0.474	0.557	0.636	0.692	0.728	0.764	-0.05%	2.97%	1.23%
Russia	14.330	15.471	15.274	15.707	16.173	16.293	16.207	16.095	0.64%	0.57%	-0.03%
Turkmenistan	0.629	0.720	0.765	0.928	1.088	1.217	1.336	1.439	1.98%	3.59%	1.88%
Ukraine	3.079	1.969	1.678	1.771	1.845	1.886	1.895	1.878	-5.89%	0.95%	0.12%
Uzbekistan	1.702	1.614	1.890	2.278	2.621	2.893	3.098	3.404	1.05%	3.33%	1.76%
Other Eurasia	1.569	1.538	1.593	1.723	1.850	1.929	1.948	1.950	0.15%	1.51%	0.35%
Middle East	**9.825**	**13.379**	**14.479**	**15.521**	**17.077**	**18.325**	**19.508**	**20.584**	**3.95%**	**1.66%**	**1.25%**
Iran	3.707	5.106	5.243	5.488	5.929	6.295	6.612	6.936	3.53%	1.24%	1.05%
Qatar	0.660	0.796	1.103	1.142	1.219	1.277	1.313	1.332	5.26%	1.01%	0.59%
Oman	0.324	0.620	0.710	0.780	0.859	0.908	0.939	0.978	8.17%	1.92%	0.87%
Saudi Arabia	2.516	3.096	3.511	3.893	4.422	4.842	5.193	5.471	3.39%	2.33%	1.43%
United Arab Emirates	1.457	2.147	2.202	2.295	2.463	2.547	2.707	2.836	4.22%	1.13%	0.94%
Other Middle East	1.160	1.614	1.711	1.922	2.185	2.456	2.744	3.032	3.96%	2.48%	2.21%
Africa	**2.979**	**3.535**	**3.893**	**4.597**	**5.542**	**6.591**	**7.721**	**8.867**	**2.71%**	**3.59%**	**3.18%**
Algeria	0.846	1.024	1.086	1.225	1.419	1.591	1.709	1.792	2.53%	2.71%	1.57%
Egypt	1.208	1.630	1.795	2.035	2.360	2.745	3.285	3.859	4.04%	2.77%	3.33%
Nigeria	0.366	0.178	0.257	0.363	0.525	0.716	0.904	1.109	-3.45%	7.39%	5.11%
Other Africa	0.559	0.702	0.755	0.974	1.238	1.538	1.823	2.107	3.06%	5.08%	3.61%
Asia & Oceania	**13.741**	**20.677**	**23.990**	**29.993**	**35.490**	**40.679**	**45.807**	**50.141**	**5.73%**	**3.99%**	**2.33%**
Australia	1.014	1.249	1.543	1.786	1.919	2.002	2.070	2.115	4.29%	2.20%	0.65%
China	1.655	3.769	6.044	8.654	11.656	14.610	17.543	20.394	13.83%	6.79%	3.80%
India	1.269	2.277	1.969	2.800	3.410	4.151	4.949	5.656	4.49%	5.65%	3.43%
Indonesia	0.638	1.397	1.380	1.653	1.987	2.377	2.730	3.051	8.01%	3.71%	2.90%
Japan	3.110	3.861	4.011	4.054	3.996	3.887	3.934	3.891	2.58%	-0.04%	-0.18%
Malaysia	0.914	1.145	1.084	1.289	1.420	1.496	1.531	1.533	1.72%	2.74%	0.51%
Myanmar	0.146	0.114	0.119	0.165	0.216	0.266	0.332	0.399	-2.04%	6.14%	4.17%
Pakistan	1.088	1.400	1.333	1.679	2.023	2.354	2.592	2.632	2.05%	4.26%	1.77%
Singapore	0.233	0.297	0.370	0.409	0.417	0.416	0.409	0.393	4.72%	1.21%	-0.40%
South Korea	1.076	1.524	1.975	2.407	2.636	2.779	2.813	2.765	6.26%	2.93%	0.32%
Thailand	1.150	1.592	1.839	2.133	2.306	2.387	2.512	2.581	4.81%	2.29%	0.75%
Other Asia & Oceania	1.447	2.051	2.324	2.966	3.504	3.953	4.393	4.729	4.85%	4.19%	2.02%
World	**99.448**	**113.816**	**120.506**	**132.609**	**145.089**	**154.722**	**163.732**	**171.770**	**1.94%**	**1.87%**	**1.13%**

[46] Demand includes Lease and Plant Use and Pipeline Fuel. Historical data match those reported by EIA.

Ref_HRR Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.881**	**35.118**	**37.060**	**37.972**	**38.922**	**40.021**	**2.06%**	**1.20%**	**0.51%**
Canada	3.144	2.815	3.125	3.322	3.480	3.591	3.669	3.762	-0.06%	1.08%	0.52%
Mexico	1.656	2.286	2.499	2.652	2.851	3.042	3.244	3.433	4.20%	1.33%	1.24%
United States	22.014	24.087	27.258	29.144	30.729	31.339	32.009	32.827	2.16%	1.21%	0.44%
Central & South America	**4.208**	**4.897**	**5.729**	**6.176**	**6.883**	**7.464**	**7.889**	**8.286**	**3.13%**	**1.85%**	**1.24%**
Argentina	1.428	1.529	1.611	1.863	2.035	2.175	2.286	2.391	1.21%	2.36%	1.08%
Brazil	0.657	0.890	1.156	1.350	1.556	1.744	1.887	2.005	5.81%	3.01%	1.70%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.402	0.426	-2.39%	3.72%	1.65%
Colombia	0.236	0.321	0.393	0.402	0.445	0.493	0.521	0.562	5.25%	1.26%	1.57%
Peru	0.056	0.194	0.221	0.234	0.265	0.290	0.313	0.331	14.73%	1.85%	1.50%
Trinidad and Tobago	0.575	0.824	0.752	0.760	0.772	0.759	0.741	0.716	2.72%	0.27%	-0.50%
Venezuela	0.828	0.748	1.102	0.981	1.133	1.238	1.295	1.358	2.90%	0.28%	1.22%
Other Central & South America	0.135	0.205	0.263	0.295	0.343	0.394	0.444	0.496	6.94%	2.68%	2.50%
Europe	**20.095**	**20.525**	**17.989**	**18.726**	**19.360**	**19.551**	**19.642**	**19.481**	**-1.10%**	**0.74%**	**0.04%**
Austria	0.354	0.353	0.286	0.296	0.308	0.314	0.318	0.317	-2.11%	0.74%	0.21%
Belgium	0.601	0.700	0.613	0.655	0.697	0.728	0.741	0.745	0.19%	1.30%	0.44%
France	1.740	1.695	1.425	1.443	1.446	1.387	1.346	1.293	-1.98%	0.15%	-0.74%
Germany	3.203	3.329	3.060	3.117	3.182	3.185	3.134	3.039	-0.45%	0.39%	-0.31%
Italy	3.046	2.935	2.323	2.344	2.360	2.357	2.351	2.327	-2.67%	0.16%	-0.09%
Netherlands	1.741	1.937	1.720	1.755	1.761	1.724	1.681	1.616	-0.12%	0.23%	-0.57%
Norway	0.187	0.194	0.223	0.237	0.255	0.238	0.206	0.195	1.77%	1.35%	-1.76%
Poland	0.573	0.606	0.618	0.689	0.761	0.817	0.860	0.885	0.75%	2.11%	1.01%
Portugal	0.152	0.182	0.146	0.153	0.160	0.165	0.168	0.168	-0.42%	0.98%	0.32%
Romania	0.643	0.455	0.454	0.493	0.521	0.528	0.533	0.522	-3.42%	1.40%	0.01%
Spain	1.188	1.265	1.052	1.102	1.147	1.176	1.192	1.206	-1.21%	0.87%	0.34%
Turkey	0.967	1.346	1.533	1.686	1.804	1.878	1.970	2.053	4.72%	1.64%	0.86%
United Kingdom	3.376	3.337	2.648	2.728	2.803	2.844	2.913	2.904	-2.40%	0.57%	0.23%
Other Europe	2.324	2.192	1.889	2.028	2.154	2.209	2.230	2.210	-2.05%	1.32%	0.17%
Eurasia	**21.786**	**21.616**	**21.674**	**22.974**	**24.234**	**24.909**	**25.207**	**25.482**	**-0.05%**	**1.12%**	**0.34%**
Kazakhstan	0.477	0.303	0.474	0.557	0.636	0.692	0.729	0.760	-0.05%	2.98%	1.19%
Russia	14.330	15.471	15.275	15.713	16.184	16.291	16.203	16.060	0.64%	0.58%	-0.05%
Turkmenistan	0.629	0.720	0.765	0.928	1.090	1.220	1.337	1.437	1.98%	3.61%	1.86%
Ukraine	3.079	1.969	1.677	1.772	1.847	1.884	1.894	1.875	-5.89%	0.97%	0.10%
Uzbekistan	1.702	1.614	1.890	2.280	2.625	2.893	3.096	3.401	1.05%	3.34%	1.74%
Other Eurasia	1.569	1.538	1.593	1.724	1.852	1.929	1.949	1.949	0.15%	1.52%	0.34%
Middle East	**9.825**	**13.379**	**14.479**	**15.524**	**17.088**	**18.338**	**19.509**	**20.573**	**3.95%**	**1.67%**	**1.25%**
Iran	3.707	5.106	5.243	5.490	5.935	6.301	6.603	6.923	3.53%	1.25%	1.03%
Qatar	0.660	0.796	1.102	1.142	1.219	1.279	1.312	1.332	5.26%	1.01%	0.59%
Oman	0.324	0.620	0.710	0.780	0.859	0.908	0.939	0.977	8.17%	1.92%	0.86%
Saudi Arabia	2.516	3.096	3.510	3.894	4.425	4.842	5.206	5.490	3.39%	2.34%	1.45%
United Arab Emirates	1.457	2.147	2.203	2.296	2.464	2.556	2.708	2.839	4.22%	1.13%	0.95%
Other Middle East	1.160	1.614	1.711	1.922	2.186	2.453	2.741	3.011	3.96%	2.48%	2.16%
Africa	**2.979**	**3.535**	**3.894**	**4.597**	**5.539**	**6.596**	**7.726**	**8.872**	**2.71%**	**3.59%**	**3.19%**
Algeria	0.846	1.024	1.086	1.225	1.420	1.589	1.707	1.793	2.53%	2.72%	1.57%
Egypt	1.208	1.630	1.795	2.034	2.353	2.746	3.287	3.855	4.04%	2.74%	3.35%
Nigeria	0.366	0.178	0.258	0.363	0.526	0.721	0.904	1.107	-3.45%	7.41%	5.08%
Other Africa	0.559	0.702	0.755	0.975	1.240	1.539	1.828	2.116	3.06%	5.09%	3.63%
Asia & Oceania	**13.741**	**20.677**	**23.987**	**29.988**	**35.545**	**40.608**	**45.768**	**50.056**	**5.73%**	**4.01%**	**2.31%**
Australia	1.014	1.249	1.544	1.781	1.919	1.998	2.068	2.108	4.29%	2.20%	0.63%
China	1.655	3.769	6.043	8.652	11.668	14.567	17.522	20.361	13.83%	6.80%	3.78%
India	1.269	2.277	1.968	2.800	3.419	4.148	4.941	5.648	4.49%	5.68%	3.40%
Indonesia	0.638	1.397	1.380	1.652	1.985	2.376	2.729	3.048	8.01%	3.70%	2.90%
Japan	3.110	3.861	4.011	4.054	4.010	3.882	3.931	3.888	2.58%	0.00%	-0.21%
Malaysia	0.914	1.145	1.083	1.287	1.420	1.493	1.534	1.531	1.72%	2.74%	0.50%
Myanmar	0.146	0.114	0.119	0.165	0.216	0.266	0.332	0.397	-2.04%	6.14%	4.15%
Pakistan	1.088	1.400	1.333	1.679	2.034	2.349	2.588	2.644	2.05%	4.32%	1.76%
Singapore	0.233	0.297	0.370	0.409	0.418	0.416	0.409	0.393	4.72%	1.21%	-0.41%
South Korea	1.076	1.524	1.975	2.407	2.644	2.776	2.809	2.760	6.26%	2.96%	0.28%
Thailand	1.150	1.592	1.838	2.133	2.307	2.387	2.512	2.574	4.80%	2.30%	0.73%
Other Asia & Oceania	1.447	2.051	2.323	2.970	3.505	3.949	4.393	4.705	4.85%	4.20%	1.98%
World	**99.448**	**113.816**	**120.633**	**133.104**	**145.710**	**155.438**	**164.664**	**172.771**	**1.95%**	**1.91%**	**1.14%**

Ref_LRR Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.506**	**34.361**	**36.156**	**36.532**	**37.288**	**38.114**	**1.94%**	**1.07%**	**0.35%**
Canada	3.144	2.815	3.134	3.390	3.496	3.551	3.611	3.692	-0.03%	1.10%	0.36%
Mexico	1.656	2.286	2.476	2.631	2.874	3.103	3.344	3.521	4.10%	1.50%	1.36%
United States	22.014	24.087	26.896	28.340	29.786	29.878	30.332	30.902	2.02%	1.03%	0.25%
Central & South America	**4.208**	**4.897**	**5.730**	**6.170**	**6.883**	**7.456**	**7.890**	**8.264**	**3.13%**	**1.85%**	**1.23%**
Argentina	1.428	1.529	1.612	1.863	2.035	2.175	2.287	2.388	1.22%	2.36%	1.07%
Brazil	0.657	0.890	1.157	1.349	1.556	1.744	1.887	2.002	5.82%	3.01%	1.69%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.402	0.425	-2.40%	3.72%	1.65%
Colombia	0.236	0.321	0.393	0.403	0.446	0.491	0.521	0.561	5.25%	1.27%	1.55%
Peru	0.056	0.194	0.220	0.234	0.265	0.289	0.313	0.333	14.68%	1.88%	1.54%
Trinidad and Tobago	0.575	0.824	0.753	0.757	0.772	0.758	0.741	0.714	2.74%	0.25%	-0.52%
Venezuela	0.828	0.748	1.102	0.978	1.134	1.235	1.296	1.345	2.90%	0.29%	1.15%
Other Central & South America	0.135	0.205	0.263	0.296	0.342	0.393	0.445	0.495	6.93%	2.66%	2.50%
Europe	**20.095**	**20.525**	**17.992**	**18.714**	**19.328**	**19.529**	**19.623**	**19.518**	**-1.10%**	**0.72%**	**0.07%**
Austria	0.354	0.353	0.286	0.295	0.307	0.313	0.318	0.318	-2.10%	0.72%	0.23%
Belgium	0.601	0.700	0.613	0.655	0.696	0.727	0.741	0.746	0.19%	1.29%	0.46%
France	1.740	1.695	1.425	1.437	1.436	1.381	1.344	1.296	-1.98%	0.07%	-0.68%
Germany	3.203	3.329	3.061	3.115	3.176	3.182	3.131	3.047	-0.45%	0.37%	-0.28%
Italy	3.046	2.935	2.324	2.342	2.358	2.355	2.349	2.329	-2.67%	0.15%	-0.08%
Netherlands	1.741	1.937	1.720	1.756	1.760	1.724	1.679	1.616	-0.12%	0.23%	-0.57%
Norway	0.187	0.194	0.223	0.240	0.257	0.238	0.204	0.196	1.78%	1.42%	-1.79%
Poland	0.573	0.606	0.618	0.689	0.760	0.819	0.862	0.899	0.76%	2.09%	1.13%
Portugal	0.152	0.182	0.145	0.153	0.160	0.164	0.168	0.168	-0.43%	0.94%	0.35%
Romania	0.643	0.455	0.454	0.493	0.521	0.528	0.533	0.523	-3.42%	1.39%	0.03%
Spain	1.188	1.265	1.052	1.099	1.142	1.172	1.191	1.206	-1.21%	0.83%	0.36%
Turkey	0.967	1.346	1.533	1.687	1.802	1.874	1.968	2.055	4.72%	1.63%	0.88%
United Kingdom	3.376	3.337	2.647	2.728	2.804	2.845	2.909	2.904	-2.40%	0.58%	0.23%
Other Europe	2.324	2.192	1.890	2.026	2.149	2.205	2.226	2.215	-2.05%	1.29%	0.20%
Eurasia	**21.786**	**21.616**	**21.674**	**22.970**	**24.225**	**24.886**	**25.212**	**25.504**	**-0.05%**	**1.12%**	**0.34%**
Kazakhstan	0.477	0.303	0.474	0.557	0.637	0.691	0.731	0.764	-0.05%	2.99%	1.23%
Russia	14.330	15.471	15.274	15.710	16.178	16.277	16.208	16.074	0.64%	0.58%	-0.04%
Turkmenistan	0.629	0.720	0.765	0.929	1.088	1.215	1.335	1.435	1.98%	3.59%	1.86%
Ukraine	3.079	1.969	1.678	1.771	1.847	1.885	1.894	1.879	-5.89%	0.97%	0.12%
Uzbekistan	1.702	1.614	1.890	2.279	2.623	2.890	3.096	3.402	1.05%	3.33%	1.75%
Other Eurasia	1.569	1.538	1.593	1.724	1.852	1.928	1.948	1.949	0.15%	1.52%	0.34%
Middle East	**9.825**	**13.379**	**14.479**	**15.527**	**17.080**	**18.351**	**19.527**	**20.597**	**3.95%**	**1.67%**	**1.26%**
Iran	3.707	5.106	5.243	5.495	5.931	6.308	6.625	6.922	3.53%	1.24%	1.04%
Qatar	0.660	0.796	1.102	1.142	1.219	1.277	1.312	1.345	5.26%	1.01%	0.66%
Oman	0.324	0.620	0.710	0.780	0.859	0.909	0.943	0.973	8.17%	1.92%	0.84%
Saudi Arabia	2.516	3.096	3.510	3.892	4.422	4.848	5.202	5.488	3.39%	2.34%	1.45%
United Arab Emirates	1.457	2.147	2.203	2.296	2.464	2.554	2.703	2.845	4.22%	1.13%	0.96%
Other Middle East	1.160	1.614	1.710	1.921	2.186	2.455	2.743	3.023	3.95%	2.48%	2.19%
Africa	**2.979**	**3.535**	**3.894**	**4.598**	**5.550**	**6.588**	**7.716**	**8.877**	**2.72%**	**3.61%**	**3.18%**
Algeria	0.846	1.024	1.086	1.225	1.420	1.590	1.704	1.789	2.53%	2.71%	1.56%
Egypt	1.208	1.630	1.795	2.035	2.362	2.742	3.280	3.859	4.04%	2.78%	3.33%
Nigeria	0.366	0.178	0.258	0.362	0.530	0.720	0.911	1.110	-3.42%	7.44%	5.06%
Other Africa	0.559	0.702	0.755	0.975	1.239	1.536	1.821	2.118	3.06%	5.08%	3.64%
Asia & Oceania	**13.741**	**20.677**	**23.989**	**29.985**	**35.478**	**40.573**	**45.778**	**50.001**	**5.73%**	**3.99%**	**2.31%**
Australia	1.014	1.249	1.544	1.788	1.920	2.000	2.068	2.109	4.29%	2.20%	0.63%
China	1.655	3.769	6.044	8.647	11.663	14.561	17.548	20.335	13.83%	6.79%	3.78%
India	1.269	2.277	1.969	2.798	3.410	4.142	4.935	5.637	4.49%	5.65%	3.41%
Indonesia	0.638	1.397	1.380	1.654	1.987	2.379	2.731	3.052	8.01%	3.71%	2.90%
Japan	3.110	3.861	4.011	4.052	3.992	3.874	3.929	3.890	2.58%	-0.05%	-0.17%
Malaysia	0.914	1.145	1.084	1.287	1.420	1.495	1.529	1.531	1.72%	2.74%	0.50%
Myanmar	0.146	0.114	0.119	0.165	0.215	0.265	0.332	0.397	-2.05%	6.12%	4.18%
Pakistan	1.088	1.400	1.333	1.679	2.021	2.342	2.585	2.625	2.05%	4.25%	1.76%
Singapore	0.233	0.297	0.370	0.409	0.417	0.416	0.408	0.393	4.72%	1.20%	-0.40%
South Korea	1.076	1.524	1.975	2.405	2.633	2.769	2.804	2.757	6.26%	2.92%	0.31%
Thailand	1.150	1.592	1.838	2.132	2.302	2.385	2.512	2.577	4.80%	2.27%	0.76%
Other Asia & Oceania	1.447	2.051	2.322	2.969	3.499	3.946	4.396	4.697	4.84%	4.19%	1.98%
World	**99.448**	**113.816**	**120.263**	**132.325**	**144.700**	**153.914**	**163.034**	**170.875**	**1.92%**	**1.87%**	**1.11%**

Ref_Hi-D Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.838**	**35.538**	**38.173**	**39.441**	**40.216**	**41.102**	**2.05%**	**1.52%**	**0.49%**
Canada	3.144	2.815	3.132	3.381	3.502	3.561	3.622	3.703	-0.04%	1.12%	0.37%
Mexico	1.656	2.286	2.485	2.640	2.859	3.091	3.303	3.508	4.14%	1.41%	1.37%
United States	22.014	24.087	27.221	29.517	31.812	32.789	33.291	33.891	2.15%	1.57%	0.42%
Central & South America	**4.208**	**4.897**	**5.729**	**6.173**	**6.885**	**7.461**	**7.894**	**8.252**	**3.13%**	**1.86%**	**1.22%**
Argentina	1.428	1.529	1.611	1.863	2.036	2.176	2.286	2.391	1.22%	2.37%	1.08%
Brazil	0.657	0.890	1.157	1.349	1.557	1.745	1.887	2.004	5.82%	3.02%	1.70%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.401	0.426	-2.40%	3.73%	1.66%
Colombia	0.236	0.321	0.393	0.402	0.446	0.491	0.524	0.561	5.25%	1.28%	1.54%
Peru	0.056	0.194	0.219	0.233	0.266	0.291	0.313	0.331	14.66%	1.96%	1.47%
Trinidad and Tobago	0.575	0.824	0.752	0.760	0.770	0.757	0.740	0.712	2.73%	0.24%	-0.52%
Venezuela	0.828	0.748	1.102	0.981	1.134	1.234	1.300	1.340	2.90%	0.29%	1.12%
Other Central & South America	0.135	0.205	0.263	0.294	0.342	0.397	0.442	0.487	6.95%	2.66%	2.37%
Europe	**20.095**	**20.525**	**17.991**	**18.709**	**19.319**	**19.557**	**19.647**	**19.483**	**-1.10%**	**0.71%**	**0.06%**
Austria	0.354	0.353	0.286	0.295	0.307	0.314	0.318	0.317	-2.10%	0.71%	0.23%
Belgium	0.601	0.700	0.613	0.655	0.696	0.728	0.741	0.745	0.19%	1.28%	0.45%
France	1.740	1.695	1.425	1.438	1.436	1.388	1.346	1.293	-1.98%	0.07%	-0.70%
Germany	3.203	3.329	3.061	3.114	3.174	3.186	3.135	3.041	-0.45%	0.36%	-0.29%
Italy	3.046	2.935	2.324	2.342	2.357	2.357	2.351	2.327	-2.67%	0.14%	-0.09%
Netherlands	1.741	1.937	1.720	1.755	1.760	1.724	1.681	1.615	-0.12%	0.23%	-0.57%
Norway	0.187	0.194	0.223	0.239	0.257	0.238	0.205	0.194	1.77%	1.43%	-1.86%
Poland	0.573	0.606	0.618	0.688	0.760	0.822	0.865	0.897	0.75%	2.09%	1.11%
Portugal	0.152	0.182	0.145	0.153	0.160	0.165	0.168	0.168	-0.43%	0.95%	0.34%
Romania	0.643	0.455	0.454	0.493	0.521	0.529	0.533	0.522	-3.42%	1.39%	0.02%
Spain	1.188	1.265	1.052	1.100	1.143	1.176	1.192	1.205	-1.21%	0.83%	0.35%
Turkey	0.967	1.346	1.533	1.686	1.799	1.878	1.968	2.052	4.72%	1.61%	0.88%
United Kingdom	3.376	3.337	2.648	2.726	2.802	2.844	2.913	2.898	-2.40%	0.57%	0.22%
Other Europe	2.324	2.192	1.890	2.026	2.147	2.209	2.229	2.209	-2.05%	1.29%	0.19%
Eurasia	**21.786**	**21.616**	**21.674**	**22.968**	**24.209**	**24.897**	**25.194**	**25.479**	**-0.05%**	**1.11%**	**0.34%**
Kazakhstan	0.477	0.303	0.474	0.557	0.635	0.691	0.730	0.763	-0.05%	2.95%	1.23%
Russia	14.330	15.471	15.274	15.708	16.167	16.282	16.192	16.055	0.64%	0.57%	-0.05%
Turkmenistan	0.629	0.720	0.765	0.929	1.090	1.218	1.335	1.436	1.98%	3.60%	1.86%
Ukraine	3.079	1.969	1.678	1.771	1.845	1.885	1.894	1.875	-5.89%	0.96%	0.11%
Uzbekistan	1.702	1.614	1.890	2.280	2.622	2.892	3.096	3.401	1.05%	3.33%	1.75%
Other Eurasia	1.569	1.538	1.593	1.723	1.851	1.930	1.948	1.949	0.15%	1.51%	0.35%
Middle East	**9.825**	**13.379**	**14.477**	**15.518**	**17.082**	**18.346**	**19.509**	**20.598**	**3.95%**	**1.67%**	**1.26%**
Iran	3.707	5.106	5.243	5.487	5.932	6.301	6.617	6.925	3.53%	1.24%	1.04%
Qatar	0.660	0.796	1.102	1.142	1.219	1.279	1.312	1.328	5.26%	1.01%	0.57%
Oman	0.324	0.620	0.710	0.780	0.859	0.909	0.940	0.982	8.17%	1.92%	0.90%
Saudi Arabia	2.516	3.096	3.511	3.892	4.422	4.853	5.204	5.487	3.39%	2.34%	1.45%
United Arab Emirates	1.457	2.147	2.202	2.296	2.465	2.549	2.700	2.858	4.22%	1.13%	0.99%
Other Middle East	1.160	1.614	1.708	1.921	2.184	2.456	2.736	3.018	3.94%	2.49%	2.18%
Africa	**2.979**	**3.535**	**3.895**	**4.597**	**5.541**	**6.595**	**7.721**	**8.877**	**2.72%**	**3.59%**	**3.19%**
Algeria	0.846	1.024	1.086	1.226	1.421	1.591	1.709	1.790	2.53%	2.73%	1.55%
Egypt	1.208	1.630	1.795	2.034	2.355	2.745	3.285	3.854	4.04%	2.75%	3.34%
Nigeria	0.366	0.178	0.259	0.363	0.527	0.721	0.904	1.123	-3.41%	7.37%	5.17%
Other Africa	0.559	0.702	0.755	0.975	1.239	1.538	1.822	2.110	3.06%	5.08%	3.62%
Asia & Oceania	**13.741**	**20.677**	**23.991**	**29.992**	**35.464**	**40.610**	**45.733**	**50.039**	**5.73%**	**3.99%**	**2.32%**
Australia	1.014	1.249	1.544	1.785	1.921	1.999	2.065	2.107	4.29%	2.21%	0.62%
China	1.655	3.769	6.045	8.653	11.652	14.571	17.506	20.350	13.83%	6.78%	3.79%
India	1.269	2.277	1.969	2.798	3.403	4.144	4.939	5.645	4.49%	5.63%	3.43%
Indonesia	0.638	1.397	1.380	1.654	1.987	2.375	2.726	3.043	8.01%	3.71%	2.88%
Japan	3.110	3.861	4.011	4.053	3.992	3.883	3.930	3.887	2.58%	-0.05%	-0.18%
Malaysia	0.914	1.145	1.084	1.288	1.420	1.494	1.531	1.529	1.72%	2.74%	0.50%
Myanmar	0.146	0.114	0.119	0.165	0.216	0.266	0.332	0.398	-2.05%	6.13%	4.18%
Pakistan	1.088	1.400	1.333	1.679	2.019	2.352	2.587	2.643	2.05%	4.24%	1.81%
Singapore	0.233	0.297	0.370	0.409	0.417	0.416	0.408	0.393	4.72%	1.21%	-0.40%
South Korea	1.076	1.524	1.975	2.406	2.633	2.776	2.808	2.759	6.26%	2.92%	0.31%
Thailand	1.150	1.592	1.838	2.133	2.304	2.385	2.510	2.574	4.80%	2.28%	0.74%
Other Asia & Oceania	1.447	2.051	2.324	2.970	3.501	3.948	4.389	4.711	4.85%	4.18%	2.00%
World	**99.448**	**113.816**	**120.594**	**133.495**	**146.674**	**156.909**	**165.914**	**173.831**	**1.95%**	**1.98%**	**1.14%**

LNG12_Ref Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.721**	**34.763**	**36.660**	**37.292**	**38.113**	**39.078**	**2.01%**	**1.14%**	**0.43%**
Canada	3.144	2.815	3.128	3.364	3.511	3.585	3.667	3.722	-0.05%	1.16%	0.39%
Mexico	1.656	2.286	2.487	2.644	2.849	3.074	3.294	3.509	4.15%	1.37%	1.40%
United States	22.014	24.087	27.106	28.755	30.301	30.634	31.151	31.846	2.10%	1.12%	0.33%
Central & South America	**4.208**	**4.897**	**5.725**	**6.170**	**6.888**	**7.455**	**7.876**	**8.173**	**3.13%**	**1.87%**	**1.15%**
Argentina	1.428	1.529	1.612	1.862	2.037	2.175	2.289	2.384	1.22%	2.37%	1.06%
Brazil	0.657	0.890	1.157	1.348	1.556	1.746	1.886	2.004	5.82%	3.01%	1.70%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.402	0.426	-2.40%	3.72%	1.65%
Colombia	0.236	0.321	0.393	0.402	0.446	0.490	0.522	0.559	5.25%	1.27%	1.52%
Peru	0.056	0.194	0.218	0.234	0.265	0.291	0.312	0.331	14.61%	1.95%	1.50%
Trinidad and Tobago	0.575	0.824	0.750	0.761	0.775	0.761	0.738	0.706	2.70%	0.33%	-0.62%
Venezuela	0.828	0.748	1.102	0.981	1.135	1.234	1.306	1.334	2.90%	0.30%	1.08%
Other Central & South America	0.135	0.205	0.263	0.292	0.341	0.388	0.423	0.429	6.93%	2.66%	1.54%
Europe	**20.095**	**20.525**	**17.967**	**18.614**	**19.115**	**19.234**	**19.244**	**19.026**	**-1.11%**	**0.62%**	**-0.03%**
Austria	0.354	0.353	0.286	0.294	0.305	0.311	0.314	0.314	-2.11%	0.66%	0.19%
Belgium	0.601	0.700	0.612	0.651	0.689	0.717	0.728	0.730	0.18%	1.20%	0.38%
France	1.740	1.695	1.421	1.419	1.396	1.329	1.288	1.243	-2.01%	-0.17%	-0.77%
Germany	3.203	3.329	3.057	3.095	3.139	3.147	3.078	2.976	-0.47%	0.27%	-0.35%
Italy	3.046	2.935	2.322	2.337	2.349	2.344	2.339	2.317	-2.68%	0.12%	-0.09%
Netherlands	1.741	1.937	1.717	1.739	1.733	1.683	1.635	1.578	-0.14%	0.09%	-0.62%
Norway	0.187	0.194	0.225	0.247	0.263	0.256	0.239	0.225	1.86%	1.58%	-1.03%
Poland	0.573	0.606	0.618	0.681	0.735	0.770	0.783	0.780	0.75%	1.75%	0.40%
Portugal	0.152	0.182	0.145	0.152	0.158	0.161	0.166	0.167	-0.46%	0.83%	0.41%
Romania	0.643	0.455	0.454	0.492	0.519	0.528	0.532	0.518	-3.42%	1.35%	-0.01%
Spain	1.188	1.265	1.050	1.093	1.129	1.153	1.179	1.207	-1.23%	0.73%	0.45%
Turkey	0.967	1.346	1.530	1.682	1.792	1.872	1.966	2.053	4.70%	1.60%	0.91%
United Kingdom	3.376	3.337	2.645	2.717	2.781	2.783	2.806	2.752	-2.41%	0.50%	-0.07%
Other Europe	2.324	2.192	1.887	2.015	2.127	2.179	2.191	2.165	-2.06%	1.20%	0.12%
Eurasia	**21.786**	**21.616**	**21.673**	**22.917**	**24.215**	**24.910**	**25.193**	**25.422**	**-0.05%**	**1.12%**	**0.32%**
Kazakhstan	0.477	0.303	0.474	0.556	0.638	0.692	0.732	0.766	-0.05%	3.00%	1.23%
Russia	14.330	15.471	15.275	15.673	16.167	16.289	16.198	16.016	0.64%	0.57%	-0.06%
Turkmenistan	0.629	0.720	0.765	0.928	1.094	1.230	1.347	1.452	1.98%	3.64%	1.90%
Ukraine	3.079	1.969	1.676	1.766	1.844	1.885	1.887	1.861	-5.90%	0.96%	0.06%
Uzbekistan	1.702	1.614	1.890	2.273	2.620	2.886	3.088	3.388	1.05%	3.32%	1.73%
Other Eurasia	1.569	1.538	1.593	1.721	1.852	1.926	1.942	1.939	0.15%	1.52%	0.31%
Middle East	**9.825**	**13.379**	**14.478**	**15.518**	**17.074**	**18.352**	**19.528**	**20.571**	**3.95%**	**1.66%**	**1.25%**
Iran	3.707	5.106	5.244	5.486	5.922	6.306	6.605	6.934	3.53%	1.22%	1.06%
Qatar	0.660	0.796	1.102	1.142	1.225	1.285	1.315	1.336	5.26%	1.06%	0.58%
Oman	0.324	0.620	0.710	0.780	0.860	0.909	0.948	0.974	8.17%	1.93%	0.83%
Saudi Arabia	2.516	3.096	3.510	3.892	4.419	4.844	5.202	5.465	3.39%	2.33%	1.43%
United Arab Emirates	1.457	2.147	2.203	2.296	2.464	2.550	2.706	2.835	4.22%	1.13%	0.94%
Other Middle East	1.160	1.614	1.709	1.921	2.185	2.457	2.753	3.027	3.95%	2.49%	2.20%
Africa	**2.979**	**3.535**	**3.895**	**4.599**	**5.562**	**6.594**	**7.723**	**8.886**	**2.72%**	**3.63%**	**3.17%**
Algeria	0.846	1.024	1.087	1.227	1.426	1.592	1.700	1.784	2.53%	2.75%	1.51%
Egypt	1.208	1.630	1.795	2.033	2.355	2.743	3.286	3.857	4.04%	2.75%	3.34%
Nigeria	0.366	0.178	0.259	0.364	0.538	0.718	0.909	1.117	-3.40%	7.59%	4.99%
Other Africa	0.559	0.702	0.755	0.975	1.243	1.541	1.829	2.129	3.05%	5.12%	3.65%
Asia & Oceania	**13.741**	**20.677**	**24.175**	**30.428**	**35.696**	**39.988**	**43.479**	**44.379**	**5.81%**	**3.97%**	**1.46%**
Australia	1.014	1.249	1.545	1.803	1.922	2.002	2.072	2.156	4.30%	2.21%	0.77%
China	1.655	3.769	6.018	8.784	11.687	14.201	16.103	16.975	13.78%	6.86%	2.52%
India	1.269	2.277	1.959	2.689	3.279	3.923	4.498	4.686	4.44%	5.29%	2.41%
Indonesia	0.638	1.397	1.383	1.656	1.990	2.381	2.738	3.024	8.04%	3.71%	2.83%
Japan	3.110	3.861	4.236	4.473	4.367	4.173	4.105	3.869	3.14%	0.30%	-0.80%
Malaysia	0.914	1.145	1.083	1.287	1.419	1.498	1.525	1.516	1.72%	2.74%	0.44%
Myanmar	0.146	0.114	0.119	0.164	0.216	0.276	0.339	0.371	-2.03%	6.13%	3.68%
Pakistan	1.088	1.400	1.332	1.679	2.034	2.218	2.373	2.455	2.04%	4.33%	1.26%
Singapore	0.233	0.297	0.370	0.409	0.417	0.414	0.406	0.390	4.72%	1.19%	-0.44%
South Korea	1.076	1.524	1.966	2.381	2.591	2.654	2.667	2.577	6.21%	2.80%	-0.04%
Thailand	1.150	1.592	1.838	2.130	2.301	2.366	2.482	2.321	4.80%	2.27%	0.06%
Other Asia & Oceania	1.447	2.051	2.324	2.973	3.473	3.883	4.172	4.038	4.85%	4.10%	1.01%
World	**99.448**	**113.816**	**120.633**	**133.009**	**145.210**	**153.825**	**161.156**	**165.535**	**1.95%**	**1.87%**	**0.88%**

LNG12_HRR Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.877**	**35.072**	**37.122**	**37.928**	**38.956**	**40.023**	**2.06%**	**1.22%**	**0.50%**
Canada	3.144	2.815	3.126	3.328	3.490	3.595	3.687	3.749	-0.06%	1.11%	0.48%
Mexico	1.656	2.286	2.497	2.650	2.849	3.058	3.273	3.472	4.19%	1.33%	1.33%
United States	22.014	24.087	27.255	29.093	30.783	31.274	31.995	32.802	2.16%	1.22%	0.42%
Central & South America	**4.208**	**4.897**	**5.729**	**6.179**	**6.890**	**7.456**	**7.862**	**8.201**	**3.13%**	**1.86%**	**1.17%**
Argentina	1.428	1.529	1.612	1.863	2.037	2.175	2.288	2.386	1.22%	2.37%	1.06%
Brazil	0.657	0.890	1.157	1.349	1.557	1.746	1.886	2.007	5.82%	3.02%	1.71%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.401	0.426	-2.40%	3.72%	1.65%
Colombia	0.236	0.321	0.393	0.402	0.446	0.491	0.520	0.562	5.25%	1.28%	1.54%
Peru	0.056	0.194	0.220	0.234	0.265	0.291	0.313	0.334	14.71%	1.87%	1.55%
Trinidad and Tobago	0.575	0.824	0.752	0.766	0.776	0.761	0.737	0.712	2.72%	0.32%	-0.57%
Venezuela	0.828	0.748	1.102	0.981	1.133	1.235	1.292	1.342	2.90%	0.28%	1.13%
Other Central & South America	0.135	0.205	0.263	0.293	0.342	0.388	0.426	0.433	6.94%	2.65%	1.59%
Europe	**20.095**	**20.525**	**17.967**	**18.619**	**19.123**	**19.233**	**19.264**	**19.052**	**-1.11%**	**0.63%**	**-0.02%**
Austria	0.354	0.353	0.285	0.294	0.305	0.311	0.315	0.314	-2.12%	0.67%	0.19%
Belgium	0.601	0.700	0.612	0.651	0.689	0.717	0.729	0.730	0.18%	1.20%	0.38%
France	1.740	1.695	1.421	1.420	1.397	1.329	1.291	1.247	-2.01%	-0.17%	-0.75%
Germany	3.203	3.329	3.057	3.095	3.140	3.146	3.083	2.981	-0.47%	0.27%	-0.34%
Italy	3.046	2.935	2.322	2.338	2.351	2.344	2.341	2.318	-2.68%	0.12%	-0.09%
Netherlands	1.741	1.937	1.717	1.740	1.734	1.683	1.635	1.578	-0.14%	0.10%	-0.63%
Norway	0.187	0.194	0.225	0.247	0.264	0.255	0.238	0.224	1.86%	1.59%	-1.07%
Poland	0.573	0.606	0.618	0.682	0.735	0.770	0.784	0.783	0.76%	1.75%	0.43%
Portugal	0.152	0.182	0.145	0.152	0.158	0.161	0.167	0.168	-0.46%	0.83%	0.41%
Romania	0.643	0.455	0.454	0.492	0.519	0.528	0.532	0.519	-3.42%	1.35%	0.00%
Spain	1.188	1.265	1.050	1.093	1.129	1.152	1.181	1.208	-1.23%	0.73%	0.45%
Turkey	0.967	1.346	1.530	1.684	1.793	1.872	1.966	2.053	4.70%	1.60%	0.91%
United Kingdom	3.376	3.337	2.644	2.716	2.782	2.785	2.809	2.760	-2.41%	0.51%	-0.05%
Other Europe	2.324	2.192	1.887	2.015	2.128	2.179	2.194	2.169	-2.06%	1.20%	0.13%
Eurasia	**21.786**	**21.616**	**21.673**	**22.928**	**24.227**	**24.912**	**25.216**	**25.460**	**-0.05%**	**1.12%**	**0.33%**
Kazakhstan	0.477	0.303	0.474	0.557	0.640	0.692	0.731	0.766	-0.05%	3.03%	1.21%
Russia	14.330	15.471	15.275	15.680	16.173	16.290	16.210	16.042	0.64%	0.57%	-0.05%
Turkmenistan	0.629	0.720	0.765	0.928	1.095	1.233	1.352	1.455	1.98%	3.66%	1.91%
Ukraine	3.079	1.969	1.676	1.766	1.846	1.885	1.889	1.863	-5.90%	0.97%	0.06%
Uzbekistan	1.702	1.614	1.890	2.275	2.621	2.885	3.090	3.393	1.05%	3.33%	1.74%
Other Eurasia	1.569	1.538	1.592	1.722	1.852	1.926	1.944	1.941	0.15%	1.52%	0.31%
Middle East	**9.825**	**13.379**	**14.477**	**15.515**	**17.081**	**18.348**	**19.518**	**20.599**	**3.95%**	**1.67%**	**1.26%**
Iran	3.707	5.106	5.243	5.484	5.925	6.301	6.604	6.964	3.53%	1.23%	1.08%
Qatar	0.660	0.796	1.103	1.143	1.226	1.285	1.312	1.330	5.26%	1.07%	0.54%
Oman	0.324	0.620	0.710	0.780	0.860	0.905	0.950	0.981	8.17%	1.93%	0.88%
Saudi Arabia	2.516	3.096	3.510	3.893	4.420	4.848	5.203	5.469	3.39%	2.33%	1.43%
United Arab Emirates	1.457	2.147	2.202	2.295	2.463	2.549	2.702	2.841	4.22%	1.12%	0.96%
Other Middle East	1.160	1.614	1.708	1.920	2.188	2.459	2.747	3.015	3.94%	2.50%	2.16%
Africa	**2.979**	**3.535**	**3.897**	**4.604**	**5.566**	**6.609**	**7.720**	**8.875**	**2.72%**	**3.63%**	**3.16%**
Algeria	0.846	1.024	1.087	1.228	1.426	1.590	1.708	1.784	2.53%	2.75%	1.51%
Egypt	1.208	1.630	1.795	2.035	2.360	2.744	3.288	3.856	4.04%	2.77%	3.33%
Nigeria	0.366	0.178	0.260	0.365	0.536	0.732	0.893	1.102	-3.35%	7.50%	4.92%
Other Africa	0.559	0.702	0.755	0.976	1.244	1.543	1.831	2.133	3.05%	5.12%	3.66%
Asia & Oceania	**13.741**	**20.677**	**24.180**	**30.475**	**35.724**	**40.202**	**43.827**	**44.579**	**5.81%**	**3.98%**	**1.49%**
Australia	1.014	1.249	1.546	1.804	1.918	2.000	2.070	2.149	4.31%	2.18%	0.76%
China	1.655	3.769	6.021	8.810	11.707	14.335	16.214	17.036	13.79%	6.88%	2.53%
India	1.269	2.277	1.959	2.689	3.283	3.945	4.604	4.712	4.44%	5.30%	2.44%
Indonesia	0.638	1.397	1.384	1.657	1.991	2.383	2.740	3.037	8.04%	3.70%	2.86%
Japan	3.110	3.861	4.236	4.483	4.367	4.185	4.177	3.883	3.14%	0.31%	-0.78%
Malaysia	0.914	1.145	1.084	1.286	1.419	1.499	1.526	1.520	1.72%	2.73%	0.46%
Myanmar	0.146	0.114	0.119	0.165	0.216	0.277	0.339	0.374	-2.03%	6.12%	3.73%
Pakistan	1.088	1.400	1.332	1.679	2.036	2.236	2.399	2.471	2.04%	4.34%	1.30%
Singapore	0.233	0.297	0.370	0.409	0.417	0.415	0.406	0.392	4.72%	1.19%	-0.42%
South Korea	1.076	1.524	1.966	2.388	2.591	2.666	2.679	2.589	6.21%	2.80%	-0.01%
Thailand	1.150	1.592	1.838	2.130	2.300	2.370	2.487	2.366	4.80%	2.26%	0.19%
Other Asia & Oceania	1.447	2.051	2.324	2.976	3.479	3.892	4.186	4.049	4.85%	4.12%	1.02%
World	**99.448**	**113.816**	**120.799**	**133.391**	**145.733**	**154.687**	**162.363**	**166.789**	**1.96%**	**1.89%**	**0.90%**

LNG12_LRR Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.530**	**34.486**	**36.324**	**36.725**	**37.446**	**38.304**	**1.95%**	**1.11%**	**0.35%**
Canada	3.144	2.815	3.131	3.389	3.510	3.572	3.642	3.694	-0.04%	1.15%	0.34%
Mexico	1.656	2.286	2.477	2.629	2.877	3.106	3.350	3.549	4.11%	1.51%	1.41%
United States	22.014	24.087	26.923	28.468	29.937	30.046	30.454	31.062	2.03%	1.07%	0.25%
Central & South America	**4.208**	**4.897**	**5.728**	**6.179**	**6.886**	**7.455**	**7.864**	**8.184**	**3.13%**	**1.86%**	**1.16%**
Argentina	1.428	1.529	1.612	1.863	2.036	2.175	2.289	2.386	1.22%	2.37%	1.06%
Brazil	0.657	0.890	1.157	1.349	1.556	1.746	1.886	2.007	5.82%	3.01%	1.71%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.402	0.426	-2.40%	3.72%	1.66%
Colombia	0.236	0.321	0.393	0.402	0.446	0.491	0.524	0.562	5.25%	1.27%	1.56%
Peru	0.056	0.194	0.219	0.234	0.265	0.291	0.314	0.332	14.66%	1.90%	1.52%
Trinidad and Tobago	0.575	0.824	0.752	0.766	0.776	0.759	0.738	0.707	2.73%	0.31%	-0.61%
Venezuela	0.828	0.748	1.102	0.982	1.133	1.234	1.297	1.334	2.90%	0.28%	1.09%
Other Central & South America	0.135	0.205	0.263	0.293	0.341	0.389	0.413	0.430	6.94%	2.63%	1.55%
Europe	**20.095**	**20.525**	**17.967**	**18.614**	**19.117**	**19.240**	**19.275**	**19.113**	**-1.11%**	**0.62%**	**0.00%**
Austria	0.354	0.353	0.286	0.294	0.305	0.311	0.315	0.315	-2.11%	0.66%	0.21%
Belgium	0.601	0.700	0.612	0.651	0.689	0.717	0.729	0.732	0.18%	1.20%	0.40%
France	1.740	1.695	1.421	1.417	1.396	1.330	1.292	1.253	-2.01%	-0.17%	-0.72%
Germany	3.203	3.329	3.057	3.094	3.139	3.148	3.085	2.988	-0.46%	0.27%	-0.33%
Italy	3.046	2.935	2.322	2.337	2.350	2.344	2.340	2.320	-2.68%	0.12%	-0.08%
Netherlands	1.741	1.937	1.717	1.740	1.734	1.684	1.635	1.580	-0.14%	0.10%	-0.62%
Norway	0.187	0.194	0.225	0.249	0.263	0.255	0.241	0.226	1.87%	1.57%	-0.99%
Poland	0.573	0.606	0.618	0.681	0.734	0.770	0.784	0.786	0.75%	1.75%	0.45%
Portugal	0.152	0.182	0.145	0.152	0.158	0.161	0.166	0.168	-0.46%	0.83%	0.41%
Romania	0.643	0.455	0.454	0.493	0.519	0.528	0.532	0.520	-3.42%	1.35%	0.01%
Spain	1.188	1.265	1.050	1.092	1.129	1.153	1.180	1.209	-1.23%	0.73%	0.46%
Turkey	0.967	1.346	1.530	1.683	1.792	1.872	1.970	2.064	4.70%	1.59%	0.95%
United Kingdom	3.376	3.337	2.644	2.717	2.783	2.786	2.809	2.776	-2.41%	0.51%	-0.02%
Other Europe	2.324	2.192	1.888	2.015	2.126	2.180	2.196	2.177	-2.06%	1.20%	0.16%
Eurasia	**21.786**	**21.616**	**21.674**	**22.932**	**24.223**	**24.916**	**25.228**	**25.491**	**-0.05%**	**1.12%**	**0.34%**
Kazakhstan	0.477	0.303	0.474	0.557	0.640	0.693	0.732	0.767	-0.05%	3.04%	1.22%
Russia	14.330	15.471	15.276	15.683	16.175	16.292	16.216	16.057	0.64%	0.57%	-0.05%
Turkmenistan	0.629	0.720	0.765	0.929	1.094	1.233	1.352	1.457	1.99%	3.64%	1.93%
Ukraine	3.079	1.969	1.677	1.766	1.844	1.885	1.889	1.867	-5.90%	0.96%	0.08%
Uzbekistan	1.702	1.614	1.890	2.276	2.621	2.886	3.091	3.398	1.05%	3.32%	1.75%
Other Eurasia	1.569	1.538	1.592	1.721	1.850	1.927	1.947	1.944	0.15%	1.51%	0.33%
Middle East	**9.825**	**13.379**	**14.477**	**15.520**	**17.082**	**18.361**	**19.528**	**20.567**	**3.95%**	**1.67%**	**1.25%**
Iran	3.707	5.106	5.243	5.489	5.926	6.308	6.606	6.921	3.53%	1.23%	1.04%
Qatar	0.660	0.796	1.102	1.142	1.227	1.286	1.316	1.335	5.26%	1.08%	0.56%
Oman	0.324	0.620	0.710	0.781	0.861	0.908	0.946	0.978	8.17%	1.94%	0.85%
Saudi Arabia	2.516	3.096	3.509	3.893	4.419	4.849	5.206	5.481	3.38%	2.33%	1.45%
United Arab Emirates	1.457	2.147	2.203	2.296	2.464	2.554	2.703	2.812	4.22%	1.13%	0.88%
Other Middle East	1.160	1.614	1.709	1.920	2.185	2.457	2.752	3.042	3.95%	2.49%	2.23%
Africa	**2.979**	**3.535**	**3.897**	**4.603**	**5.561**	**6.600**	**7.750**	**8.915**	**2.72%**	**3.62%**	**3.20%**
Algeria	0.846	1.024	1.087	1.229	1.427	1.593	1.709	1.788	2.53%	2.76%	1.52%
Egypt	1.208	1.630	1.795	2.032	2.357	2.743	3.291	3.855	4.04%	2.76%	3.33%
Nigeria	0.366	0.178	0.260	0.367	0.534	0.723	0.911	1.141	-3.34%	7.44%	5.20%
Other Africa	0.559	0.702	0.755	0.976	1.243	1.540	1.838	2.131	3.05%	5.12%	3.66%
Asia & Oceania	**13.741**	**20.677**	**24.177**	**30.415**	**35.682**	**39.881**	**43.285**	**44.296**	**5.81%**	**3.97%**	**1.45%**
Australia	1.014	1.249	1.546	1.811	1.919	2.001	2.082	2.172	4.31%	2.18%	0.83%
China	1.655	3.769	6.019	8.774	11.697	14.122	16.023	16.926	13.78%	6.87%	2.49%
India	1.269	2.277	1.959	2.689	3.280	3.910	4.450	4.657	4.43%	5.29%	2.36%
Indonesia	0.638	1.397	1.384	1.658	1.991	2.387	2.745	3.034	8.05%	3.70%	2.85%
Japan	3.110	3.861	4.236	4.467	4.365	4.164	4.064	3.855	3.14%	0.30%	-0.82%
Malaysia	0.914	1.145	1.084	1.286	1.417	1.499	1.527	1.522	1.72%	2.72%	0.47%
Myanmar	0.146	0.114	0.119	0.165	0.216	0.277	0.340	0.371	-2.03%	6.13%	3.66%
Pakistan	1.088	1.400	1.332	1.677	2.020	2.210	2.348	2.438	2.04%	4.26%	1.26%
Singapore	0.233	0.297	0.370	0.409	0.417	0.414	0.405	0.390	4.72%	1.19%	-0.45%
South Korea	1.076	1.524	1.966	2.376	2.591	2.646	2.651	2.565	6.21%	2.80%	-0.07%
Thailand	1.150	1.592	1.838	2.130	2.299	2.365	2.483	2.330	4.80%	2.26%	0.09%
Other Asia & Oceania	1.447	2.051	2.324	2.974	3.469	3.886	4.168	4.036	4.85%	4.09%	1.01%
World	**99.448**	**113.816**	**120.451**	**132.751**	**144.875**	**153.178**	**160.375**	**164.870**	**1.93%**	**1.86%**	**0.87%**

LNG12_Hi-D Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.844**	**35.640**	**38.346**	**39.597**	**40.486**	**41.375**	**2.05%**	**1.56%**	**0.51%**
Canada	3.144	2.815	3.130	3.374	3.515	3.580	3.663	3.713	-0.05%	1.17%	0.37%
Mexico	1.656	2.286	2.485	2.639	2.858	3.085	3.310	3.532	4.14%	1.41%	1.42%
United States	22.014	24.087	27.230	29.627	31.972	32.932	33.513	34.131	2.15%	1.62%	0.44%
Central & South America	**4.208**	**4.897**	**5.728**	**6.179**	**6.885**	**7.462**	**7.875**	**8.189**	**3.13%**	**1.86%**	**1.16%**
Argentina	1.428	1.529	1.612	1.864	2.035	2.174	2.289	2.390	1.22%	2.36%	1.08%
Brazil	0.657	0.890	1.157	1.349	1.556	1.745	1.887	2.009	5.82%	3.01%	1.72%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.402	0.427	-2.40%	3.71%	1.67%
Colombia	0.236	0.321	0.393	0.403	0.445	0.493	0.523	0.562	5.25%	1.25%	1.56%
Peru	0.056	0.194	0.220	0.233	0.264	0.291	0.314	0.331	14.69%	1.87%	1.52%
Trinidad and Tobago	0.575	0.824	0.752	0.765	0.779	0.760	0.740	0.705	2.72%	0.36%	-0.66%
Venezuela	0.828	0.748	1.102	0.982	1.132	1.239	1.301	1.338	2.90%	0.27%	1.12%
Other Central & South America	0.135	0.205	0.263	0.293	0.341	0.390	0.420	0.428	6.93%	2.63%	1.53%
Europe	**20.095**	**20.525**	**17.967**	**18.614**	**19.111**	**19.231**	**19.274**	**19.083**	**-1.11%**	**0.62%**	**-0.01%**
Austria	0.354	0.353	0.286	0.294	0.305	0.311	0.315	0.314	-2.11%	0.66%	0.20%
Belgium	0.601	0.700	0.612	0.651	0.689	0.717	0.729	0.731	0.18%	1.19%	0.40%
France	1.740	1.695	1.421	1.417	1.396	1.328	1.293	1.250	-2.01%	-0.18%	-0.73%
Germany	3.203	3.329	3.057	3.094	3.138	3.146	3.085	2.984	-0.46%	0.26%	-0.34%
Italy	3.046	2.935	2.322	2.337	2.349	2.344	2.341	2.319	-2.68%	0.11%	-0.09%
Netherlands	1.741	1.937	1.717	1.740	1.734	1.682	1.636	1.579	-0.14%	0.10%	-0.62%
Norway	0.187	0.194	0.225	0.248	0.264	0.256	0.239	0.227	1.86%	1.62%	-1.00%
Poland	0.573	0.606	0.618	0.682	0.734	0.769	0.785	0.784	0.75%	1.74%	0.44%
Portugal	0.152	0.182	0.145	0.152	0.158	0.161	0.167	0.168	-0.46%	0.83%	0.41%
Romania	0.643	0.455	0.454	0.493	0.519	0.528	0.533	0.518	-3.42%	1.34%	0.00%
Spain	1.188	1.265	1.050	1.092	1.129	1.152	1.181	1.208	-1.23%	0.73%	0.45%
Turkey	0.967	1.346	1.530	1.683	1.790	1.871	1.965	2.056	4.70%	1.58%	0.93%
United Kingdom	3.376	3.337	2.644	2.716	2.782	2.786	2.812	2.772	-2.41%	0.51%	-0.02%
Other Europe	2.324	2.192	1.887	2.015	2.125	2.179	2.195	2.173	-2.06%	1.19%	0.15%
Eurasia	**21.786**	**21.616**	**21.673**	**22.937**	**24.203**	**24.908**	**25.223**	**25.456**	**-0.05%**	**1.11%**	**0.34%**
Kazakhstan	0.477	0.303	0.474	0.557	0.638	0.693	0.734	0.768	-0.05%	3.01%	1.24%
Russia	14.330	15.471	15.276	15.688	16.160	16.288	16.215	16.035	0.64%	0.56%	-0.05%
Turkmenistan	0.629	0.720	0.765	0.928	1.092	1.229	1.350	1.453	1.98%	3.62%	1.92%
Ukraine	3.079	1.969	1.676	1.766	1.845	1.886	1.888	1.864	-5.90%	0.96%	0.07%
Uzbekistan	1.702	1.614	1.890	2.276	2.618	2.885	3.091	3.395	1.05%	3.32%	1.75%
Other Eurasia	1.569	1.538	1.592	1.722	1.850	1.927	1.945	1.942	0.15%	1.51%	0.32%
Middle East	**9.825**	**13.379**	**14.481**	**15.520**	**17.080**	**18.356**	**19.519**	**20.574**	**3.96%**	**1.66%**	**1.25%**
Iran	3.707	5.106	5.244	5.489	5.925	6.304	6.605	6.947	3.53%	1.23%	1.07%
Qatar	0.660	0.796	1.102	1.142	1.227	1.286	1.316	1.325	5.26%	1.08%	0.52%
Oman	0.324	0.620	0.710	0.780	0.860	0.908	0.948	0.976	8.17%	1.93%	0.85%
Saudi Arabia	2.516	3.096	3.510	3.893	4.419	4.845	5.203	5.465	3.39%	2.33%	1.43%
United Arab Emirates	1.457	2.147	2.203	2.296	2.464	2.553	2.699	2.837	4.22%	1.13%	0.94%
Other Middle East	1.160	1.614	1.711	1.920	2.184	2.461	2.748	3.023	3.96%	2.47%	2.19%
Africa	**2.979**	**3.535**	**3.896**	**4.602**	**5.563**	**6.591**	**7.737**	**8.889**	**2.72%**	**3.62%**	**3.17%**
Algeria	0.846	1.024	1.087	1.228	1.426	1.592	1.708	1.786	2.53%	2.75%	1.51%
Egypt	1.208	1.630	1.795	2.033	2.354	2.741	3.292	3.858	4.04%	2.75%	3.35%
Nigeria	0.366	0.178	0.260	0.366	0.540	0.717	0.903	1.112	-3.36%	7.58%	4.94%
Other Africa	0.559	0.702	0.755	0.976	1.244	1.541	1.834	2.133	3.05%	5.12%	3.66%
Asia & Oceania	**13.741**	**20.677**	**24.177**	**30.436**	**35.705**	**39.945**	**43.380**	**44.314**	**5.81%**	**3.98%**	**1.45%**
Australia	1.014	1.249	1.546	1.810	1.921	2.000	2.077	2.163	4.31%	2.19%	0.79%
China	1.655	3.769	6.019	8.786	11.698	14.167	16.061	16.951	13.79%	6.87%	2.50%
India	1.269	2.277	1.959	2.689	3.281	3.916	4.469	4.666	4.44%	5.29%	2.38%
Indonesia	0.638	1.397	1.384	1.658	1.993	2.385	2.746	3.033	8.04%	3.71%	2.84%
Japan	3.110	3.861	4.236	4.471	4.365	4.169	4.075	3.861	3.14%	0.30%	-0.82%
Malaysia	0.914	1.145	1.084	1.287	1.418	1.501	1.529	1.517	1.72%	2.72%	0.45%
Myanmar	0.146	0.114	0.119	0.165	0.216	0.277	0.339	0.371	-2.02%	6.15%	3.66%
Pakistan	1.088	1.400	1.332	1.678	2.034	2.219	2.360	2.444	2.04%	4.33%	1.23%
Singapore	0.233	0.297	0.370	0.409	0.417	0.414	0.405	0.390	4.72%	1.20%	-0.44%
South Korea	1.076	1.524	1.966	2.379	2.590	2.650	2.658	2.570	6.21%	2.80%	-0.05%
Thailand	1.150	1.592	1.838	2.130	2.301	2.366	2.482	2.316	4.80%	2.27%	0.04%
Other Asia & Oceania	1.447	2.051	2.324	2.975	3.472	3.882	4.178	4.033	4.85%	4.10%	1.00%
World	**99.448**	**113.816**	**120.767**	**133.929**	**146.892**	**156.090**	**163.494**	**167.880**	**1.96%**	**1.98%**	**0.89%**

LNG20_Ref Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.700**	**34.667**	**36.600**	**37.238**	**38.118**	**39.053**	**2.00%**	**1.13%**	**0.43%**
Canada	3.144	2.815	3.129	3.368	3.511	3.579	3.641	3.692	-0.05%	1.16%	0.34%
Mexico	1.656	2.286	2.485	2.641	2.859	3.098	3.329	3.519	4.14%	1.41%	1.40%
United States	22.014	24.087	27.086	28.658	30.229	30.561	31.148	31.841	2.10%	1.10%	0.35%
Central & South America	**4.208**	**4.897**	**5.729**	**6.182**	**6.887**	**7.453**	**7.856**	**8.182**	**3.13%**	**1.86%**	**1.16%**
Argentina	1.428	1.529	1.612	1.863	2.037	2.175	2.288	2.386	1.22%	2.37%	1.06%
Brazil	0.657	0.890	1.157	1.349	1.557	1.745	1.885	2.006	5.82%	3.01%	1.71%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.401	0.426	-2.40%	3.73%	1.66%
Colombia	0.236	0.321	0.393	0.402	0.446	0.491	0.521	0.561	5.25%	1.28%	1.53%
Peru	0.056	0.194	0.220	0.234	0.264	0.291	0.314	0.333	14.72%	1.81%	1.58%
Trinidad and Tobago	0.575	0.824	0.752	0.770	0.778	0.759	0.738	0.712	2.72%	0.35%	-0.59%
Venezuela	0.828	0.748	1.102	0.980	1.133	1.236	1.297	1.331	2.90%	0.28%	1.08%
Other Central & South America	0.135	0.205	0.263	0.293	0.340	0.386	0.411	0.427	6.93%	2.59%	1.54%
Europe	**20.095**	**20.525**	**17.964**	**18.599**	**19.088**	**19.214**	**19.265**	**19.038**	**-1.11%**	**0.61%**	**-0.02%**
Austria	0.354	0.353	0.286	0.294	0.305	0.311	0.315	0.314	-2.11%	0.65%	0.21%
Belgium	0.601	0.700	0.612	0.651	0.688	0.717	0.729	0.729	0.18%	1.18%	0.39%
France	1.740	1.695	1.421	1.415	1.387	1.327	1.292	1.244	-2.01%	-0.24%	-0.72%
Germany	3.203	3.329	3.057	3.090	3.133	3.145	3.086	2.986	-0.46%	0.25%	-0.32%
Italy	3.046	2.935	2.322	2.334	2.348	2.341	2.335	2.317	-2.68%	0.11%	-0.09%
Netherlands	1.741	1.937	1.717	1.741	1.733	1.681	1.635	1.576	-0.14%	0.09%	-0.63%
Norway	0.187	0.194	0.225	0.248	0.264	0.254	0.239	0.224	1.85%	1.64%	-1.11%
Poland	0.573	0.606	0.617	0.684	0.737	0.771	0.786	0.786	0.74%	1.79%	0.42%
Portugal	0.152	0.182	0.145	0.152	0.157	0.161	0.166	0.167	-0.46%	0.82%	0.41%
Romania	0.643	0.455	0.454	0.493	0.519	0.528	0.532	0.519	-3.41%	1.34%	0.01%
Spain	1.188	1.265	1.050	1.092	1.127	1.151	1.180	1.207	-1.23%	0.72%	0.46%
Turkey	0.967	1.346	1.526	1.676	1.785	1.864	1.965	2.055	4.67%	1.58%	0.94%
United Kingdom	3.376	3.337	2.645	2.717	2.779	2.783	2.809	2.744	-2.41%	0.50%	-0.09%
Other Europe	2.324	2.192	1.887	2.013	2.125	2.179	2.197	2.170	-2.06%	1.19%	0.14%
Eurasia	**21.786**	**21.616**	**21.673**	**22.926**	**24.191**	**24.845**	**25.151**	**25.360**	**-0.05%**	**1.10%**	**0.32%**
Kazakhstan	0.477	0.303	0.474	0.555	0.638	0.690	0.730	0.764	-0.05%	3.00%	1.21%
Russia	14.330	15.471	15.275	15.678	16.140	16.232	16.148	15.945	0.64%	0.55%	-0.08%
Turkmenistan	0.629	0.720	0.765	0.927	1.091	1.223	1.345	1.448	1.98%	3.61%	1.91%
Ukraine	3.079	1.969	1.677	1.764	1.844	1.885	1.889	1.867	-5.90%	0.96%	0.08%
Uzbekistan	1.702	1.614	1.890	2.277	2.624	2.887	3.093	3.393	1.05%	3.34%	1.73%
Other Eurasia	1.569	1.538	1.592	1.724	1.855	1.928	1.946	1.943	0.15%	1.54%	0.31%
Middle East	**9.825**	**13.379**	**14.479**	**15.516**	**17.078**	**18.353**	**19.518**	**20.595**	**3.95%**	**1.66%**	**1.26%**
Iran	3.707	5.106	5.243	5.489	5.929	6.300	6.601	6.941	3.53%	1.24%	1.06%
Qatar	0.660	0.796	1.103	1.143	1.228	1.285	1.314	1.337	5.26%	1.08%	0.57%
Oman	0.324	0.620	0.710	0.780	0.858	0.908	0.946	0.979	8.17%	1.91%	0.88%
Saudi Arabia	2.516	3.096	3.510	3.893	4.420	4.848	5.201	5.465	3.39%	2.33%	1.43%
United Arab Emirates	1.457	2.147	2.202	2.296	2.456	2.551	2.708	2.834	4.22%	1.10%	0.96%
Other Middle East	1.160	1.614	1.711	1.914	2.187	2.460	2.747	3.039	3.96%	2.48%	2.22%
Africa	**2.979**	**3.535**	**3.898**	**4.609**	**5.565**	**6.603**	**7.741**	**8.855**	**2.73%**	**3.62%**	**3.15%**
Algeria	0.846	1.024	1.087	1.229	1.427	1.592	1.710	1.786	2.53%	2.76%	1.51%
Egypt	1.208	1.630	1.795	2.029	2.355	2.741	3.280	3.815	4.04%	2.75%	3.27%
Nigeria	0.366	0.178	0.262	0.375	0.539	0.725	0.923	1.142	-3.30%	7.49%	5.13%
Other Africa	0.559	0.702	0.755	0.976	1.244	1.545	1.828	2.112	3.05%	5.13%	3.59%
Asia & Oceania	**13.741**	**20.677**	**24.171**	**31.091**	**36.280**	**40.994**	**44.777**	**45.578**	**5.81%**	**4.14%**	**1.53%**
Australia	1.014	1.249	1.545	1.819	1.920	2.000	2.076	2.122	4.30%	2.20%	0.67%
China	1.655	3.769	6.021	9.098	12.089	14.897	17.222	18.183	13.79%	7.22%	2.76%
India	1.269	2.277	1.959	2.805	3.374	3.997	4.586	4.766	4.44%	5.59%	2.33%
Indonesia	0.638	1.397	1.384	1.658	1.990	2.389	2.740	3.020	8.04%	3.70%	2.82%
Japan	3.110	3.861	4.233	4.453	4.276	4.108	4.051	3.808	3.13%	0.10%	-0.77%
Malaysia	0.914	1.145	1.084	1.309	1.445	1.535	1.559	1.484	1.72%	2.92%	0.18%
Myanmar	0.146	0.114	0.119	0.164	0.215	0.281	0.337	0.360	-2.03%	6.08%	3.50%
Pakistan	1.088	1.400	1.331	1.677	2.024	2.218	2.331	2.372	2.04%	4.28%	1.06%
Singapore	0.233	0.297	0.370	0.418	0.426	0.423	0.413	0.396	4.72%	1.41%	-0.49%
South Korea	1.076	1.524	1.965	2.430	2.597	2.699	2.719	2.607	6.20%	2.83%	0.03%
Thailand	1.150	1.592	1.838	2.184	2.350	2.428	2.503	2.295	4.80%	2.49%	-0.16%
Other Asia & Oceania	1.447	2.051	2.322	3.077	3.574	4.019	4.240	4.164	4.84%	4.41%	1.02%
World	**99.448**	**113.816**	**120.615**	**133.588**	**145.688**	**154.700**	**162.426**	**166.660**	**1.95%**	**1.91%**	**0.90%**

LNG20_HRR Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.843**	**35.060**	**37.045**	**37.875**	**38.935**	**40.003**	**2.05%**	**1.21%**	**0.51%**
Canada	3.144	2.815	3.124	3.333	3.491	3.599	3.662	3.725	-0.06%	1.12%	0.43%
Mexico	1.656	2.286	2.494	2.652	2.846	3.065	3.290	3.493	4.18%	1.33%	1.37%
United States	22.014	24.087	27.224	29.075	30.708	31.210	31.983	32.786	2.15%	1.21%	0.44%
Central & South America	**4.208**	**4.897**	**5.726**	**6.180**	**6.881**	**7.445**	**7.858**	**8.208**	**3.13%**	**1.86%**	**1.18%**
Argentina	1.428	1.529	1.612	1.863	2.034	2.171	2.287	2.391	1.22%	2.36%	1.08%
Brazil	0.657	0.890	1.157	1.349	1.555	1.743	1.885	2.011	5.82%	3.00%	1.73%
Chile	0.295	0.187	0.231	0.290	0.333	0.369	0.401	0.426	-2.39%	3.71%	1.66%
Colombia	0.236	0.321	0.393	0.403	0.445	0.491	0.521	0.562	5.25%	1.26%	1.56%
Peru	0.056	0.194	0.218	0.234	0.264	0.291	0.314	0.333	14.62%	1.92%	1.56%
Trinidad and Tobago	0.575	0.824	0.750	0.768	0.777	0.758	0.739	0.707	2.70%	0.36%	-0.63%
Venezuela	0.828	0.748	1.102	0.980	1.133	1.233	1.295	1.349	2.90%	0.28%	1.17%
Other Central & South America	0.135	0.205	0.263	0.293	0.340	0.388	0.415	0.428	6.93%	2.59%	1.55%
Europe	**20.095**	**20.525**	**17.963**	**18.599**	**19.088**	**19.221**	**19.268**	**19.064**	**-1.12%**	**0.61%**	**-0.01%**
Austria	0.354	0.353	0.286	0.294	0.305	0.311	0.315	0.314	-2.11%	0.65%	0.20%
Belgium	0.601	0.700	0.612	0.651	0.688	0.717	0.729	0.730	0.18%	1.18%	0.40%
France	1.740	1.695	1.421	1.415	1.387	1.328	1.293	1.248	-2.01%	-0.24%	-0.71%
Germany	3.203	3.329	3.057	3.090	3.133	3.146	3.086	2.985	-0.46%	0.25%	-0.32%
Italy	3.046	2.935	2.322	2.334	2.348	2.341	2.336	2.316	-2.68%	0.11%	-0.09%
Netherlands	1.741	1.937	1.717	1.740	1.733	1.683	1.635	1.578	-0.14%	0.09%	-0.62%
Norway	0.187	0.194	0.225	0.251	0.264	0.255	0.237	0.226	1.87%	1.60%	-1.02%
Poland	0.573	0.606	0.617	0.684	0.737	0.772	0.786	0.785	0.74%	1.79%	0.42%
Portugal	0.152	0.182	0.145	0.152	0.157	0.161	0.167	0.167	-0.46%	0.82%	0.41%
Romania	0.643	0.455	0.454	0.493	0.519	0.528	0.532	0.519	-3.42%	1.34%	0.00%
Spain	1.188	1.265	1.050	1.092	1.127	1.152	1.181	1.207	-1.23%	0.72%	0.46%
Turkey	0.967	1.346	1.526	1.676	1.784	1.864	1.965	2.055	4.67%	1.58%	0.95%
United Kingdom	3.376	3.337	2.645	2.716	2.780	2.783	2.809	2.761	-2.41%	0.50%	-0.04%
Other Europe	2.324	2.192	1.887	2.013	2.125	2.180	2.196	2.172	-2.06%	1.20%	0.15%
Eurasia	**21.786**	**21.616**	**21.674**	**22.922**	**24.193**	**24.856**	**25.155**	**25.337**	**-0.05%**	**1.11%**	**0.31%**
Kazakhstan	0.477	0.303	0.474	0.555	0.637	0.691	0.730	0.761	-0.05%	3.00%	1.19%
Russia	14.330	15.471	15.275	15.676	16.140	16.235	16.154	15.931	0.64%	0.55%	-0.09%
Turkmenistan	0.629	0.720	0.765	0.928	1.093	1.227	1.342	1.444	1.99%	3.63%	1.87%
Ukraine	3.079	1.969	1.677	1.764	1.845	1.886	1.888	1.865	-5.90%	0.96%	0.07%
Uzbekistan	1.702	1.614	1.890	2.277	2.624	2.889	3.094	3.392	1.05%	3.33%	1.73%
Other Eurasia	1.569	1.538	1.592	1.723	1.854	1.928	1.947	1.944	0.15%	1.53%	0.32%
Middle East	**9.825**	**13.379**	**14.477**	**15.510**	**17.079**	**18.351**	**19.527**	**20.561**	**3.95%**	**1.67%**	**1.24%**
Iran	3.707	5.106	5.243	5.486	5.926	6.304	6.607	6.936	3.53%	1.23%	1.06%
Qatar	0.660	0.796	1.102	1.143	1.230	1.286	1.316	1.328	5.26%	1.10%	0.51%
Oman	0.324	0.620	0.710	0.780	0.858	0.907	0.951	0.978	8.17%	1.90%	0.88%
Saudi Arabia	2.516	3.096	3.510	3.893	4.419	4.847	5.202	5.471	3.39%	2.33%	1.43%
United Arab Emirates	1.457	2.147	2.202	2.295	2.460	2.553	2.704	2.824	4.22%	1.11%	0.92%
Other Middle East	1.160	1.614	1.708	1.913	2.186	2.455	2.747	3.024	3.94%	2.50%	2.19%
Africa	**2.979**	**3.535**	**3.897**	**4.610**	**5.569**	**6.587**	**7.721**	**8.843**	**2.72%**	**3.63%**	**3.13%**
Algeria	0.846	1.024	1.087	1.229	1.427	1.592	1.711	1.786	2.53%	2.76%	1.51%
Egypt	1.208	1.630	1.795	2.032	2.359	2.738	3.277	3.818	4.04%	2.77%	3.26%
Nigeria	0.366	0.178	0.261	0.374	0.540	0.718	0.909	1.133	-3.31%	7.52%	5.07%
Other Africa	0.559	0.702	0.755	0.975	1.244	1.539	1.825	2.105	3.05%	5.13%	3.57%
Asia & Oceania	**13.741**	**20.677**	**24.164**	**31.100**	**36.323**	**41.129**	**45.015**	**46.116**	**5.81%**	**4.16%**	**1.60%**
Australia	1.014	1.249	1.546	1.819	1.921	2.000	2.075	2.123	4.31%	2.19%	0.67%
China	1.655	3.769	6.017	9.103	12.114	14.956	17.342	18.448	13.78%	7.25%	2.84%
India	1.269	2.277	1.959	2.806	3.377	4.030	4.636	4.876	4.44%	5.60%	2.48%
Indonesia	0.638	1.397	1.384	1.659	1.989	2.388	2.736	3.026	8.04%	3.70%	2.84%
Japan	3.110	3.861	4.231	4.450	4.282	4.136	4.076	3.849	3.13%	0.12%	-0.71%
Malaysia	0.914	1.145	1.084	1.309	1.445	1.538	1.558	1.475	1.72%	2.92%	0.14%
Myanmar	0.146	0.114	0.119	0.164	0.214	0.282	0.338	0.363	-2.03%	6.02%	3.59%
Pakistan	1.088	1.400	1.332	1.678	2.031	2.209	2.360	2.425	2.04%	4.31%	1.19%
Singapore	0.233	0.297	0.370	0.418	0.426	0.424	0.413	0.398	4.72%	1.41%	-0.45%
South Korea	1.076	1.524	1.963	2.428	2.601	2.712	2.737	2.643	6.19%	2.85%	0.11%
Thailand	1.150	1.592	1.838	2.184	2.351	2.429	2.508	2.293	4.80%	2.49%	-0.17%
Other Asia & Oceania	1.447	2.051	2.321	3.081	3.573	4.025	4.236	4.197	4.84%	4.41%	1.08%
World	**99.448**	**113.816**	**120.744**	**133.981**	**146.177**	**155.464**	**163.478**	**168.131**	**1.96%**	**1.93%**	**0.94%**

LNG20_LRR Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.504**	**34.433**	**36.244**	**36.627**	**37.308**	**38.071**	**1.94%**	**1.10%**	**0.33%**
Canada	3.144	2.815	3.133	3.392	3.511	3.562	3.611	3.665	-0.04%	1.15%	0.29%
Mexico	1.656	2.286	2.479	2.639	2.886	3.129	3.364	3.505	4.11%	1.53%	1.30%
United States	22.014	24.087	26.893	28.401	29.847	29.937	30.333	30.900	2.02%	1.05%	0.23%
Central & South America	**4.208**	**4.897**	**5.728**	**6.180**	**6.883**	**7.446**	**7.857**	**8.185**	**3.13%**	**1.85%**	**1.16%**
Argentina	1.428	1.529	1.612	1.864	2.036	2.174	2.289	2.384	1.22%	2.37%	1.06%
Brazil	0.657	0.890	1.157	1.350	1.556	1.744	1.886	2.005	5.82%	3.01%	1.70%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.402	0.426	-2.40%	3.72%	1.65%
Colombia	0.236	0.321	0.393	0.402	0.446	0.491	0.525	0.563	5.25%	1.27%	1.57%
Peru	0.056	0.194	0.219	0.233	0.263	0.291	0.314	0.331	14.65%	1.86%	1.53%
Trinidad and Tobago	0.575	0.824	0.752	0.769	0.776	0.758	0.735	0.707	2.73%	0.32%	-0.62%
Venezuela	0.828	0.748	1.102	0.980	1.133	1.235	1.299	1.335	2.90%	0.28%	1.10%
Other Central & South America	0.135	0.205	0.262	0.292	0.339	0.383	0.408	0.434	6.91%	2.60%	1.67%
Europe	**20.095**	**20.525**	**17.964**	**18.584**	**19.084**	**19.206**	**19.287**	**19.031**	**-1.11%**	**0.61%**	**-0.02%**
Austria	0.354	0.353	0.286	0.293	0.305	0.311	0.315	0.314	-2.11%	0.65%	0.20%
Belgium	0.601	0.700	0.612	0.650	0.688	0.717	0.730	0.729	0.18%	1.18%	0.38%
France	1.740	1.695	1.421	1.412	1.387	1.326	1.295	1.243	-2.01%	-0.24%	-0.73%
Germany	3.203	3.329	3.057	3.087	3.133	3.144	3.090	2.985	-0.46%	0.25%	-0.32%
Italy	3.046	2.935	2.322	2.333	2.348	2.339	2.336	2.316	-2.68%	0.11%	-0.09%
Netherlands	1.741	1.937	1.717	1.740	1.732	1.681	1.636	1.575	-0.14%	0.09%	-0.63%
Norway	0.187	0.194	0.225	0.251	0.265	0.254	0.239	0.226	1.87%	1.63%	-1.05%
Poland	0.573	0.606	0.617	0.684	0.737	0.771	0.787	0.785	0.74%	1.79%	0.43%
Portugal	0.152	0.182	0.145	0.152	0.157	0.161	0.166	0.167	-0.46%	0.82%	0.41%
Romania	0.643	0.455	0.454	0.492	0.519	0.527	0.532	0.519	-3.42%	1.35%	0.00%
Spain	1.188	1.265	1.050	1.091	1.127	1.150	1.181	1.206	-1.23%	0.72%	0.45%
Turkey	0.967	1.346	1.527	1.674	1.783	1.864	1.967	2.055	4.67%	1.56%	0.95%
United Kingdom	3.376	3.337	2.644	2.716	2.779	2.782	2.813	2.741	-2.41%	0.50%	-0.09%
Other Europe	2.324	2.192	1.887	2.010	2.124	2.178	2.199	2.169	-2.06%	1.19%	0.14%
Eurasia	**21.786**	**21.616**	**21.673**	**22.911**	**24.183**	**24.850**	**25.171**	**25.362**	**-0.05%**	**1.10%**	**0.32%**
Kazakhstan	0.477	0.303	0.474	0.555	0.637	0.691	0.729	0.764	-0.05%	3.00%	1.22%
Russia	14.330	15.471	15.274	15.668	16.135	16.235	16.166	15.951	0.64%	0.55%	-0.08%
Turkmenistan	0.629	0.720	0.765	0.928	1.091	1.223	1.345	1.446	1.98%	3.61%	1.90%
Ukraine	3.079	1.969	1.677	1.762	1.844	1.885	1.890	1.865	-5.90%	0.95%	0.08%
Uzbekistan	1.702	1.614	1.890	2.275	2.622	2.887	3.095	3.394	1.05%	3.33%	1.74%
Other Eurasia	1.569	1.538	1.592	1.723	1.854	1.928	1.946	1.941	0.15%	1.53%	0.31%
Middle East	**9.825**	**13.379**	**14.479**	**15.511**	**17.070**	**18.366**	**19.534**	**20.621**	**3.95%**	**1.66%**	**1.27%**
Iran	3.707	5.106	5.243	5.487	5.926	6.309	6.606	6.958	3.53%	1.23%	1.08%
Qatar	0.660	0.796	1.103	1.143	1.228	1.285	1.311	1.340	5.26%	1.08%	0.59%
Oman	0.324	0.620	0.710	0.780	0.856	0.910	0.945	0.973	8.17%	1.88%	0.86%
Saudi Arabia	2.516	3.096	3.511	3.893	4.421	4.852	5.206	5.470	3.39%	2.33%	1.43%
United Arab Emirates	1.457	2.147	2.202	2.296	2.455	2.554	2.711	2.841	4.22%	1.09%	0.98%
Other Middle East	1.160	1.614	1.710	1.912	2.184	2.456	2.755	3.038	3.96%	2.47%	2.23%
Africa	**2.979**	**3.535**	**3.898**	**4.610**	**5.567**	**6.604**	**7.733**	**8.846**	**2.73%**	**3.63%**	**3.14%**
Algeria	0.846	1.024	1.087	1.229	1.427	1.594	1.716	1.783	2.53%	2.76%	1.49%
Egypt	1.208	1.630	1.795	2.030	2.358	2.742	3.275	3.811	4.04%	2.77%	3.25%
Nigeria	0.366	0.178	0.262	0.376	0.539	0.722	0.912	1.139	-3.29%	7.49%	5.11%
Other Africa	0.559	0.702	0.755	0.975	1.242	1.547	1.829	2.113	3.05%	5.11%	3.60%
Asia & Oceania	**13.741**	**20.677**	**24.173**	**31.040**	**36.239**	**40.827**	**44.536**	**45.079**	**5.81%**	**4.13%**	**1.47%**
Australia	1.014	1.249	1.545	1.820	1.921	2.004	2.077	2.117	4.30%	2.20%	0.65%
China	1.655	3.769	6.019	9.073	12.077	14.839	17.089	17.943	13.79%	7.21%	2.67%
India	1.269	2.277	1.959	2.803	3.367	3.958	4.545	4.694	4.44%	5.56%	2.24%
Indonesia	0.638	1.397	1.384	1.658	1.989	2.388	2.755	3.034	8.04%	3.69%	2.86%
Japan	3.110	3.861	4.235	4.443	4.274	4.074	4.024	3.778	3.14%	0.09%	-0.82%
Malaysia	0.914	1.145	1.084	1.308	1.445	1.534	1.561	1.431	1.72%	2.92%	-0.07%
Myanmar	0.146	0.114	0.119	0.164	0.215	0.281	0.338	0.357	-2.04%	6.07%	3.46%
Pakistan	1.088	1.400	1.331	1.675	2.013	2.209	2.299	2.333	2.04%	4.22%	0.99%
Singapore	0.233	0.297	0.370	0.419	0.426	0.423	0.413	0.391	4.72%	1.40%	-0.56%
South Korea	1.076	1.524	1.966	2.422	2.595	2.686	2.699	2.581	6.21%	2.81%	-0.04%
Thailand	1.150	1.592	1.838	2.184	2.350	2.422	2.507	2.282	4.80%	2.49%	-0.20%
Other Asia & Oceania	1.447	2.051	2.322	3.073	3.569	4.008	4.229	4.139	4.84%	4.39%	0.99%
World	**99.448**	**113.816**	**120.419**	**133.269**	**145.269**	**153.926**	**161.427**	**165.195**	**1.93%**	**1.89%**	**0.86%**

LNG20_Hi-D Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.823**	**35.558**	**38.272**	**39.545**	**40.396**	**41.257**	**2.04%**	**1.55%**	**0.50%**
Canada	3.144	2.815	3.131	3.381	3.512	3.571	3.635	3.687	-0.04%	1.15%	0.33%
Mexico	1.656	2.286	2.483	2.634	2.869	3.101	3.349	3.512	4.13%	1.46%	1.36%
United States	22.014	24.087	27.208	29.544	31.891	32.873	33.412	34.058	2.14%	1.60%	0.44%
Central & South America	**4.208**	**4.897**	**5.727**	**6.179**	**6.882**	**7.458**	**7.865**	**8.206**	**3.13%**	**1.85%**	**1.18%**
Argentina	1.428	1.529	1.612	1.863	2.036	2.175	2.289	2.391	1.22%	2.37%	1.08%
Brazil	0.657	0.890	1.157	1.349	1.557	1.745	1.888	2.008	5.82%	3.01%	1.71%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.402	0.427	-2.40%	3.72%	1.67%
Colombia	0.236	0.321	0.393	0.402	0.445	0.494	0.523	0.561	5.25%	1.25%	1.56%
Peru	0.056	0.194	0.219	0.234	0.263	0.292	0.314	0.333	14.64%	1.88%	1.58%
Trinidad and Tobago	0.575	0.824	0.751	0.769	0.776	0.758	0.737	0.706	2.72%	0.32%	-0.63%
Venezuela	0.828	0.748	1.102	0.980	1.133	1.240	1.302	1.347	2.90%	0.28%	1.16%
Other Central & South America	0.135	0.205	0.262	0.292	0.339	0.384	0.411	0.433	6.91%	2.58%	1.65%
Europe	**20.095**	**20.525**	**17.965**	**18.602**	**19.102**	**19.223**	**19.276**	**19.067**	**-1.11%**	**0.62%**	**-0.01%**
Austria	0.354	0.353	0.286	0.294	0.305	0.311	0.315	0.314	-2.11%	0.65%	0.20%
Belgium	0.601	0.700	0.612	0.651	0.689	0.717	0.730	0.730	0.18%	1.19%	0.39%
France	1.740	1.695	1.421	1.415	1.390	1.328	1.294	1.248	-2.01%	-0.22%	-0.71%
Germany	3.203	3.329	3.057	3.091	3.136	3.147	3.088	2.987	-0.46%	0.26%	-0.32%
Italy	3.046	2.935	2.322	2.334	2.348	2.341	2.336	2.316	-2.68%	0.11%	-0.09%
Netherlands	1.741	1.937	1.717	1.741	1.734	1.682	1.636	1.578	-0.14%	0.10%	-0.63%
Norway	0.187	0.194	0.225	0.249	0.265	0.255	0.240	0.225	1.86%	1.64%	-1.08%
Poland	0.573	0.606	0.617	0.685	0.737	0.772	0.786	0.786	0.74%	1.79%	0.43%
Portugal	0.152	0.182	0.145	0.152	0.157	0.161	0.166	0.167	-0.46%	0.82%	0.41%
Romania	0.643	0.455	0.454	0.493	0.519	0.528	0.533	0.519	-3.42%	1.35%	0.00%
Spain	1.188	1.265	1.050	1.092	1.128	1.151	1.179	1.207	-1.23%	0.72%	0.45%
Turkey	0.967	1.346	1.526	1.676	1.785	1.865	1.965	2.056	4.67%	1.58%	0.95%
United Kingdom	3.376	3.337	2.644	2.716	2.782	2.785	2.812	2.761	-2.41%	0.51%	-0.05%
Other Europe	2.324	2.192	1.888	2.013	2.127	2.180	2.198	2.172	-2.06%	1.20%	0.14%
Eurasia	**21.786**	**21.616**	**21.674**	**22.935**	**24.191**	**24.847**	**25.147**	**25.365**	**-0.05%**	**1.10%**	**0.32%**
Kazakhstan	0.477	0.303	0.474	0.555	0.637	0.690	0.729	0.763	-0.05%	2.99%	1.21%
Russia	14.330	15.471	15.275	15.684	16.140	16.232	16.150	15.957	0.64%	0.55%	-0.08%
Turkmenistan	0.629	0.720	0.765	0.929	1.092	1.224	1.343	1.446	1.98%	3.62%	1.89%
Ukraine	3.079	1.969	1.677	1.764	1.845	1.886	1.888	1.863	-5.90%	0.96%	0.07%
Uzbekistan	1.702	1.614	1.890	2.278	2.623	2.887	3.092	3.393	1.05%	3.33%	1.73%
Other Eurasia	1.569	1.538	1.592	1.724	1.854	1.928	1.945	1.943	0.15%	1.53%	0.31%
Middle East	**9.825**	**13.379**	**14.477**	**15.517**	**17.077**	**18.361**	**19.524**	**20.590**	**3.95%**	**1.67%**	**1.26%**
Iran	3.707	5.106	5.243	5.491	5.930	6.310	6.609	6.921	3.53%	1.24%	1.04%
Qatar	0.660	0.796	1.102	1.142	1.229	1.285	1.313	1.324	5.26%	1.09%	0.50%
Oman	0.324	0.620	0.710	0.781	0.855	0.910	0.947	0.982	8.17%	1.88%	0.92%
Saudi Arabia	2.516	3.096	3.510	3.894	4.420	4.846	5.209	5.478	3.39%	2.33%	1.44%
United Arab Emirates	1.457	2.147	2.203	2.296	2.457	2.553	2.697	2.837	4.22%	1.10%	0.96%
Other Middle East	1.160	1.614	1.709	1.913	2.186	2.457	2.749	3.048	3.95%	2.49%	2.24%
Africa	**2.979**	**3.535**	**3.898**	**4.611**	**5.565**	**6.601**	**7.724**	**8.859**	**2.73%**	**3.62%**	**3.15%**
Algeria	0.846	1.024	1.087	1.229	1.427	1.594	1.711	1.786	2.53%	2.76%	1.51%
Egypt	1.208	1.630	1.795	2.031	2.354	2.741	3.275	3.819	4.04%	2.75%	3.28%
Nigeria	0.366	0.178	0.262	0.375	0.540	0.722	0.913	1.139	-3.29%	7.51%	5.10%
Other Africa	0.559	0.702	0.755	0.976	1.244	1.544	1.825	2.114	3.06%	5.13%	3.60%
Asia & Oceania	**13.741**	**20.677**	**24.169**	**31.088**	**36.255**	**40.926**	**44.708**	**45.330**	**5.81%**	**4.14%**	**1.50%**
Australia	1.014	1.249	1.546	1.819	1.920	2.002	2.075	2.120	4.31%	2.19%	0.66%
China	1.655	3.769	6.018	9.098	12.081	14.874	17.176	18.067	13.78%	7.22%	2.72%
India	1.269	2.277	1.959	2.804	3.373	3.981	4.574	4.719	4.44%	5.58%	2.26%
Indonesia	0.638	1.397	1.384	1.659	1.989	2.390	2.746	3.028	8.04%	3.70%	2.84%
Japan	3.110	3.861	4.233	4.452	4.275	4.096	4.043	3.794	3.13%	0.10%	-0.79%
Malaysia	0.914	1.145	1.084	1.308	1.444	1.536	1.560	1.461	1.72%	2.91%	0.08%
Myanmar	0.146	0.114	0.119	0.164	0.215	0.281	0.338	0.358	-2.03%	6.06%	3.47%
Pakistan	1.088	1.400	1.331	1.676	2.014	2.210	2.322	2.354	2.04%	4.22%	1.05%
Singapore	0.233	0.297	0.370	0.419	0.426	0.423	0.413	0.396	4.72%	1.41%	-0.49%
South Korea	1.076	1.524	1.965	2.429	2.596	2.694	2.713	2.595	6.20%	2.83%	0.00%
Thailand	1.150	1.592	1.838	2.184	2.350	2.426	2.505	2.287	4.80%	2.49%	-0.18%
Other Asia & Oceania	1.447	2.051	2.321	3.078	3.573	4.012	4.243	4.152	4.84%	4.41%	1.01%
World	**99.448**	**113.816**	**120.734**	**134.491**	**147.344**	**156.960**	**164.639**	**168.674**	**1.96%**	**2.01%**	**0.91%**

LNG20_Ref12 Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.709**	**34.699**	**36.694**	**37.271**	**38.133**	**39.053**	**2.01%**	**1.16%**	**0.42%**
Canada	3.144	2.815	3.128	3.365	3.516	3.580	3.644	3.700	-0.05%	1.17%	0.34%
Mexico	1.656	2.286	2.486	2.641	2.859	3.089	3.309	3.515	4.14%	1.41%	1.39%
United States	22.014	24.087	27.095	28.693	30.319	30.602	31.180	31.837	2.10%	1.13%	0.33%
Central & South America	**4.208**	**4.897**	**5.727**	**6.180**	**6.889**	**7.450**	**7.861**	**8.176**	**3.13%**	**1.86%**	**1.15%**
Argentina	1.428	1.529	1.612	1.863	2.036	2.175	2.288	2.388	1.22%	2.37%	1.07%
Brazil	0.657	0.890	1.157	1.349	1.557	1.745	1.885	2.006	5.82%	3.01%	1.70%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.401	0.426	-2.40%	3.72%	1.66%
Colombia	0.236	0.321	0.393	0.402	0.448	0.490	0.524	0.561	5.25%	1.31%	1.52%
Peru	0.056	0.194	0.218	0.234	0.264	0.292	0.314	0.334	14.62%	1.91%	1.58%
Trinidad and Tobago	0.575	0.824	0.752	0.769	0.779	0.759	0.738	0.702	2.73%	0.36%	-0.69%
Venezuela	0.828	0.748	1.102	0.981	1.133	1.235	1.300	1.324	2.90%	0.28%	1.04%
Other Central & South America	0.135	0.205	0.262	0.293	0.339	0.383	0.411	0.435	6.91%	2.59%	1.68%
Europe	**20.095**	**20.525**	**17.964**	**18.592**	**19.110**	**19.234**	**19.285**	**19.045**	**-1.11%**	**0.62%**	**-0.02%**
Austria	0.354	0.353	0.286	0.293	0.305	0.311	0.315	0.314	-2.11%	0.66%	0.20%
Belgium	0.601	0.700	0.612	0.650	0.689	0.718	0.730	0.730	0.18%	1.19%	0.38%
France	1.740	1.695	1.421	1.414	1.390	1.330	1.294	1.245	-2.01%	-0.22%	-0.73%
Germany	3.203	3.329	3.057	3.089	3.138	3.149	3.090	2.986	-0.46%	0.26%	-0.33%
Italy	3.046	2.935	2.322	2.334	2.349	2.342	2.336	2.316	-2.68%	0.11%	-0.09%
Netherlands	1.741	1.937	1.717	1.739	1.734	1.683	1.636	1.576	-0.14%	0.10%	-0.63%
Norway	0.187	0.194	0.225	0.250	0.264	0.255	0.238	0.227	1.87%	1.61%	-1.00%
Poland	0.573	0.606	0.617	0.684	0.738	0.772	0.788	0.786	0.74%	1.80%	0.42%
Portugal	0.152	0.182	0.145	0.152	0.157	0.161	0.166	0.167	-0.46%	0.83%	0.40%
Romania	0.643	0.455	0.454	0.493	0.519	0.528	0.533	0.519	-3.42%	1.35%	0.00%
Spain	1.188	1.265	1.050	1.091	1.129	1.152	1.180	1.206	-1.23%	0.73%	0.44%
Turkey	0.967	1.346	1.526	1.675	1.786	1.865	1.967	2.051	4.67%	1.58%	0.93%
United Kingdom	3.376	3.337	2.644	2.716	2.783	2.785	2.811	2.751	-2.41%	0.51%	-0.08%
Other Europe	2.324	2.192	1.887	2.012	2.128	2.182	2.200	2.170	-2.06%	1.21%	0.13%
Eurasia	**21.786**	**21.616**	**21.674**	**22.922**	**24.204**	**24.860**	**25.172**	**25.366**	**-0.05%**	**1.11%**	**0.31%**
Kazakhstan	0.477	0.303	0.474	0.555	0.637	0.691	0.731	0.763	-0.05%	2.99%	1.21%
Russia	14.330	15.471	15.276	15.675	16.146	16.242	16.165	15.954	0.64%	0.56%	-0.08%
Turkmenistan	0.629	0.720	0.765	0.928	1.093	1.223	1.345	1.447	1.98%	3.63%	1.89%
Ukraine	3.079	1.969	1.677	1.763	1.847	1.887	1.891	1.864	-5.90%	0.97%	0.06%
Uzbekistan	1.702	1.614	1.890	2.277	2.625	2.888	3.095	3.394	1.06%	3.34%	1.73%
Other Eurasia	1.569	1.538	1.592	1.723	1.855	1.929	1.947	1.943	0.15%	1.54%	0.31%
Middle East	**9.825**	**13.379**	**14.477**	**15.516**	**17.078**	**18.357**	**19.547**	**20.591**	**3.95%**	**1.67%**	**1.25%**
Iran	3.707	5.106	5.243	5.490	5.930	6.304	6.618	6.919	3.53%	1.24%	1.03%
Qatar	0.660	0.796	1.102	1.143	1.229	1.285	1.314	1.326	5.26%	1.09%	0.51%
Oman	0.324	0.620	0.710	0.780	0.856	0.909	0.946	0.977	8.17%	1.88%	0.89%
Saudi Arabia	2.516	3.096	3.510	3.893	4.418	4.848	5.213	5.492	3.39%	2.33%	1.46%
United Arab Emirates	1.457	2.147	2.203	2.296	2.457	2.556	2.702	2.855	4.22%	1.10%	1.01%
Other Middle East	1.160	1.614	1.709	1.914	2.188	2.456	2.755	3.022	3.95%	2.50%	2.18%
Africa	**2.979**	**3.535**	**3.897**	**4.607**	**5.565**	**6.612**	**7.728**	**8.852**	**2.72%**	**3.63%**	**3.14%**
Algeria	0.846	1.024	1.087	1.230	1.427	1.597	1.716	1.785	2.53%	2.76%	1.50%
Egypt	1.208	1.630	1.795	2.030	2.358	2.745	3.272	3.817	4.04%	2.77%	3.26%
Nigeria	0.366	0.178	0.261	0.373	0.537	0.725	0.913	1.139	-3.32%	7.49%	5.13%
Other Africa	0.559	0.702	0.755	0.975	1.243	1.546	1.827	2.110	3.05%	5.11%	3.59%
Asia & Oceania	**13.741**	**20.677**	**24.170**	**31.068**	**36.223**	**40.888**	**44.212**	**44.544**	**5.81%**	**4.13%**	**1.39%**
Australia	1.014	1.249	1.546	1.819	1.919	2.002	2.076	2.115	4.30%	2.19%	0.65%
China	1.655	3.769	6.018	9.087	12.080	14.852	16.905	17.669	13.78%	7.22%	2.57%
India	1.269	2.277	1.959	2.804	3.365	3.978	4.504	4.640	4.43%	5.56%	2.17%
Indonesia	0.638	1.397	1.384	1.658	1.988	2.388	2.765	3.039	8.05%	3.69%	2.87%
Japan	3.110	3.861	4.235	4.450	4.273	4.093	3.996	3.725	3.13%	0.09%	-0.91%
Malaysia	0.914	1.145	1.084	1.307	1.443	1.535	1.558	1.421	1.72%	2.90%	-0.10%
Myanmar	0.146	0.114	0.119	0.164	0.214	0.283	0.336	0.355	-2.04%	6.04%	3.44%
Pakistan	1.088	1.400	1.331	1.673	2.008	2.210	2.269	2.258	2.04%	4.20%	0.79%
Singapore	0.233	0.297	0.370	0.418	0.426	0.423	0.413	0.388	4.72%	1.40%	-0.61%
South Korea	1.076	1.524	1.966	2.428	2.596	2.689	2.680	2.535	6.21%	2.82%	-0.16%
Thailand	1.150	1.592	1.838	2.184	2.349	2.425	2.501	2.279	4.80%	2.48%	-0.20%
Other Asia & Oceania	1.447	2.051	2.322	3.076	3.563	4.011	4.210	4.121	4.84%	4.38%	0.97%
World	**99.448**	**113.816**	**120.619**	**133.584**	**145.762**	**154.673**	**161.938**	**165.626**	**1.95%**	**1.91%**	**0.86%**

LNG20_HRR12 Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.859**	**35.068**	**37.115**	**37.953**	**38.932**	**39.948**	**2.05%**	**1.23%**	**0.49%**
Canada	3.144	2.815	3.124	3.326	3.487	3.596	3.667	3.731	-0.06%	1.10%	0.45%
Mexico	1.656	2.286	2.496	2.648	2.851	3.057	3.267	3.443	4.18%	1.34%	1.27%
United States	22.014	24.087	27.239	29.094	30.777	31.301	31.998	32.774	2.15%	1.23%	0.42%
Central & South America	**4.208**	**4.897**	**5.729**	**6.180**	**6.884**	**7.450**	**7.852**	**8.163**	**3.13%**	**1.85%**	**1.14%**
Argentina	1.428	1.529	1.612	1.863	2.036	2.174	2.287	2.385	1.22%	2.36%	1.06%
Brazil	0.657	0.890	1.157	1.349	1.556	1.744	1.885	2.005	5.82%	3.01%	1.70%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.401	0.426	-2.40%	3.72%	1.66%
Colombia	0.236	0.321	0.393	0.402	0.446	0.491	0.521	0.559	5.25%	1.28%	1.51%
Peru	0.056	0.194	0.220	0.234	0.264	0.292	0.314	0.333	14.70%	1.84%	1.55%
Trinidad and Tobago	0.575	0.824	0.752	0.769	0.775	0.760	0.738	0.706	2.73%	0.31%	-0.62%
Venezuela	0.828	0.748	1.102	0.981	1.134	1.236	1.295	1.314	2.90%	0.29%	0.99%
Other Central & South America	0.135	0.205	0.263	0.293	0.339	0.383	0.412	0.435	6.93%	2.59%	1.66%
Europe	**20.095**	**20.525**	**17.964**	**18.591**	**19.096**	**19.214**	**19.272**	**19.080**	**-1.11%**	**0.61%**	**-0.01%**
Austria	0.354	0.353	0.286	0.293	0.305	0.311	0.315	0.315	-2.11%	0.65%	0.21%
Belgium	0.601	0.700	0.612	0.650	0.689	0.717	0.729	0.730	0.18%	1.19%	0.39%
France	1.740	1.695	1.421	1.413	1.388	1.327	1.293	1.248	-2.01%	-0.23%	-0.71%
Germany	3.203	3.329	3.057	3.089	3.135	3.145	3.088	2.992	-0.46%	0.25%	-0.31%
Italy	3.046	2.935	2.322	2.334	2.348	2.340	2.336	2.318	-2.68%	0.11%	-0.09%
Netherlands	1.741	1.937	1.717	1.740	1.733	1.682	1.636	1.576	-0.14%	0.09%	-0.63%
Norway	0.187	0.194	0.225	0.250	0.264	0.255	0.238	0.228	1.86%	1.62%	-0.99%
Poland	0.573	0.606	0.617	0.684	0.738	0.772	0.787	0.788	0.74%	1.80%	0.44%
Portugal	0.152	0.182	0.145	0.152	0.157	0.161	0.166	0.167	-0.46%	0.82%	0.41%
Romania	0.643	0.455	0.454	0.492	0.519	0.528	0.533	0.519	-3.42%	1.35%	0.00%
Spain	1.188	1.265	1.050	1.091	1.128	1.151	1.180	1.208	-1.23%	0.72%	0.46%
Turkey	0.967	1.346	1.527	1.675	1.785	1.864	1.965	2.060	4.68%	1.57%	0.96%
United Kingdom	3.376	3.337	2.645	2.716	2.780	2.782	2.809	2.754	-2.41%	0.50%	-0.06%
Other Europe	2.324	2.192	1.887	2.011	2.126	2.179	2.197	2.176	-2.06%	1.20%	0.16%
Eurasia	**21.786**	**21.616**	**21.673**	**22.918**	**24.204**	**24.849**	**25.163**	**25.411**	**-0.05%**	**1.11%**	**0.32%**
Kazakhstan	0.477	0.303	0.474	0.555	0.637	0.691	0.730	0.762	-0.05%	3.00%	1.20%
Russia	14.330	15.471	15.275	15.673	16.147	16.229	16.158	15.993	0.64%	0.56%	-0.06%
Turkmenistan	0.629	0.720	0.765	0.928	1.093	1.226	1.345	1.446	1.98%	3.63%	1.89%
Ukraine	3.079	1.969	1.677	1.764	1.846	1.887	1.888	1.865	-5.90%	0.97%	0.07%
Uzbekistan	1.702	1.614	1.890	2.276	2.625	2.888	3.095	3.399	1.05%	3.34%	1.74%
Other Eurasia	1.569	1.538	1.592	1.723	1.855	1.928	1.946	1.945	0.15%	1.54%	0.32%
Middle East	**9.825**	**13.379**	**14.480**	**15.510**	**17.078**	**18.356**	**19.487**	**20.625**	**3.96%**	**1.66%**	**1.27%**
Iran	3.707	5.106	5.244	5.485	5.924	6.301	6.579	6.967	3.53%	1.23%	1.09%
Qatar	0.660	0.796	1.102	1.143	1.228	1.286	1.310	1.332	5.26%	1.09%	0.54%
Oman	0.324	0.620	0.710	0.780	0.858	0.908	0.943	0.976	8.17%	1.91%	0.86%
Saudi Arabia	2.516	3.096	3.511	3.893	4.423	4.850	5.200	5.473	3.39%	2.34%	1.43%
United Arab Emirates	1.457	2.147	2.203	2.296	2.457	2.555	2.709	2.832	4.22%	1.10%	0.95%
Other Middle East	1.160	1.614	1.710	1.913	2.186	2.456	2.746	3.046	3.95%	2.49%	2.23%
Africa	**2.979**	**3.535**	**3.897**	**4.607**	**5.562**	**6.606**	**7.745**	**8.868**	**2.72%**	**3.62%**	**3.16%**
Algeria	0.846	1.024	1.087	1.229	1.426	1.592	1.716	1.788	2.53%	2.76%	1.52%
Egypt	1.208	1.630	1.795	2.030	2.357	2.742	3.270	3.818	4.04%	2.76%	3.27%
Nigeria	0.366	0.178	0.261	0.373	0.536	0.725	0.924	1.140	-3.32%	7.46%	5.15%
Other Africa	0.559	0.702	0.755	0.975	1.242	1.546	1.834	2.122	3.05%	5.11%	3.64%
Asia & Oceania	**13.741**	**20.677**	**24.167**	**31.065**	**36.256**	**40.863**	**44.207**	**44.544**	**5.81%**	**4.14%**	**1.38%**
Australia	1.014	1.249	1.545	1.819	1.918	2.003	2.076	2.114	4.30%	2.19%	0.65%
China	1.655	3.769	6.016	9.089	12.101	14.842	16.894	17.667	13.78%	7.24%	2.55%
India	1.269	2.277	1.959	2.803	3.368	3.975	4.504	4.640	4.43%	5.57%	2.16%
Indonesia	0.638	1.397	1.384	1.658	1.989	2.387	2.767	3.039	8.04%	3.69%	2.87%
Japan	3.110	3.861	4.234	4.449	4.279	4.091	3.995	3.724	3.13%	0.11%	-0.92%
Malaysia	0.914	1.145	1.084	1.308	1.443	1.534	1.559	1.423	1.72%	2.90%	-0.09%
Myanmar	0.146	0.114	0.119	0.164	0.214	0.283	0.336	0.355	-2.04%	6.02%	3.45%
Pakistan	1.088	1.400	1.331	1.672	2.006	2.205	2.269	2.259	2.04%	4.19%	0.79%
Singapore	0.233	0.297	0.370	0.418	0.426	0.423	0.413	0.388	4.72%	1.40%	-0.61%
South Korea	1.076	1.524	1.965	2.427	2.601	2.689	2.680	2.535	6.21%	2.84%	-0.17%
Thailand	1.150	1.592	1.838	2.184	2.349	2.423	2.503	2.278	4.80%	2.48%	-0.20%
Other Asia & Oceania	1.447	2.051	2.322	3.074	3.564	4.009	4.213	4.121	4.84%	4.38%	0.97%
World	**99.448**	**113.816**	**120.771**	**133.940**	**146.194**	**155.291**	**162.658**	**166.638**	**1.96%**	**1.93%**	**0.88%**

LNG20_LRR12 Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.515**	**34.438**	**36.283**	**36.655**	**37.338**	**38.064**	**1.95%**	**1.10%**	**0.32%**
Canada	3.144	2.815	3.131	3.390	3.510	3.565	3.616	3.665	-0.04%	1.15%	0.29%
Mexico	1.656	2.286	2.478	2.636	2.884	3.129	3.361	3.511	4.11%	1.53%	1.32%
United States	22.014	24.087	26.906	28.412	29.889	29.961	30.360	30.887	2.03%	1.06%	0.22%
Central & South America	**4.208**	**4.897**	**5.729**	**6.177**	**6.884**	**7.449**	**7.849**	**8.178**	**3.13%**	**1.85%**	**1.16%**
Argentina	1.428	1.529	1.612	1.862	2.036	2.175	2.288	2.385	1.22%	2.37%	1.06%
Brazil	0.657	0.890	1.157	1.349	1.556	1.746	1.886	2.005	5.82%	3.01%	1.70%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.401	0.426	-2.39%	3.71%	1.65%
Colombia	0.236	0.321	0.393	0.403	0.447	0.489	0.522	0.560	5.25%	1.30%	1.52%
Peru	0.056	0.194	0.220	0.233	0.264	0.292	0.311	0.332	14.70%	1.85%	1.53%
Trinidad and Tobago	0.575	0.824	0.752	0.768	0.775	0.758	0.737	0.703	2.73%	0.31%	-0.65%
Venezuela	0.828	0.748	1.102	0.980	1.133	1.234	1.292	1.336	2.90%	0.28%	1.11%
Other Central & South America	0.135	0.205	0.263	0.293	0.339	0.384	0.411	0.432	6.93%	2.58%	1.62%
Europe	**20.095**	**20.525**	**17.965**	**18.581**	**19.102**	**19.209**	**19.290**	**19.044**	**-1.11%**	**0.62%**	**-0.02%**
Austria	0.354	0.353	0.286	0.293	0.305	0.311	0.315	0.314	-2.11%	0.66%	0.20%
Belgium	0.601	0.700	0.612	0.650	0.689	0.717	0.730	0.729	0.18%	1.19%	0.38%
France	1.740	1.695	1.421	1.411	1.389	1.326	1.296	1.244	-2.01%	-0.22%	-0.73%
Germany	3.203	3.329	3.057	3.087	3.136	3.145	3.090	2.988	-0.46%	0.26%	-0.32%
Italy	3.046	2.935	2.322	2.332	2.349	2.339	2.336	2.317	-2.68%	0.11%	-0.09%
Netherlands	1.741	1.937	1.717	1.740	1.733	1.681	1.636	1.576	-0.14%	0.09%	-0.63%
Norway	0.187	0.194	0.225	0.249	0.264	0.253	0.241	0.226	1.84%	1.62%	-1.04%
Poland	0.573	0.606	0.617	0.684	0.737	0.772	0.787	0.787	0.74%	1.79%	0.43%
Portugal	0.152	0.182	0.145	0.152	0.157	0.161	0.166	0.167	-0.46%	0.82%	0.40%
Romania	0.643	0.455	0.454	0.492	0.519	0.528	0.533	0.519	-3.42%	1.35%	0.00%
Spain	1.188	1.265	1.050	1.091	1.128	1.150	1.180	1.207	-1.23%	0.72%	0.45%
Turkey	0.967	1.346	1.527	1.674	1.786	1.864	1.967	2.058	4.67%	1.58%	0.95%
United Kingdom	3.376	3.337	2.645	2.716	2.781	2.782	2.813	2.740	-2.41%	0.50%	-0.10%
Other Europe	2.324	2.192	1.887	2.010	2.127	2.179	2.200	2.172	-2.06%	1.20%	0.14%
Eurasia	**21.786**	**21.616**	**21.675**	**22.917**	**24.196**	**24.852**	**25.164**	**25.380**	**-0.05%**	**1.11%**	**0.32%**
Kazakhstan	0.477	0.303	0.474	0.555	0.637	0.691	0.730	0.764	-0.05%	3.00%	1.22%
Russia	14.330	15.471	15.276	15.672	16.139	16.235	16.161	15.962	0.64%	0.55%	-0.07%
Turkmenistan	0.629	0.720	0.766	0.928	1.094	1.224	1.342	1.447	1.99%	3.64%	1.88%
Ukraine	3.079	1.969	1.677	1.763	1.847	1.886	1.890	1.864	-5.90%	0.97%	0.06%
Uzbekistan	1.702	1.614	1.890	2.276	2.624	2.888	3.094	3.398	1.06%	3.33%	1.74%
Other Eurasia	1.569	1.538	1.592	1.723	1.856	1.928	1.946	1.944	0.15%	1.54%	0.31%
Middle East	**9.825**	**13.379**	**14.479**	**15.514**	**17.073**	**18.360**	**19.522**	**20.633**	**3.95%**	**1.66%**	**1.27%**
Iran	3.707	5.106	5.244	5.488	5.925	6.308	6.579	6.950	3.53%	1.23%	1.07%
Qatar	0.660	0.796	1.102	1.142	1.229	1.287	1.316	1.328	5.26%	1.09%	0.52%
Oman	0.324	0.620	0.710	0.781	0.859	0.908	0.945	0.975	8.17%	1.92%	0.85%
Saudi Arabia	2.516	3.096	3.510	3.894	4.417	4.846	5.213	5.494	3.38%	2.33%	1.47%
United Arab Emirates	1.457	2.147	2.203	2.297	2.456	2.553	2.707	2.845	4.22%	1.09%	0.99%
Other Middle East	1.160	1.614	1.710	1.912	2.188	2.459	2.762	3.041	3.96%	2.49%	2.22%
Africa	**2.979**	**3.535**	**3.898**	**4.608**	**5.566**	**6.606**	**7.743**	**8.842**	**2.73%**	**3.62%**	**3.13%**
Algeria	0.846	1.024	1.087	1.230	1.428	1.594	1.717	1.785	2.53%	2.77%	1.50%
Egypt	1.208	1.630	1.795	2.028	2.357	2.742	3.277	3.814	4.04%	2.76%	3.26%
Nigeria	0.366	0.178	0.262	0.375	0.537	0.724	0.921	1.139	-3.29%	7.45%	5.14%
Other Africa	0.559	0.702	0.755	0.975	1.243	1.546	1.828	2.104	3.05%	5.12%	3.57%
Asia & Oceania	**13.741**	**20.677**	**24.171**	**31.034**	**36.202**	**40.784**	**44.220**	**44.534**	**5.81%**	**4.12%**	**1.39%**
Australia	1.014	1.249	1.545	1.820	1.920	2.002	2.078	2.125	4.30%	2.20%	0.68%
China	1.655	3.769	6.018	9.070	12.064	14.820	16.894	17.666	13.78%	7.20%	2.58%
India	1.269	2.277	1.959	2.802	3.360	3.952	4.508	4.643	4.43%	5.55%	2.18%
Indonesia	0.638	1.397	1.384	1.658	1.989	2.388	2.764	3.033	8.05%	3.69%	2.85%
Japan	3.110	3.861	4.235	4.442	4.271	4.067	3.998	3.726	3.14%	0.08%	-0.91%
Malaysia	0.914	1.145	1.083	1.308	1.444	1.533	1.558	1.409	1.72%	2.91%	-0.17%
Myanmar	0.146	0.114	0.119	0.164	0.214	0.283	0.336	0.354	-2.04%	6.03%	3.42%
Pakistan	1.088	1.400	1.331	1.673	2.007	2.208	2.273	2.259	2.04%	4.19%	0.79%
Singapore	0.233	0.297	0.370	0.419	0.426	0.423	0.413	0.385	4.72%	1.40%	-0.67%
South Korea	1.076	1.524	1.966	2.422	2.593	2.682	2.681	2.536	6.21%	2.81%	-0.15%
Thailand	1.150	1.592	1.838	2.184	2.349	2.422	2.502	2.277	4.80%	2.48%	-0.21%
Other Asia & Oceania	1.447	2.051	2.322	3.073	3.565	4.004	4.215	4.122	4.84%	4.38%	0.97%
World	**99.448**	**113.816**	**120.432**	**133.269**	**145.305**	**153.915**	**161.126**	**164.675**	**1.93%**	**1.90%**	**0.84%**

LNG20_Hi-D12 Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.842**	**35.601**	**38.311**	**39.581**	**40.421**	**41.271**	**2.05%**	**1.55%**	**0.50%**
Canada	3.144	2.815	3.131	3.378	3.511	3.574	3.637	3.689	-0.04%	1.15%	0.33%
Mexico	1.656	2.286	2.484	2.635	2.866	3.099	3.332	3.521	4.14%	1.44%	1.38%
United States	22.014	24.087	27.227	29.588	31.934	32.909	33.452	34.061	2.15%	1.61%	0.43%
Central & South America	**4.208**	**4.897**	**5.728**	**6.179**	**6.883**	**7.452**	**7.834**	**8.198**	**3.13%**	**1.85%**	**1.17%**
Argentina	1.428	1.529	1.612	1.863	2.036	2.175	2.287	2.384	1.22%	2.36%	1.06%
Brazil	0.657	0.890	1.157	1.349	1.556	1.746	1.886	2.005	5.82%	3.01%	1.70%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.401	0.426	-2.40%	3.72%	1.65%
Colombia	0.236	0.321	0.393	0.402	0.446	0.491	0.518	0.558	5.25%	1.28%	1.50%
Peru	0.056	0.194	0.219	0.234	0.264	0.291	0.313	0.333	14.64%	1.89%	1.56%
Trinidad and Tobago	0.575	0.824	0.752	0.769	0.775	0.759	0.736	0.709	2.72%	0.31%	-0.59%
Venezuela	0.828	0.748	1.102	0.979	1.133	1.236	1.284	1.352	2.90%	0.28%	1.18%
Other Central & South America	0.135	0.205	0.263	0.292	0.339	0.384	0.409	0.433	6.92%	2.59%	1.64%
Europe	**20.095**	**20.525**	**17.964**	**18.600**	**19.091**	**19.208**	**19.276**	**19.054**	**-1.11%**	**0.61%**	**-0.01%**
Austria	0.354	0.353	0.286	0.294	0.305	0.311	0.315	0.314	-2.11%	0.65%	0.21%
Belgium	0.601	0.700	0.612	0.651	0.688	0.717	0.729	0.730	0.18%	1.18%	0.39%
France	1.740	1.695	1.421	1.415	1.388	1.326	1.294	1.245	-2.01%	-0.24%	-0.72%
Germany	3.203	3.329	3.057	3.091	3.134	3.144	3.088	2.988	-0.46%	0.25%	-0.32%
Italy	3.046	2.935	2.322	2.334	2.348	2.340	2.336	2.316	-2.68%	0.11%	-0.09%
Netherlands	1.741	1.937	1.717	1.741	1.733	1.681	1.635	1.577	-0.14%	0.09%	-0.63%
Norway	0.187	0.194	0.225	0.250	0.264	0.255	0.238	0.226	1.86%	1.62%	-1.03%
Poland	0.573	0.606	0.617	0.684	0.737	0.771	0.786	0.786	0.74%	1.79%	0.43%
Portugal	0.152	0.182	0.145	0.152	0.157	0.161	0.166	0.167	-0.46%	0.82%	0.41%
Romania	0.643	0.455	0.454	0.493	0.519	0.528	0.533	0.519	-3.42%	1.34%	0.01%
Spain	1.188	1.265	1.050	1.092	1.127	1.151	1.180	1.206	-1.23%	0.72%	0.45%
Turkey	0.967	1.346	1.527	1.676	1.786	1.864	1.966	2.057	4.67%	1.58%	0.95%
United Kingdom	3.376	3.337	2.644	2.717	2.779	2.782	2.812	2.749	-2.41%	0.50%	-0.07%
Other Europe	2.324	2.192	1.887	2.013	2.125	2.178	2.198	2.173	-2.06%	1.20%	0.15%
Eurasia	**21.786**	**21.616**	**21.673**	**22.921**	**24.195**	**24.843**	**25.162**	**25.383**	**-0.05%**	**1.11%**	**0.32%**
Kazakhstan	0.477	0.303	0.474	0.555	0.638	0.691	0.730	0.763	-0.05%	3.00%	1.20%
Russia	14.330	15.471	15.275	15.674	16.140	16.227	16.157	15.967	0.64%	0.55%	-0.07%
Turkmenistan	0.629	0.720	0.765	0.927	1.092	1.225	1.346	1.448	1.98%	3.63%	1.90%
Ukraine	3.079	1.969	1.677	1.764	1.846	1.886	1.888	1.865	-5.90%	0.96%	0.07%
Uzbekistan	1.702	1.614	1.890	2.277	2.624	2.887	3.095	3.396	1.05%	3.34%	1.73%
Other Eurasia	1.569	1.538	1.592	1.724	1.855	1.927	1.946	1.944	0.15%	1.54%	0.31%
Middle East	**9.825**	**13.379**	**14.481**	**15.516**	**17.084**	**18.363**	**19.530**	**20.592**	**3.96%**	**1.67%**	**1.25%**
Iran	3.707	5.106	5.244	5.490	5.931	6.302	6.598	6.936	3.53%	1.24%	1.05%
Qatar	0.660	0.796	1.102	1.142	1.229	1.287	1.315	1.329	5.26%	1.09%	0.52%
Oman	0.324	0.620	0.710	0.781	0.856	0.910	0.947	0.973	8.17%	1.88%	0.86%
Saudi Arabia	2.516	3.096	3.511	3.892	4.422	4.853	5.211	5.479	3.39%	2.33%	1.44%
United Arab Emirates	1.457	2.147	2.203	2.297	2.457	2.554	2.704	2.840	4.22%	1.10%	0.97%
Other Middle East	1.160	1.614	1.711	1.913	2.190	2.457	2.755	3.035	3.96%	2.50%	2.20%
Africa	**2.979**	**3.535**	**3.898**	**4.611**	**5.565**	**6.603**	**7.735**	**8.845**	**2.73%**	**3.62%**	**3.14%**
Algeria	0.846	1.024	1.087	1.230	1.427	1.595	1.715	1.784	2.53%	2.76%	1.50%
Egypt	1.208	1.630	1.795	2.030	2.355	2.742	3.273	3.808	4.04%	2.75%	3.26%
Nigeria	0.366	0.178	0.262	0.376	0.540	0.722	0.918	1.143	-3.29%	7.50%	5.12%
Other Africa	0.559	0.702	0.755	0.975	1.244	1.544	1.829	2.110	3.05%	5.12%	3.59%
Asia & Oceania	**13.741**	**20.677**	**24.170**	**31.073**	**36.216**	**40.844**	**44.221**	**44.541**	**5.81%**	**4.13%**	**1.39%**
Australia	1.014	1.249	1.546	1.819	1.920	2.002	2.078	2.122	4.30%	2.19%	0.67%
China	1.655	3.769	6.017	9.091	12.071	14.836	16.905	17.672	13.78%	7.21%	2.57%
India	1.269	2.277	1.959	2.803	3.363	3.967	4.506	4.642	4.43%	5.56%	2.17%
Indonesia	0.638	1.397	1.384	1.658	1.989	2.387	2.765	3.036	8.04%	3.69%	2.86%
Japan	3.110	3.861	4.235	4.451	4.272	4.082	3.997	3.726	3.14%	0.09%	-0.91%
Malaysia	0.914	1.145	1.084	1.310	1.445	1.534	1.558	1.410	1.72%	2.92%	-0.16%
Myanmar	0.146	0.114	0.119	0.164	0.214	0.283	0.335	0.355	-2.04%	6.03%	3.44%
Pakistan	1.088	1.400	1.331	1.673	2.008	2.212	2.271	2.259	2.04%	4.20%	0.79%
Singapore	0.233	0.297	0.370	0.419	0.426	0.423	0.413	0.385	4.72%	1.41%	-0.66%
South Korea	1.076	1.524	1.966	2.429	2.595	2.686	2.681	2.536	6.21%	2.81%	-0.15%
Thailand	1.150	1.592	1.838	2.184	2.349	2.424	2.502	2.277	4.80%	2.48%	-0.21%
Other Asia & Oceania	1.447	2.051	2.322	3.075	3.566	4.008	4.210	4.120	4.84%	4.38%	0.97%
World	**99.448**	**113.816**	**120.757**	**134.502**	**147.345**	**156.895**	**164.179**	**167.884**	**1.96%**	**2.01%**	**0.87%**

LNG20_Ref20 Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.703**	**34.687**	**36.651**	**37.249**	**38.132**	**39.020**	**2.00%**	**1.15%**	**0.42%**
Canada	3.144	2.815	3.129	3.368	3.516	3.579	3.641	3.698	-0.05%	1.17%	0.34%
Mexico	1.656	2.286	2.485	2.638	2.861	3.099	3.335	3.519	4.14%	1.42%	1.39%
United States	22.014	24.087	27.088	28.681	30.275	30.570	31.155	31.804	2.10%	1.12%	0.33%
Central & South America	**4.208**	**4.897**	**5.728**	**6.181**	**6.885**	**7.446**	**7.844**	**8.188**	**3.13%**	**1.86%**	**1.16%**
Argentina	1.428	1.529	1.612	1.863	2.035	2.173	2.286	2.387	1.22%	2.36%	1.07%
Brazil	0.657	0.890	1.157	1.349	1.556	1.744	1.884	2.007	5.82%	3.01%	1.71%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.401	0.426	-2.40%	3.71%	1.66%
Colombia	0.236	0.321	0.393	0.402	0.446	0.490	0.523	0.562	5.25%	1.28%	1.56%
Peru	0.056	0.194	0.219	0.234	0.264	0.291	0.314	0.333	14.68%	1.86%	1.55%
Trinidad and Tobago	0.575	0.824	0.752	0.769	0.780	0.758	0.739	0.707	2.72%	0.37%	-0.66%
Venezuela	0.828	0.748	1.102	0.981	1.132	1.236	1.291	1.337	2.90%	0.27%	1.12%
Other Central & South America	0.135	0.205	0.262	0.292	0.340	0.385	0.407	0.430	6.91%	2.61%	1.59%
Europe	**20.095**	**20.525**	**17.965**	**18.599**	**19.094**	**19.229**	**19.270**	**19.088**	**-1.11%**	**0.61%**	**0.00%**
Austria	0.354	0.353	0.286	0.293	0.305	0.311	0.315	0.315	-2.11%	0.65%	0.21%
Belgium	0.601	0.700	0.612	0.651	0.689	0.717	0.729	0.731	0.18%	1.18%	0.40%
France	1.740	1.695	1.421	1.415	1.388	1.329	1.293	1.251	-2.01%	-0.23%	-0.69%
Germany	3.203	3.329	3.057	3.091	3.135	3.148	3.087	2.991	-0.46%	0.25%	-0.31%
Italy	3.046	2.935	2.322	2.334	2.348	2.342	2.335	2.318	-2.68%	0.11%	-0.08%
Netherlands	1.741	1.937	1.717	1.741	1.733	1.682	1.635	1.579	-0.14%	0.09%	-0.62%
Norway	0.187	0.194	0.225	0.249	0.264	0.255	0.238	0.224	1.84%	1.63%	-1.09%
Poland	0.573	0.606	0.617	0.684	0.737	0.772	0.786	0.788	0.74%	1.79%	0.44%
Portugal	0.152	0.182	0.145	0.152	0.157	0.161	0.166	0.167	-0.46%	0.82%	0.41%
Romania	0.643	0.455	0.454	0.492	0.519	0.528	0.533	0.519	-3.42%	1.35%	0.01%
Spain	1.188	1.265	1.050	1.092	1.128	1.152	1.179	1.208	-1.23%	0.72%	0.46%
Turkey	0.967	1.346	1.526	1.676	1.784	1.865	1.966	2.056	4.67%	1.58%	0.95%
United Kingdom	3.376	3.337	2.645	2.717	2.781	2.784	2.810	2.767	-2.41%	0.50%	-0.03%
Other Europe	2.324	2.192	1.887	2.013	2.126	2.181	2.197	2.176	-2.06%	1.20%	0.15%
Eurasia	**21.786**	**21.616**	**21.675**	**22.924**	**24.192**	**24.857**	**25.156**	**25.384**	**-0.05%**	**1.10%**	**0.32%**
Kazakhstan	0.477	0.303	0.474	0.555	0.637	0.691	0.730	0.764	-0.05%	2.99%	1.22%
Russia	14.330	15.471	15.275	15.677	16.139	16.237	16.155	15.965	0.64%	0.55%	-0.07%
Turkmenistan	0.629	0.720	0.766	0.929	1.094	1.225	1.340	1.446	1.99%	3.63%	1.88%
Ukraine	3.079	1.969	1.677	1.764	1.846	1.886	1.890	1.866	-5.90%	0.96%	0.07%
Uzbekistan	1.702	1.614	1.890	2.276	2.623	2.890	3.093	3.398	1.06%	3.33%	1.74%
Other Eurasia	1.569	1.538	1.592	1.723	1.854	1.929	1.948	1.944	0.15%	1.53%	0.32%
Middle East	**9.825**	**13.379**	**14.478**	**15.511**	**17.073**	**18.348**	**19.491**	**20.626**	**3.95%**	**1.66%**	**1.27%**
Iran	3.707	5.106	5.243	5.486	5.923	6.302	6.589	6.952	3.53%	1.23%	1.07%
Qatar	0.660	0.796	1.103	1.143	1.229	1.286	1.313	1.332	5.26%	1.09%	0.54%
Oman	0.324	0.620	0.710	0.780	0.858	0.907	0.941	0.989	8.17%	1.91%	0.95%
Saudi Arabia	2.516	3.096	3.510	3.893	4.419	4.846	5.198	5.460	3.39%	2.33%	1.42%
United Arab Emirates	1.457	2.147	2.202	2.295	2.457	2.550	2.696	2.855	4.22%	1.10%	1.00%
Other Middle East	1.160	1.614	1.709	1.913	2.187	2.456	2.754	3.038	3.95%	2.49%	2.21%
Africa	**2.979**	**3.535**	**3.897**	**4.609**	**5.567**	**6.602**	**7.726**	**8.861**	**2.72%**	**3.63%**	**3.15%**
Algeria	0.846	1.024	1.087	1.229	1.426	1.595	1.711	1.788	2.53%	2.76%	1.52%
Egypt	1.208	1.630	1.795	2.031	2.357	2.744	3.274	3.820	4.04%	2.76%	3.27%
Nigeria	0.366	0.178	0.261	0.373	0.541	0.719	0.915	1.138	-3.32%	7.57%	5.08%
Other Africa	0.559	0.702	0.755	0.975	1.242	1.544	1.825	2.115	3.05%	5.11%	3.61%
Asia & Oceania	**13.741**	**20.677**	**24.172**	**31.083**	**36.276**	**40.944**	**44.760**	**45.208**	**5.81%**	**4.14%**	**1.48%**
Australia	1.014	1.249	1.546	1.818	1.921	2.003	2.081	2.121	4.31%	2.19%	0.66%
China	1.655	3.769	6.019	9.096	12.088	14.885	17.195	18.000	13.78%	7.22%	2.69%
India	1.269	2.277	1.959	2.803	3.372	3.990	4.578	4.700	4.44%	5.58%	2.24%
Indonesia	0.638	1.397	1.384	1.658	1.989	2.388	2.746	3.033	8.04%	3.69%	2.85%
Japan	3.110	3.861	4.234	4.452	4.276	4.103	4.047	3.785	3.13%	0.10%	-0.81%
Malaysia	0.914	1.145	1.084	1.309	1.446	1.535	1.561	1.455	1.72%	2.92%	0.04%
Myanmar	0.146	0.114	0.119	0.164	0.215	0.280	0.337	0.359	-2.03%	6.07%	3.49%
Pakistan	1.088	1.400	1.331	1.675	2.022	2.205	2.326	2.343	2.04%	4.27%	0.99%
Singapore	0.233	0.297	0.370	0.419	0.426	0.423	0.413	0.395	4.72%	1.41%	-0.49%
South Korea	1.076	1.524	1.965	2.429	2.597	2.697	2.715	2.587	6.21%	2.83%	-0.03%
Thailand	1.150	1.592	1.838	2.184	2.351	2.424	2.508	2.286	4.80%	2.49%	-0.19%
Other Asia & Oceania	1.447	2.051	2.322	3.077	3.573	4.013	4.253	4.145	4.84%	4.41%	0.99%
World	**99.448**	**113.816**	**120.616**	**133.593**	**145.739**	**154.675**	**162.379**	**166.376**	**1.95%**	**1.91%**	**0.89%**

LNG20_HRR20 Case (Demand)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**26.814**	**29.188**	**32.840**	**35.079**	**37.078**	**37.913**	**38.945**	**39.945**	**2.05%**	**1.22%**	**0.50%**
Canada	3.144	2.815	3.124	3.332	3.491	3.596	3.668	3.728	-0.06%	1.12%	0.44%
Mexico	1.656	2.286	2.494	2.654	2.849	3.063	3.275	3.471	4.18%	1.34%	1.32%
United States	22.014	24.087	27.221	29.092	30.738	31.254	32.002	32.746	2.15%	1.22%	0.42%
Central & South America	**4.208**	**4.897**	**5.727**	**6.181**	**6.887**	**7.452**	**7.856**	**8.219**	**3.13%**	**1.86%**	**1.19%**
Argentina	1.428	1.529	1.612	1.863	2.036	2.174	2.288	2.385	1.22%	2.37%	1.06%
Brazil	0.657	0.890	1.157	1.349	1.556	1.745	1.886	2.005	5.82%	3.01%	1.70%
Chile	0.295	0.187	0.231	0.290	0.333	0.370	0.401	0.426	-2.40%	3.72%	1.65%
Colombia	0.236	0.321	0.393	0.403	0.446	0.491	0.524	0.565	5.25%	1.27%	1.59%
Peru	0.056	0.194	0.218	0.234	0.264	0.291	0.315	0.332	14.61%	1.92%	1.55%
Trinidad and Tobago	0.575	0.824	0.752	0.769	0.778	0.758	0.738	0.707	2.73%	0.34%	-0.64%
Venezuela	0.828	0.748	1.102	0.981	1.133	1.236	1.297	1.368	2.90%	0.28%	1.26%
Other Central & South America	0.135	0.205	0.262	0.293	0.341	0.387	0.408	0.432	6.91%	2.64%	1.59%
Europe	**20.095**	**20.525**	**17.965**	**18.593**	**19.112**	**19.217**	**19.280**	**19.051**	**-1.11%**	**0.62%**	**-0.02%**
Austria	0.354	0.353	0.286	0.294	0.305	0.311	0.315	0.314	-2.11%	0.66%	0.20%
Belgium	0.601	0.700	0.612	0.650	0.689	0.717	0.730	0.730	0.18%	1.19%	0.38%
France	1.740	1.695	1.421	1.414	1.391	1.327	1.294	1.245	-2.01%	-0.21%	-0.74%
Germany	3.203	3.329	3.057	3.089	3.138	3.146	3.089	2.988	-0.46%	0.26%	-0.33%
Italy	3.046	2.935	2.322	2.334	2.349	2.341	2.335	2.316	-2.68%	0.12%	-0.09%
Netherlands	1.741	1.937	1.717	1.740	1.734	1.682	1.636	1.576	-0.14%	0.10%	-0.64%
Norway	0.187	0.194	0.225	0.249	0.265	0.253	0.240	0.225	1.85%	1.64%	-1.08%
Poland	0.573	0.606	0.617	0.684	0.738	0.772	0.787	0.787	0.75%	1.80%	0.43%
Portugal	0.152	0.182	0.145	0.152	0.157	0.161	0.166	0.167	-0.46%	0.83%	0.40%
Romania	0.643	0.455	0.454	0.493	0.519	0.528	0.533	0.519	-3.41%	1.35%	0.00%
Spain	1.188	1.265	1.050	1.091	1.129	1.152	1.178	1.207	-1.23%	0.73%	0.45%
Turkey	0.967	1.346	1.527	1.676	1.786	1.865	1.968	2.057	4.67%	1.58%	0.95%
United Kingdom	3.376	3.337	2.645	2.716	2.783	2.782	2.811	2.750	-2.41%	0.51%	-0.08%
Other Europe	2.324	2.192	1.887	2.012	2.129	2.180	2.199	2.172	-2.06%	1.21%	0.13%
Eurasia	**21.786**	**21.616**	**21.674**	**22.920**	**24.204**	**24.850**	**25.167**	**25.379**	**-0.05%**	**1.11%**	**0.32%**
Kazakhstan	0.477	0.303	0.474	0.555	0.637	0.691	0.731	0.765	-0.05%	3.00%	1.22%
Russia	14.330	15.471	15.275	15.674	16.148	16.235	16.161	15.962	0.64%	0.56%	-0.08%
Turkmenistan	0.629	0.720	0.765	0.928	1.092	1.222	1.343	1.448	1.99%	3.62%	1.90%
Ukraine	3.079	1.969	1.677	1.763	1.847	1.887	1.888	1.864	-5.90%	0.97%	0.06%
Uzbekistan	1.702	1.614	1.890	2.276	2.624	2.888	3.096	3.397	1.05%	3.34%	1.74%
Other Eurasia	1.569	1.538	1.592	1.724	1.855	1.928	1.947	1.943	0.15%	1.54%	0.31%
Middle East	**9.825**	**13.379**	**14.476**	**15.510**	**17.068**	**18.358**	**19.527**	**20.650**	**3.95%**	**1.66%**	**1.28%**
Iran	3.707	5.106	5.242	5.485	5.920	6.309	6.601	6.975	3.53%	1.22%	1.10%
Qatar	0.660	0.796	1.102	1.142	1.229	1.285	1.317	1.327	5.26%	1.09%	0.52%
Oman	0.324	0.620	0.710	0.780	0.857	0.908	0.945	0.980	8.17%	1.90%	0.90%
Saudi Arabia	2.516	3.096	3.510	3.894	4.419	4.845	5.201	5.470	3.39%	2.33%	1.43%
United Arab Emirates	1.457	2.147	2.203	2.296	2.457	2.551	2.709	2.854	4.22%	1.10%	1.00%
Other Middle East	1.160	1.614	1.708	1.913	2.186	2.460	2.754	3.044	3.94%	2.50%	2.23%
Africa	**2.979**	**3.535**	**3.897**	**4.608**	**5.569**	**6.597**	**7.717**	**8.845**	**2.72%**	**3.63%**	**3.13%**
Algeria	0.846	1.024	1.087	1.229	1.427	1.593	1.708	1.787	2.53%	2.76%	1.51%
Egypt	1.208	1.630	1.795	2.031	2.359	2.743	3.270	3.814	4.04%	2.77%	3.26%
Nigeria	0.366	0.178	0.261	0.373	0.539	0.722	0.914	1.139	-3.33%	7.53%	5.11%
Other Africa	0.559	0.702	0.755	0.975	1.244	1.539	1.825	2.105	3.05%	5.12%	3.57%
Asia & Oceania	**13.741**	**20.677**	**24.169**	**31.090**	**36.307**	**41.063**	**44.806**	**45.285**	**5.81%**	**4.15%**	**1.48%**
Australia	1.014	1.249	1.546	1.818	1.919	2.000	2.077	2.119	4.31%	2.19%	0.66%
China	1.655	3.769	6.019	9.099	12.118	14.942	17.215	18.052	13.79%	7.25%	2.69%
India	1.269	2.277	1.959	2.803	3.373	4.019	4.587	4.707	4.44%	5.59%	2.25%
Indonesia	0.638	1.397	1.384	1.658	1.990	2.386	2.745	3.028	8.04%	3.70%	2.84%
Japan	3.110	3.861	4.233	4.451	4.282	4.131	4.052	3.789	3.13%	0.11%	-0.81%
Malaysia	0.914	1.145	1.084	1.310	1.445	1.535	1.562	1.463	1.72%	2.92%	0.08%
Myanmar	0.146	0.114	0.119	0.164	0.213	0.280	0.338	0.360	-2.03%	6.01%	3.54%
Pakistan	1.088	1.400	1.331	1.676	2.016	2.199	2.331	2.350	2.04%	4.23%	1.03%
Singapore	0.233	0.297	0.370	0.418	0.426	0.423	0.413	0.395	4.72%	1.41%	-0.49%
South Korea	1.076	1.524	1.965	2.428	2.602	2.706	2.720	2.591	6.20%	2.85%	-0.03%
Thailand	1.150	1.592	1.838	2.184	2.352	2.425	2.508	2.286	4.80%	2.49%	-0.19%
Other Asia & Oceania	1.447	2.051	2.321	3.080	3.572	4.017	4.258	4.146	4.84%	4.40%	1.00%
World	**99.448**	**113.816**	**120.748**	**133.981**	**146.224**	**155.452**	**163.298**	**167.374**	**1.96%**	**1.93%**	**0.90%**

D3. Supply (tcf)[47]

Ref_Ref Case (Supply)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**34.996**	**38.740**	**41.131**	**42.312**	**43.034**	**44.467**	**2.45%**	**1.63%**	**0.52%**
Canada	7.185	5.909	5.936	7.687	8.591	8.770	8.846	9.392	-1.89%	3.77%	0.60%
Mexico	1.349	1.799	1.251	0.683	0.895	1.863	3.060	4.274	-0.74%	-3.30%	10.99%
United States	18.927	22.382	27.809	30.370	31.645	31.679	31.128	30.802	3.92%	1.30%	-0.18%
Central & South America	**5.318**	**6.267**	**6.517**	**6.700**	**7.510**	**8.125**	**8.714**	**9.087**	**2.05%**	**1.43%**	**1.28%**
Argentina	1.753	1.585	1.386	2.475	3.117	3.557	3.859	4.099	-2.32%	8.44%	1.84%
Brazil	0.432	0.570	0.762	0.338	0.158	0.097	0.048	0.024	5.84%	-14.59%	-11.91%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.051	0.075	-9.34%	-15.00%	19.79%
Colombia	0.253	0.454	0.502	0.427	0.315	0.224	0.191	0.318	7.08%	-4.55%	0.07%
Peru	0.073	0.291	0.442	0.453	0.486	0.511	0.533	0.540	19.65%	0.96%	0.70%
Trinidad and Tobago	1.094	1.512	1.448	1.270	1.362	1.382	1.539	1.526	2.84%	-0.61%	0.76%
Venezuela	1.172	1.201	1.253	1.223	1.546	1.804	1.925	1.870	0.66%	2.13%	1.27%
Other Central & South America	0.472	0.589	0.699	0.503	0.520	0.547	0.568	0.635	4.00%	-2.91%	1.34%
Europe	**11.723**	**11.155**	**9.793**	**9.983**	**10.357**	**10.230**	**10.043**	**9.740**	**-1.78%**	**0.56%**	**-0.41%**
Austria	0.061	0.064	0.041	0.028	0.030	0.018	0.011	0.007	-3.93%	-3.02%	-9.14%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.003	0.020	0.014	0.009	-14.60%	-14.47%	8.33%
Germany	0.689	0.526	0.330	0.164	0.200	0.203	0.471	0.524	-7.09%	-4.89%	6.63%
Italy	0.426	0.297	0.239	0.120	0.193	0.239	0.171	0.109	-5.63%	-2.08%	-3.76%
Netherlands	2.773	3.131	3.166	3.078	2.643	2.057	1.435	0.885	1.33%	-1.79%	-7.03%
Norway	3.196	3.849	3.705	3.979	4.284	3.958	3.350	3.199	1.49%	1.46%	-1.93%
Poland	0.214	0.215	0.191	0.215	0.312	0.663	1.037	1.591	-1.14%	5.06%	11.47%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.352	0.448	0.449	0.332	0.324	0.299	-1.60%	2.47%	-2.67%
Spain	0.006	0.002	0.001	0.001	0.000	0.007	0.010	0.060	-13.89%	-9.71%	38.07%
Turkey	0.032	0.024	0.054	0.117	0.150	0.139	0.090	0.031	5.44%	10.77%	-10.04%
United Kingdom	3.275	2.124	1.328	1.471	1.733	2.206	2.782	2.749	-8.63%	2.70%	3.13%
Other Europe	0.574	0.502	0.374	0.355	0.361	0.388	0.348	0.277	-4.20%	-0.36%	-1.75%
Eurasia	**27.386**	**27.903**	**28.402**	**30.205**	**32.584**	**34.057**	**35.381**	**36.891**	**0.36%**	**1.38%**	**0.83%**
Kazakhstan	0.428	0.441	0.631	1.038	1.338	1.476	1.490	1.605	3.96%	7.81%	1.22%
Russia	21.698	22.372	21.607	22.250	23.724	24.621	25.528	26.602	-0.04%	0.94%	0.77%
Turkmenistan	2.225	1.600	2.559	3.153	3.708	4.223	5.106	5.929	1.41%	3.78%	3.18%
Ukraine	0.685	0.684	0.604	0.292	0.280	0.552	0.817	0.943	-1.25%	-7.39%	8.42%
Uzbekistan	2.119	2.130	2.445	3.088	3.088	2.530	1.697	1.070	1.44%	2.36%	-6.82%
Other Eurasia	0.232	0.677	0.556	0.385	0.447	0.655	0.743	0.743	9.11%	-2.15%	3.45%
Middle East	**12.334**	**18.699**	**21.349**	**22.477**	**24.018**	**25.488**	**27.122**	**28.346**	**5.64%**	**1.19%**	**1.11%**
Iran	3.818	6.031	6.405	6.723	7.111	7.453	7.753	8.050	5.31%	1.05%	0.83%
Qatar	1.826	4.359	5.707	5.931	6.212	6.535	6.743	6.766	12.07%	0.85%	0.57%
Oman	0.748	1.035	1.132	1.226	1.306	1.356	1.414	1.453	4.23%	1.44%	0.71%
Saudi Arabia	2.860	3.424	3.916	4.303	4.849	5.318	5.740	6.202	3.19%	2.16%	1.65%
United Arab Emirates	1.828	1.992	2.005	1.887	1.860	1.906	2.086	2.216	0.93%	-0.75%	1.17%
Other Middle East	1.255	1.858	2.183	2.407	2.680	2.919	3.387	3.659	5.70%	2.07%	2.10%
Africa	**6.877**	**8.553**	**7.371**	**8.048**	**9.457**	**10.918**	**12.134**	**13.363**	**0.70%**	**2.52%**	**2.33%**
Algeria	3.613	3.465	3.413	3.349	3.727	4.000	4.040	3.741	-0.57%	0.89%	0.02%
Egypt	1.610	2.284	1.748	1.929	2.060	1.971	2.318	2.892	0.82%	1.66%	2.29%
Nigeria	0.862	1.317	1.172	1.105	1.472	1.950	2.342	3.101	3.13%	2.30%	5.10%
Other Africa	0.792	1.486	1.038	1.666	2.198	2.998	3.434	3.629	2.74%	7.79%	3.40%
Asia & Oceania	**12.907**	**17.527**	**19.368**	**24.557**	**28.655**	**32.515**	**36.498**	**39.742**	**4.14%**	**3.99%**	**2.20%**
Australia	1.266	1.708	3.518	5.323	6.149	6.280	6.389	6.474	10.76%	5.74%	0.34%
China	1.763	3.334	3.814	4.166	5.821	8.752	12.309	15.672	8.02%	4.32%	6.83%
India	1.153	1.848	1.179	1.943	2.316	2.556	2.347	2.297	0.22%	6.98%	-0.05%
Indonesia	2.406	3.047	2.472	3.070	3.646	4.432	5.249	6.308	0.27%	3.97%	3.72%
Japan	0.191	0.171	0.072	0.020	0.018	0.011	0.008	0.005	-9.31%	-13.03%	-8.48%
Malaysia	2.147	2.347	2.635	3.625	3.962	3.950	3.511	2.884	2.07%	4.16%	-2.10%
Myanmar	0.479	0.437	0.410	0.489	0.559	0.612	1.030	1.310	-1.54%	3.15%	5.84%
Pakistan	1.194	1.484	1.432	1.779	1.938	1.937	1.772	1.347	1.83%	3.08%	-2.40%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.013	0.003	0.004	0.002	0.001	0.000	-3.08%	-10.02%	-14.21%
Thailand	0.925	1.378	1.524	1.366	1.160	0.820	0.904	0.897	5.12%	-2.69%	-1.70%
Other Asia & Oceania	1.366	1.739	2.301	2.772	3.081	3.162	2.977	2.548	5.35%	2.96%	-1.26%
World	**104.006**	**120.194**	**127.797**	**140.711**	**153.713**	**163.644**	**172.927**	**181.637**	**2.08%**	**1.86%**	**1.12%**

[47] Supply is marketed production. Historical data match those reported by EIA.

Ref_HRR Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**35.109**	**39.585**	**42.280**	**43.265**	**44.228**	**45.970**	**2.49%**	**1.88%**	**0.56%**
Canada	7.185	5.909	5.680	6.512	7.884	8.469	8.787	9.435	-2.32%	3.33%	1.20%
Mexico	1.349	1.799	1.251	0.666	0.870	1.060	1.928	3.006	-0.75%	-3.57%	8.62%
United States	18.927	22.382	28.177	32.408	33.526	33.736	33.513	33.529	4.06%	1.75%	0.00%
Central & South America	**5.318**	**6.267**	**6.510**	**6.682**	**7.482**	**8.155**	**8.714**	**9.096**	**2.04%**	**1.40%**	**1.31%**
Argentina	1.753	1.585	1.386	2.451	3.113	3.559	3.854	4.110	-2.32%	8.43%	1.87%
Brazil	0.432	0.570	0.762	0.338	0.159	0.097	0.049	0.024	5.84%	-14.49%	-11.97%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.050	0.075	-9.34%	-15.00%	19.81%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.200	0.308	7.08%	-4.56%	-0.15%
Peru	0.073	0.291	0.442	0.454	0.483	0.506	0.532	0.521	19.66%	0.90%	0.50%
Trinidad and Tobago	1.094	1.512	1.445	1.269	1.341	1.421	1.545	1.527	2.82%	-0.75%	0.87%
Venezuela	1.172	1.201	1.253	1.224	1.547	1.809	1.904	1.901	0.66%	2.13%	1.38%
Other Central & South America	0.472	0.589	0.694	0.506	0.518	0.539	0.579	0.630	3.92%	-2.88%	1.31%
Europe	**11.723**	**11.155**	**9.794**	**9.923**	**10.246**	**10.186**	**10.048**	**9.636**	**-1.78%**	**0.45%**	**-0.41%**
Austria	0.061	0.064	0.041	0.028	0.031	0.018	0.011	0.007	-3.85%	-2.86%	-9.30%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.003	0.020	0.013	0.009	-14.57%	-14.50%	8.25%
Germany	0.689	0.526	0.330	0.158	0.195	0.200	0.466	0.519	-7.11%	-5.14%	6.76%
Italy	0.426	0.297	0.239	0.112	0.178	0.244	0.179	0.112	-5.63%	-2.88%	-3.03%
Netherlands	2.773	3.131	3.164	3.059	2.638	2.052	1.433	0.910	1.33%	-1.80%	-6.85%
Norway	3.196	3.849	3.704	3.954	4.255	3.961	3.379	3.204	1.49%	1.40%	-1.87%
Poland	0.214	0.215	0.190	0.209	0.309	0.610	0.980	1.428	-1.19%	5.00%	10.74%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.354	0.447	0.448	0.336	0.328	0.301	-1.54%	2.39%	-2.63%
Spain	0.006	0.002	0.001	0.001	0.000	0.010	0.010	0.058	-13.89%	-13.37%	41.53%
Turkey	0.032	0.024	0.053	0.124	0.144	0.141	0.088	0.032	5.33%	10.48%	-9.50%
United Kingdom	3.275	2.124	1.333	1.475	1.697	2.201	2.796	2.772	-8.60%	2.44%	3.33%
Other Europe	0.574	0.502	0.373	0.352	0.348	0.393	0.364	0.285	-4.23%	-0.69%	-1.32%
Eurasia	**27.386**	**27.903**	**28.399**	**30.186**	**32.558**	**34.084**	**35.369**	**36.463**	**0.36%**	**1.38%**	**0.76%**
Kazakhstan	0.428	0.441	0.630	1.035	1.327	1.473	1.508	1.552	3.94%	7.74%	1.05%
Russia	21.698	22.372	21.602	22.224	23.674	24.607	25.490	26.207	-0.04%	0.92%	0.68%
Turkmenistan	2.225	1.600	2.561	3.145	3.737	4.262	5.117	5.924	1.42%	3.85%	3.12%
Ukraine	0.685	0.684	0.604	0.289	0.270	0.561	0.823	0.948	-1.25%	-7.73%	8.72%
Uzbekistan	2.119	2.130	2.447	3.108	3.099	2.519	1.679	1.083	1.45%	2.39%	-6.77%
Other Eurasia	0.232	0.677	0.555	0.385	0.450	0.662	0.752	0.750	9.10%	-2.07%	3.46%
Middle East	**12.334**	**18.699**	**21.353**	**22.486**	**24.034**	**25.523**	**27.124**	**28.331**	**5.64%**	**1.19%**	**1.10%**
Iran	3.818	6.031	6.406	6.725	7.117	7.458	7.746	8.039	5.31%	1.06%	0.82%
Qatar	1.826	4.359	5.705	5.927	6.214	6.562	6.741	6.767	12.07%	0.86%	0.57%
Oman	0.748	1.035	1.132	1.226	1.306	1.356	1.414	1.452	4.23%	1.44%	0.71%
Saudi Arabia	2.860	3.424	3.916	4.304	4.850	5.315	5.762	6.231	3.19%	2.16%	1.68%
United Arab Emirates	1.828	1.992	2.007	1.891	1.858	1.915	2.089	2.219	0.94%	-0.77%	1.19%
Other Middle East	1.255	1.858	2.187	2.412	2.689	2.916	3.372	3.622	5.71%	2.09%	2.01%
Africa	**6.877**	**8.553**	**7.384**	**8.022**	**9.345**	**10.939**	**12.178**	**13.408**	**0.71%**	**2.38%**	**2.44%**
Algeria	3.613	3.465	3.414	3.343	3.693	3.999	4.021	3.748	-0.56%	0.79%	0.10%
Egypt	1.610	2.284	1.755	1.915	2.012	1.978	2.329	2.881	0.86%	1.37%	2.42%
Nigeria	0.862	1.317	1.175	1.102	1.432	1.957	2.360	3.098	3.15%	2.00%	5.28%
Other Africa	0.792	1.486	1.039	1.663	2.209	3.005	3.469	3.681	2.75%	7.83%	3.46%
Asia & Oceania	**12.907**	**17.527**	**19.376**	**24.435**	**28.445**	**32.237**	**36.268**	**39.370**	**4.15%**	**3.91%**	**2.19%**
Australia	1.266	1.708	3.533	5.288	6.133	6.222	6.334	6.414	10.81%	5.67%	0.30%
China	1.763	3.334	3.812	4.108	5.705	8.564	12.102	15.465	8.02%	4.11%	6.87%
India	1.153	1.848	1.178	1.937	2.285	2.568	2.369	2.281	0.21%	6.85%	-0.01%
Indonesia	2.406	3.047	2.469	3.048	3.645	4.429	5.256	6.197	0.26%	3.97%	3.60%
Japan	0.191	0.171	0.072	0.021	0.016	0.012	0.008	0.005	-9.33%	-13.94%	-7.88%
Malaysia	2.147	2.347	2.637	3.625	3.937	3.918	3.490	2.889	2.08%	4.09%	-2.04%
Myanmar	0.479	0.437	0.411	0.491	0.557	0.609	1.029	1.314	-1.51%	3.09%	5.89%
Pakistan	1.194	1.484	1.432	1.779	1.922	1.920	1.777	1.360	1.84%	2.99%	-2.28%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.013	0.003	0.004	0.002	0.001	0.000	-3.09%	-10.60%	-13.83%
Thailand	0.925	1.378	1.524	1.363	1.162	0.825	0.893	0.897	5.11%	-2.67%	-1.71%
Other Asia & Oceania	1.366	1.739	2.298	2.773	3.079	3.166	3.009	2.547	5.34%	2.97%	-1.26%
World	**104.006**	**120.194**	**127.924**	**141.320**	**154.391**	**164.389**	**173.929**	**182.274**	**2.09%**	**1.90%**	**1.11%**

Ref_LRR Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**34.662**	**38.199**	**40.093**	**40.523**	**41.785**	**43.271**	**2.36%**	**1.47%**	**0.51%**
Canada	7.185	5.909	6.148	8.151	8.726	8.778	8.869	9.505	-1.55%	3.56%	0.57%
Mexico	1.349	1.799	1.251	0.786	1.348	2.733	4.224	5.089	-0.74%	0.75%	9.26%
United States	18.927	22.382	27.263	29.262	30.019	29.013	28.691	28.676	3.72%	0.97%	-0.30%
Central & South America	**5.318**	**6.267**	**6.518**	**6.712**	**7.555**	**8.186**	**8.745**	**9.107**	**2.05%**	**1.49%**	**1.25%**
Argentina	1.753	1.585	1.386	2.484	3.116	3.558	3.855	4.105	-2.32%	8.44%	1.86%
Brazil	0.432	0.570	0.762	0.338	0.157	0.096	0.048	0.023	5.84%	-14.63%	-11.99%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.051	0.075	-9.34%	-15.00%	19.76%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.205	0.307	7.08%	-4.56%	-0.16%
Peru	0.073	0.291	0.441	0.456	0.485	0.505	0.534	0.568	19.64%	0.95%	1.05%
Trinidad and Tobago	1.094	1.512	1.453	1.266	1.413	1.460	1.544	1.523	2.87%	-0.28%	0.50%
Venezuela	1.172	1.201	1.253	1.224	1.546	1.801	1.915	1.887	0.66%	2.12%	1.34%
Other Central & South America	0.472	0.589	0.695	0.506	0.519	0.540	0.594	0.618	3.94%	-2.88%	1.17%
Europe	**11.723**	**11.155**	**9.795**	**10.048**	**10.404**	**10.274**	**9.977**	**9.721**	**-1.78%**	**0.60%**	**-0.45%**
Austria	0.061	0.064	0.041	0.029	0.031	0.018	0.011	0.007	-3.84%	-2.79%	-9.16%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.004	0.019	0.013	0.009	-14.61%	-10.47%	5.03%
Germany	0.689	0.526	0.329	0.163	0.206	0.202	0.467	0.525	-7.11%	-4.60%	6.44%
Italy	0.426	0.297	0.239	0.121	0.194	0.240	0.171	0.112	-5.63%	-2.06%	-3.57%
Netherlands	2.773	3.131	3.170	3.087	2.646	2.066	1.413	0.875	1.35%	-1.79%	-7.11%
Norway	3.196	3.849	3.709	3.995	4.293	3.961	3.356	3.214	1.50%	1.47%	-1.91%
Poland	0.214	0.215	0.192	0.210	0.312	0.649	1.011	1.580	-1.08%	4.98%	11.42%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.351	0.447	0.450	0.336	0.324	0.307	-1.63%	2.52%	-2.51%
Spain	0.006	0.002	0.001	0.001	0.003	0.010	0.009	0.050	-13.88%	7.61%	21.27%
Turkey	0.032	0.024	0.054	0.152	0.144	0.135	0.081	0.031	5.53%	10.22%	-9.64%
United Kingdom	3.275	2.124	1.322	1.477	1.750	2.245	2.775	2.739	-8.67%	2.85%	3.03%
Other Europe	0.574	0.502	0.374	0.359	0.372	0.393	0.347	0.272	-4.20%	-0.06%	-2.05%
Eurasia	**27.386**	**27.903**	**28.392**	**30.234**	**32.617**	**34.151**	**35.495**	**36.715**	**0.36%**	**1.40%**	**0.79%**
Kazakhstan	0.428	0.441	0.630	1.045	1.344	1.482	1.538	1.627	3.94%	7.88%	1.28%
Russia	21.698	22.372	21.598	22.244	23.696	24.659	25.611	26.401	-0.05%	0.93%	0.72%
Turkmenistan	2.225	1.600	2.562	3.161	3.713	4.198	5.088	5.884	1.42%	3.78%	3.12%
Ukraine	0.685	0.684	0.604	0.291	0.301	0.589	0.831	0.966	-1.25%	-6.73%	8.08%
Uzbekistan	2.119	2.130	2.444	3.101	3.101	2.536	1.678	1.088	1.44%	2.41%	-6.74%
Other Eurasia	0.232	0.677	0.555	0.392	0.462	0.688	0.748	0.748	9.10%	-1.82%	3.27%
Middle East	**12.334**	**18.699**	**21.351**	**22.489**	**24.023**	**25.590**	**27.154**	**28.352**	**5.64%**	**1.19%**	**1.11%**
Iran	3.818	6.031	6.406	6.728	7.107	7.464	7.765	8.041	5.31%	1.04%	0.83%
Qatar	1.826	4.359	5.705	5.925	6.212	6.595	6.741	6.780	12.07%	0.86%	0.58%
Oman	0.748	1.035	1.132	1.226	1.306	1.358	1.418	1.452	4.23%	1.44%	0.71%
Saudi Arabia	2.860	3.424	3.916	4.302	4.850	5.326	5.754	6.226	3.19%	2.16%	1.68%
United Arab Emirates	1.828	1.992	2.007	1.894	1.861	1.914	2.083	2.226	0.94%	-0.75%	1.20%
Other Middle East	1.255	1.858	2.184	2.414	2.686	2.934	3.393	3.626	5.70%	2.09%	2.02%
Africa	**6.877**	**8.553**	**7.381**	**8.078**	**9.578**	**10.931**	**12.141**	**13.404**	**0.71%**	**2.64%**	**2.27%**
Algeria	3.613	3.465	3.413	3.356	3.741	4.007	4.002	3.705	-0.57%	0.92%	-0.06%
Egypt	1.610	2.284	1.748	1.931	2.074	1.978	2.313	2.896	0.82%	1.73%	2.25%
Nigeria	0.862	1.317	1.183	1.104	1.569	1.959	2.387	3.132	3.22%	2.86%	4.72%
Other Africa	0.792	1.486	1.038	1.688	2.195	2.986	3.438	3.671	2.74%	7.77%	3.49%
Asia & Oceania	**12.907**	**17.527**	**19.372**	**24.656**	**28.903**	**32.858**	**36.708**	**39.579**	**4.14%**	**4.08%**	**2.12%**
Australia	1.266	1.708	3.523	5.360	6.137	6.242	6.340	6.378	10.78%	5.71%	0.26%
China	1.763	3.334	3.816	4.184	5.978	8.977	12.472	15.598	8.03%	4.59%	6.60%
India	1.153	1.848	1.181	1.955	2.330	2.609	2.343	2.300	0.24%	7.03%	-0.09%
Indonesia	2.406	3.047	2.473	3.092	3.664	4.473	5.303	6.370	0.28%	4.01%	3.76%
Japan	0.191	0.171	0.072	0.021	0.019	0.012	0.008	0.005	-9.30%	-12.54%	-8.90%
Malaysia	2.147	2.347	2.639	3.629	3.989	3.963	3.498	2.865	2.08%	4.22%	-2.18%
Myanmar	0.479	0.437	0.408	0.492	0.555	0.608	1.030	1.303	-1.57%	3.11%	5.86%
Pakistan	1.194	1.484	1.431	1.779	1.973	1.971	1.769	1.340	1.83%	3.26%	-2.55%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.013	0.003	0.005	0.002	0.001	0.000	-3.06%	-9.80%	-14.36%
Thailand	0.925	1.378	1.521	1.357	1.169	0.833	0.910	0.885	5.10%	-2.60%	-1.84%
Other Asia & Oceania	1.366	1.739	2.295	2.785	3.085	3.167	3.033	2.535	5.32%	3.00%	-1.30%
World	**104.006**	**120.194**	**127.472**	**140.417**	**153.173**	**162.513**	**172.003**	**180.150**	**2.06%**	**1.85%**	**1.09%**

Ref_Hi-D Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**35.067**	**39.653**	**42.638**	**44.584**	**45.425**	**46.828**	**2.48%**	**1.97%**	**0.63%**
Canada	7.185	5.909	5.979	7.897	8.693	8.781	8.854	9.411	-1.82%	3.81%	0.53%
Mexico	1.349	1.799	1.251	0.708	0.982	2.251	3.418	4.850	-0.74%	-2.39%	11.23%
United States	18.927	22.382	27.836	31.048	32.962	33.551	33.153	32.567	3.93%	1.70%	-0.08%
Central & South America	**5.318**	**6.267**	**6.515**	**6.706**	**7.526**	**8.116**	**8.725**	**9.101**	**2.05%**	**1.45%**	**1.28%**
Argentina	1.753	1.585	1.386	2.479	3.117	3.561	3.855	4.110	-2.32%	8.44%	1.86%
Brazil	0.432	0.570	0.762	0.338	0.159	0.097	0.048	0.024	5.84%	-14.54%	-11.80%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.050	0.075	-9.34%	-15.00%	19.77%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.199	0.311	7.08%	-4.56%	-0.08%
Peru	0.073	0.291	0.441	0.453	0.487	0.512	0.534	0.554	19.63%	0.99%	0.86%
Trinidad and Tobago	1.094	1.512	1.448	1.269	1.383	1.396	1.535	1.521	2.84%	-0.46%	0.64%
Venezuela	1.172	1.201	1.253	1.219	1.542	1.782	1.923	1.883	0.66%	2.10%	1.34%
Other Central & South America	0.472	0.589	0.697	0.509	0.519	0.543	0.581	0.623	3.98%	-2.90%	1.22%
Europe	**11.723**	**11.155**	**9.796**	**10.005**	**10.392**	**10.191**	**10.065**	**9.682**	**-1.78%**	**0.59%**	**-0.47%**
Austria	0.061	0.064	0.041	0.029	0.029	0.018	0.011	0.007	-3.83%	-3.54%	-8.90%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.004	0.019	0.013	0.009	-14.60%	-11.88%	5.88%
Germany	0.689	0.526	0.330	0.162	0.200	0.193	0.467	0.520	-7.11%	-4.85%	6.56%
Italy	0.426	0.297	0.239	0.122	0.196	0.239	0.172	0.110	-5.63%	-1.96%	-3.77%
Netherlands	2.773	3.131	3.169	3.076	2.662	2.037	1.429	0.885	1.34%	-1.73%	-7.08%
Norway	3.196	3.849	3.706	3.987	4.297	3.961	3.371	3.183	1.49%	1.49%	-1.98%
Poland	0.214	0.215	0.192	0.214	0.317	0.662	1.037	1.581	-1.09%	5.15%	11.31%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.351	0.447	0.448	0.339	0.332	0.305	-1.61%	2.47%	-2.54%
Spain	0.006	0.002	0.001	0.001	0.003	0.009	0.009	0.057	-13.89%	7.79%	22.18%
Turkey	0.032	0.024	0.053	0.140	0.138	0.133	0.086	0.032	5.38%	9.92%	-9.35%
United Kingdom	3.275	2.124	1.326	1.466	1.735	2.196	2.792	2.722	-8.64%	2.72%	3.05%
Other Europe	0.574	0.502	0.375	0.356	0.364	0.385	0.347	0.272	-4.18%	-0.29%	-1.92%
Eurasia	**27.386**	**27.903**	**28.392**	**30.216**	**32.563**	**34.009**	**35.274**	**36.447**	**0.36%**	**1.38%**	**0.75%**
Kazakhstan	0.428	0.441	0.630	1.045	1.315	1.465	1.523	1.601	3.94%	7.64%	1.32%
Russia	21.698	22.372	21.595	22.224	23.661	24.546	25.412	26.162	-0.05%	0.92%	0.67%
Turkmenistan	2.225	1.600	2.564	3.159	3.743	4.234	5.085	5.901	1.43%	3.86%	3.08%
Ukraine	0.685	0.684	0.604	0.298	0.284	0.550	0.816	0.948	-1.25%	-7.26%	8.36%
Uzbekistan	2.119	2.130	2.444	3.103	3.103	2.532	1.684	1.081	1.44%	2.42%	-6.79%
Other Eurasia	0.232	0.677	0.555	0.388	0.456	0.682	0.753	0.754	9.10%	-1.95%	3.41%
Middle East	**12.334**	**18.699**	**21.348**	**22.481**	**24.034**	**25.532**	**27.125**	**28.351**	**5.64%**	**1.19%**	**1.11%**
Iran	3.818	6.031	6.406	6.723	7.117	7.462	7.760	8.041	5.31%	1.06%	0.82%
Qatar	1.826	4.359	5.705	5.928	6.209	6.550	6.742	6.761	12.07%	0.85%	0.57%
Oman	0.748	1.035	1.132	1.226	1.307	1.357	1.415	1.458	4.23%	1.44%	0.73%
Saudi Arabia	2.860	3.424	3.917	4.302	4.852	5.331	5.755	6.222	3.19%	2.16%	1.67%
United Arab Emirates	1.828	1.992	2.007	1.890	1.866	1.910	2.080	2.240	0.94%	-0.72%	1.23%
Other Middle East	1.255	1.858	2.181	2.411	2.685	2.922	3.374	3.629	5.68%	2.10%	2.03%
Africa	**6.877**	**8.553**	**7.380**	**8.063**	**9.518**	**10.930**	**12.144**	**13.380**	**0.71%**	**2.58%**	**2.30%**
Algeria	3.613	3.465	3.413	3.358	3.761	3.999	4.045	3.747	-0.57%	0.97%	-0.02%
Egypt	1.610	2.284	1.749	1.920	2.029	1.964	2.324	2.883	0.83%	1.50%	2.37%
Nigeria	0.862	1.317	1.181	1.104	1.521	1.967	2.343	3.125	3.20%	2.56%	4.92%
Other Africa	0.792	1.486	1.037	1.681	2.207	3.000	3.432	3.626	2.73%	7.85%	3.36%
Asia & Oceania	**12.907**	**17.527**	**19.376**	**24.600**	**28.679**	**32.394**	**36.279**	**39.427**	**4.15%**	**4.00%**	**2.14%**
Australia	1.266	1.708	3.522	5.341	6.143	6.217	6.311	6.336	10.78%	5.72%	0.21%
China	1.763	3.334	3.818	4.174	5.846	8.692	12.121	15.585	8.03%	4.35%	6.76%
India	1.153	1.848	1.180	1.942	2.314	2.547	2.352	2.293	0.23%	6.96%	-0.06%
Indonesia	2.406	3.047	2.471	3.086	3.652	4.428	5.245	6.229	0.27%	3.98%	3.62%
Japan	0.191	0.171	0.072	0.021	0.018	0.011	0.008	0.005	-9.30%	-12.77%	-8.76%
Malaysia	2.147	2.347	2.643	3.630	3.963	3.954	3.514	2.864	2.10%	4.13%	-2.14%
Myanmar	0.479	0.437	0.410	0.489	0.558	0.611	1.030	1.321	-1.53%	3.14%	5.91%
Pakistan	1.194	1.484	1.432	1.779	1.934	1.934	1.771	1.358	1.83%	3.06%	-2.33%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.013	0.003	0.005	0.002	0.001	0.000	-3.10%	-9.80%	-14.34%
Thailand	0.925	1.378	1.519	1.358	1.165	0.829	0.910	0.881	5.08%	-2.62%	-1.85%
Other Asia & Oceania	1.366	1.739	2.296	2.776	3.080	3.169	3.017	2.554	5.33%	2.98%	-1.24%
World	**104.006**	**120.194**	**127.873**	**141.724**	**155.350**	**165.756**	**175.038**	**183.216**	**2.09%**	**1.97%**	**1.11%**

LNG12_Ref Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**34.950**	**39.311**	**41.905**	**42.808**	**44.955**	**46.386**	**2.44%**	**1.83%**	**0.68%**
Canada	7.185	5.909	5.871	7.453	8.541	8.798	9.254	9.347	-2.00%	3.82%	0.60%
Mexico	1.349	1.799	1.251	0.688	0.904	1.844	3.259	4.850	-0.74%	-3.20%	11.85%
United States	18.927	22.382	27.828	31.169	32.461	32.166	32.442	32.190	3.93%	1.55%	-0.06%
Central & South America	**5.318**	**6.267**	**6.504**	**6.750**	**7.745**	**8.352**	**8.937**	**9.061**	**2.03%**	**1.76%**	**1.05%**
Argentina	1.753	1.585	1.386	2.484	3.123	3.563	3.860	4.115	-2.32%	8.46%	1.86%
Brazil	0.432	0.570	0.762	0.338	0.157	0.096	0.048	0.023	5.84%	-14.62%	-11.96%
Chile	0.068	0.065	0.025	0.011	0.005	0.003	0.049	0.075	-9.34%	-15.00%	19.76%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.205	0.268	7.08%	-4.56%	-1.08%
Peru	0.073	0.291	0.440	0.455	0.486	0.523	0.567	0.578	19.61%	0.99%	1.16%
Trinidad and Tobago	1.094	1.512	1.440	1.300	1.543	1.560	1.546	1.530	2.79%	0.69%	-0.06%
Venezuela	1.172	1.201	1.253	1.222	1.588	1.819	2.054	1.848	0.66%	2.40%	1.02%
Other Central & South America	0.472	0.589	0.695	0.512	0.529	0.565	0.608	0.624	3.94%	-2.70%	1.11%
Europe	**11.723**	**11.155**	**9.767**	**9.930**	**10.065**	**9.335**	**8.495**	**7.454**	**-1.81%**	**0.30%**	**-1.98%**
Austria	0.061	0.064	0.042	0.029	0.030	0.018	0.011	0.007	-3.77%	-3.13%	-8.95%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.009	0.019	0.012	0.026	-14.42%	-4.39%	7.80%
Germany	0.689	0.526	0.329	0.165	0.226	0.444	0.583	0.454	-7.13%	-3.70%	4.77%
Italy	0.426	0.297	0.239	0.137	0.226	0.237	0.154	0.101	-5.63%	-0.54%	-5.20%
Netherlands	2.773	3.131	3.126	2.889	2.357	1.572	0.929	0.585	1.21%	-2.79%	-8.87%
Norway	3.196	3.849	3.741	4.120	4.407	4.275	3.989	3.750	1.59%	1.65%	-1.07%
Poland	0.214	0.215	0.179	0.151	0.091	0.053	0.091	0.114	-1.74%	-6.55%	1.49%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.354	0.455	0.456	0.373	0.367	0.298	-1.52%	2.54%	-2.79%
Spain	0.006	0.002	0.001	0.001	0.005	0.013	0.038	0.181	-13.55%	13.73%	27.04%
Turkey	0.032	0.024	0.054	0.134	0.152	0.150	0.073	0.026	5.47%	10.94%	-11.05%
United Kingdom	3.275	2.124	1.310	1.461	1.706	1.781	1.897	1.644	-8.76%	2.68%	-0.25%
Other Europe	0.574	0.502	0.378	0.383	0.400	0.401	0.351	0.268	-4.09%	0.56%	-2.64%
Eurasia	**27.386**	**27.903**	**28.436**	**30.420**	**33.350**	**35.450**	**36.542**	**37.664**	**0.38%**	**1.61%**	**0.81%**
Kazakhstan	0.428	0.441	0.630	1.055	1.382	1.514	1.587	1.701	3.94%	8.18%	1.40%
Russia	21.698	22.372	21.624	22.341	24.015	25.428	26.245	26.901	-0.03%	1.05%	0.76%
Turkmenistan	2.225	1.600	2.571	3.180	3.854	4.493	5.346	6.250	1.46%	4.13%	3.28%
Ukraine	0.685	0.684	0.604	0.297	0.401	0.757	0.952	0.995	-1.25%	-4.02%	6.25%
Uzbekistan	2.119	2.130	2.450	3.133	3.136	2.527	1.666	1.064	1.47%	2.50%	-6.95%
Other Eurasia	0.232	0.677	0.557	0.414	0.563	0.731	0.747	0.754	9.14%	0.10%	1.97%
Middle East	**12.334**	**18.699**	**21.346**	**22.493**	**24.135**	**25.807**	**27.287**	**28.530**	**5.64%**	**1.24%**	**1.12%**
Iran	3.818	6.031	6.406	6.727	7.117	7.474	7.755	8.027	5.31%	1.06%	0.81%
Qatar	1.826	4.359	5.702	5.931	6.307	6.705	6.749	6.768	12.06%	1.01%	0.47%
Oman	0.748	1.035	1.134	1.227	1.310	1.386	1.421	1.455	4.25%	1.45%	0.70%
Saudi Arabia	2.860	3.424	3.917	4.302	4.853	5.341	5.746	6.187	3.19%	2.16%	1.63%
United Arab Emirates	1.828	1.992	2.004	1.884	1.859	1.910	2.086	2.211	0.92%	-0.74%	1.16%
Other Middle East	1.255	1.858	2.184	2.422	2.689	2.991	3.529	3.882	5.70%	2.10%	2.48%
Africa	**6.877**	**8.553**	**7.386**	**8.181**	**9.934**	**11.195**	**12.667**	**14.355**	**0.72%**	**3.01%**	**2.48%**
Algeria	3.613	3.465	3.427	3.433	3.818	4.068	4.076	3.804	-0.53%	1.09%	-0.02%
Egypt	1.610	2.284	1.750	1.929	2.081	2.087	2.542	3.119	0.83%	1.75%	2.74%
Nigeria	0.862	1.317	1.176	1.110	1.742	1.959	2.443	3.261	3.16%	4.01%	4.27%
Other Africa	0.792	1.486	1.033	1.709	2.293	3.082	3.607	4.170	2.69%	8.30%	4.07%
Asia & Oceania	**12.907**	**17.527**	**19.425**	**23.592**	**26.207**	**29.098**	**30.753**	**30.656**	**4.17%**	**3.04%**	**1.05%**
Australia	1.266	1.708	3.511	5.731	6.187	6.269	6.375	7.314	10.74%	5.83%	1.12%
China	1.763	3.334	3.796	2.815	3.206	4.317	4.995	5.429	7.97%	-1.67%	3.57%
India	1.153	1.848	1.209	1.462	1.586	1.943	2.184	1.673	0.47%	2.75%	0.36%
Indonesia	2.406	3.047	2.531	3.154	3.754	4.814	6.091	6.934	0.50%	4.02%	4.17%
Japan	0.191	0.171	0.078	0.026	0.025	0.016	0.008	0.005	-8.53%	-10.77%	-10.51%
Malaysia	2.147	2.347	2.633	3.590	4.026	4.206	3.690	3.094	2.06%	4.34%	-1.74%
Myanmar	0.479	0.437	0.414	0.536	0.620	0.904	1.434	1.402	-1.44%	4.13%	5.59%
Pakistan	1.194	1.484	1.431	1.781	2.145	2.256	1.839	1.252	1.83%	4.13%	-3.52%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.014	0.005	0.005	0.002	0.001	0.000	-1.91%	-9.85%	-15.00%
Thailand	0.925	1.378	1.521	1.362	1.192	0.829	1.008	0.869	5.10%	-2.41%	-2.09%
Other Asia & Oceania	1.366	1.739	2.287	3.131	3.460	3.541	3.127	2.682	5.29%	4.23%	-1.68%
World	**104.006**	**120.194**	**127.814**	**140.678**	**153.341**	**162.045**	**169.635**	**174.106**	**2.08%**	**1.84%**	**0.85%**

LNG12_HRR Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**35.126**	**40.248**	**42.425**	**44.745**	**48.465**	**50.357**	**2.49%**	**1.91%**	**1.15%**
Canada	7.185	5.909	5.709	6.666	7.988	8.597	9.205	9.310	-2.27%	3.42%	1.03%
Mexico	1.349	1.799	1.251	0.660	0.868	1.198	2.710	3.841	-0.75%	-3.60%	10.43%
United States	18.927	22.382	28.166	32.923	33.569	34.951	36.550	37.206	4.06%	1.77%	0.69%
Central & South America	**5.318**	**6.267**	**6.532**	**6.816**	**7.735**	**8.324**	**8.740**	**9.125**	**2.08%**	**1.71%**	**1.11%**
Argentina	1.753	1.585	1.386	2.484	3.121	3.559	3.855	4.102	-2.32%	8.46%	1.84%
Brazil	0.432	0.570	0.762	0.338	0.157	0.097	0.048	0.023	5.84%	-14.63%	-11.96%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.050	0.076	-9.34%	-15.00%	19.84%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.205	0.307	7.08%	-4.56%	-0.17%
Peru	0.073	0.291	0.441	0.459	0.491	0.512	0.546	0.599	19.64%	1.06%	1.34%
Trinidad and Tobago	1.094	1.512	1.465	1.359	1.565	1.561	1.543	1.526	2.97%	0.66%	-0.17%
Venezuela	1.172	1.201	1.253	1.223	1.548	1.800	1.884	1.882	0.66%	2.14%	1.31%
Other Central & South America	0.472	0.589	0.696	0.514	0.534	0.571	0.609	0.610	3.96%	-2.61%	0.89%
Europe	**11.723**	**11.155**	**9.782**	**9.970**	**10.132**	**9.332**	**8.444**	**7.395**	**-1.79%**	**0.35%**	**-2.08%**
Austria	0.061	0.064	0.041	0.029	0.031	0.019	0.011	0.007	-3.85%	-2.81%	-9.36%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.011	0.018	0.012	0.032	-14.41%	-2.01%	7.35%
Germany	0.689	0.526	0.329	0.168	0.229	0.429	0.585	0.453	-7.11%	-3.58%	4.66%
Italy	0.426	0.297	0.239	0.143	0.237	0.234	0.148	0.097	-5.63%	-0.09%	-5.77%
Netherlands	2.773	3.131	3.133	2.900	2.375	1.571	0.911	0.566	1.23%	-2.73%	-9.12%
Norway	3.196	3.849	3.742	4.125	4.415	4.270	3.962	3.735	1.59%	1.67%	-1.11%
Poland	0.214	0.215	0.182	0.152	0.091	0.052	0.078	0.116	-1.61%	-6.73%	1.64%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.357	0.458	0.458	0.371	0.361	0.297	-1.45%	2.52%	-2.85%
Spain	0.006	0.002	0.001	0.001	0.007	0.012	0.033	0.179	-13.54%	17.83%	24.02%
Turkey	0.032	0.024	0.057	0.155	0.151	0.150	0.071	0.027	5.98%	10.28%	-10.78%
United Kingdom	3.275	2.124	1.306	1.446	1.721	1.808	1.921	1.624	-8.78%	2.79%	-0.39%
Other Europe	0.574	0.502	0.381	0.389	0.408	0.399	0.351	0.263	-4.02%	0.67%	-2.88%
Eurasia	**27.386**	**27.903**	**28.430**	**30.434**	**33.563**	**35.486**	**36.576**	**37.714**	**0.37%**	**1.67%**	**0.78%**
Kazakhstan	0.428	0.441	0.630	1.065	1.417	1.516	1.569	1.693	3.94%	8.44%	1.20%
Russia	21.698	22.372	21.625	22.336	24.135	25.415	26.205	26.924	-0.03%	1.10%	0.73%
Turkmenistan	2.225	1.600	2.564	3.174	3.864	4.550	5.422	6.286	1.43%	4.19%	3.30%
Ukraine	0.685	0.684	0.604	0.296	0.428	0.758	0.963	0.984	-1.25%	-3.40%	5.72%
Uzbekistan	2.119	2.130	2.450	3.144	3.144	2.520	1.661	1.070	1.47%	2.52%	-6.94%
Other Eurasia	0.232	0.677	0.557	0.419	0.576	0.728	0.756	0.756	9.13%	0.35%	1.83%
Middle East	**12.334**	**18.699**	**21.346**	**22.494**	**24.172**	**25.782**	**27.212**	**28.512**	**5.64%**	**1.25%**	**1.11%**
Iran	3.818	6.031	6.405	6.720	7.112	7.469	7.742	8.080	5.31%	1.05%	0.85%
Qatar	1.826	4.359	5.707	5.935	6.340	6.715	6.747	6.769	12.07%	1.06%	0.44%
Oman	0.748	1.035	1.134	1.227	1.309	1.381	1.425	1.457	4.24%	1.45%	0.72%
Saudi Arabia	2.860	3.424	3.916	4.303	4.847	5.324	5.748	6.198	3.19%	2.16%	1.65%
United Arab Emirates	1.828	1.992	2.005	1.888	1.863	1.922	2.080	2.223	0.93%	-0.73%	1.18%
Other Middle East	1.255	1.858	2.180	2.422	2.701	2.971	3.470	3.786	5.68%	2.16%	2.28%
Africa	**6.877**	**8.553**	**7.414**	**8.187**	**9.986**	**11.245**	**12.625**	**14.171**	**0.75%**	**3.02%**	**2.36%**
Algeria	3.613	3.465	3.429	3.409	3.816	4.063	4.071	3.776	-0.52%	1.08%	-0.07%
Egypt	1.610	2.284	1.748	1.934	2.120	2.106	2.527	3.104	0.82%	1.95%	2.57%
Nigeria	0.862	1.317	1.200	1.135	1.747	1.983	2.383	3.167	3.36%	3.83%	4.05%
Other Africa	0.792	1.486	1.037	1.709	2.302	3.093	3.644	4.124	2.73%	8.30%	3.96%
Asia & Oceania	**12.907**	**17.527**	**19.474**	**23.696**	**26.591**	**29.109**	**30.201**	**29.771**	**4.20%**	**3.16%**	**0.76%**
Australia	1.266	1.708	3.525	5.728	6.136	6.245	6.350	7.057	10.78%	5.70%	0.94%
China	1.763	3.334	3.809	2.897	3.558	4.328	4.667	5.078	8.01%	-0.68%	2.40%
India	1.153	1.848	1.207	1.457	1.668	1.988	2.144	1.598	0.46%	3.29%	-0.29%
Indonesia	2.406	3.047	2.543	3.162	3.760	4.777	6.046	6.860	0.55%	3.99%	4.09%
Japan	0.191	0.171	0.079	0.024	0.025	0.015	0.008	0.004	-8.47%	-10.67%	-11.04%
Malaysia	2.147	2.347	2.642	3.598	4.024	4.182	3.662	3.066	2.10%	4.30%	-1.80%
Myanmar	0.479	0.437	0.415	0.541	0.615	0.911	1.414	1.395	-1.42%	4.01%	5.62%
Pakistan	1.194	1.484	1.431	1.779	2.138	2.269	1.819	1.247	1.83%	4.10%	-3.53%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.014	0.005	0.005	0.002	0.001	0.000	-1.95%	-9.82%	-15.00%
Thailand	0.925	1.378	1.522	1.365	1.193	0.828	1.002	0.868	5.10%	-2.41%	-2.10%
Other Asia & Oceania	1.366	1.739	2.288	3.141	3.470	3.564	3.088	2.597	5.30%	4.25%	-1.91%
World	**104.006**	**120.194**	**128.104**	**141.846**	**154.603**	**164.024**	**172.264**	**177.044**	**2.11%**	**1.90%**	**0.91%**

LNG12_LRR Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**34.743**	**38.822**	**41.484**	**41.940**	**43.279**	**44.643**	**2.38%**	**1.79%**	**0.49%**
Canada	7.185	5.909	6.081	8.021	8.717	8.912	9.284	9.351	-1.65%	3.67%	0.47%
Mexico	1.349	1.799	1.251	0.752	1.472	2.770	4.437	5.827	-0.74%	1.64%	9.61%
United States	18.927	22.382	27.411	30.050	31.294	30.257	29.557	29.464	3.77%	1.33%	-0.40%
Central & South America	**5.318**	**6.267**	**6.531**	**6.853**	**7.723**	**8.314**	**8.743**	**9.133**	**2.08%**	**1.69%**	**1.12%**
Argentina	1.753	1.585	1.386	2.483	3.113	3.554	3.855	4.095	-2.32%	8.42%	1.84%
Brazil	0.432	0.570	0.762	0.338	0.157	0.097	0.048	0.023	5.84%	-14.64%	-11.88%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.051	0.075	-9.34%	-15.00%	19.81%
Colombia	0.253	0.454	0.502	0.427	0.314	0.223	0.198	0.314	7.08%	-4.57%	-0.02%
Peru	0.073	0.291	0.441	0.454	0.486	0.512	0.569	0.600	19.63%	0.98%	1.41%
Trinidad and Tobago	1.094	1.512	1.464	1.395	1.564	1.560	1.547	1.521	2.96%	0.66%	-0.18%
Venezuela	1.172	1.201	1.253	1.225	1.550	1.800	1.908	1.869	0.66%	2.15%	1.26%
Other Central & South America	0.472	0.589	0.697	0.519	0.535	0.566	0.568	0.636	3.97%	-2.61%	1.16%
Europe	**11.723**	**11.155**	**9.776**	**10.063**	**10.152**	**9.357**	**8.477**	**7.426**	**-1.80%**	**0.38%**	**-2.06%**
Austria	0.061	0.064	0.041	0.031	0.031	0.018	0.011	0.007	-3.85%	-2.79%	-9.42%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.011	0.018	0.012	0.028	-14.42%	-1.74%	6.28%
Germany	0.689	0.526	0.329	0.174	0.229	0.435	0.590	0.452	-7.12%	-3.55%	4.63%
Italy	0.426	0.297	0.239	0.151	0.239	0.232	0.146	0.096	-5.63%	0.03%	-5.89%
Netherlands	2.773	3.131	3.128	2.905	2.378	1.577	0.912	0.568	1.21%	-2.71%	-9.11%
Norway	3.196	3.849	3.743	4.156	4.404	4.272	4.017	3.771	1.59%	1.64%	-1.03%
Poland	0.214	0.215	0.181	0.152	0.091	0.053	0.081	0.118	-1.68%	-6.65%	1.74%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.359	0.469	0.458	0.372	0.359	0.293	-1.39%	2.44%	-2.93%
Spain	0.006	0.002	0.001	0.001	0.006	0.012	0.043	0.184	-13.54%	15.68%	25.75%
Turkey	0.032	0.024	0.056	0.155	0.159	0.148	0.067	0.022	5.86%	11.01%	-12.26%
United Kingdom	3.275	2.124	1.307	1.467	1.742	1.815	1.894	1.626	-8.78%	2.91%	-0.46%
Other Europe	0.574	0.502	0.378	0.398	0.403	0.405	0.346	0.261	-4.10%	0.66%	-2.85%
Eurasia	**27.386**	**27.903**	**28.444**	**30.514**	**33.562**	**35.528**	**36.715**	**37.641**	**0.38%**	**1.67%**	**0.77%**
Kazakhstan	0.428	0.441	0.630	1.068	1.421	1.519	1.579	1.695	3.94%	8.48%	1.18%
Russia	21.698	22.372	21.628	22.389	24.189	25.457	26.300	26.835	-0.03%	1.13%	0.69%
Turkmenistan	2.225	1.600	2.573	3.200	3.851	4.550	5.419	6.288	1.46%	4.11%	3.32%
Ukraine	0.685	0.684	0.604	0.296	0.407	0.749	0.960	0.994	-1.25%	-3.88%	6.14%
Uzbekistan	2.119	2.130	2.454	3.152	3.152	2.517	1.660	1.064	1.48%	2.54%	-6.98%
Other Eurasia	0.232	0.677	0.556	0.409	0.542	0.736	0.798	0.765	9.12%	-0.26%	2.33%
Middle East	**12.334**	**18.699**	**21.349**	**22.504**	**24.172**	**25.810**	**27.289**	**28.631**	**5.64%**	**1.25%**	**1.13%**
Iran	3.818	6.031	6.405	6.725	7.113	7.477	7.746	8.040	5.31%	1.05%	0.82%
Qatar	1.826	4.359	5.705	5.931	6.347	6.718	6.754	6.777	12.07%	1.07%	0.44%
Oman	0.748	1.035	1.134	1.227	1.311	1.383	1.422	1.454	4.24%	1.46%	0.69%
Saudi Arabia	2.860	3.424	3.916	4.304	4.847	5.327	5.752	6.216	3.19%	2.16%	1.67%
United Arab Emirates	1.828	1.992	2.007	1.892	1.862	1.927	2.084	2.192	0.94%	-0.75%	1.10%
Other Middle East	1.255	1.858	2.184	2.424	2.692	2.979	3.531	3.951	5.70%	2.12%	2.59%
Africa	**6.877**	**8.553**	**7.415**	**8.301**	**9.972**	**11.234**	**13.054**	**14.880**	**0.76%**	**3.01%**	**2.70%**
Algeria	3.613	3.465	3.429	3.480	3.825	4.076	4.232	3.868	-0.52%	1.10%	0.07%
Egypt	1.610	2.284	1.748	1.931	2.088	2.093	2.556	3.117	0.83%	1.79%	2.71%
Nigeria	0.862	1.317	1.202	1.172	1.744	1.981	2.553	3.544	3.39%	3.79%	4.84%
Other Africa	0.792	1.486	1.036	1.719	2.314	3.084	3.713	4.352	2.72%	8.37%	4.30%
Asia & Oceania	**12.907**	**17.527**	**19.468**	**23.923**	**26.543**	**29.869**	**32.052**	**32.072**	**4.20%**	**3.15%**	**1.27%**
Australia	1.266	1.708	3.527	5.914	6.141	6.249	6.652	7.571	10.79%	5.70%	1.41%
China	1.763	3.334	3.799	2.913	3.532	4.650	5.517	6.083	7.98%	-0.73%	3.69%
India	1.153	1.848	1.204	1.453	1.648	2.063	2.200	1.719	0.43%	3.19%	0.28%
Indonesia	2.406	3.047	2.552	3.184	3.773	4.938	6.265	7.163	0.59%	3.99%	4.37%
Japan	0.191	0.171	0.076	0.028	0.025	0.016	0.008	0.005	-8.79%	-10.49%	-10.62%
Malaysia	2.147	2.347	2.643	3.579	4.007	4.252	3.772	3.167	2.10%	4.25%	-1.56%
Myanmar	0.479	0.437	0.415	0.541	0.616	0.933	1.468	1.399	-1.41%	4.02%	5.63%
Pakistan	1.194	1.484	1.430	1.777	2.122	2.295	1.899	1.255	1.83%	4.02%	-3.44%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.014	0.005	0.005	0.002	0.001	0.000	-1.91%	-9.86%	-15.00%
Thailand	0.925	1.378	1.521	1.367	1.190	0.829	1.015	0.871	5.09%	-2.42%	-2.06%
Other Asia & Oceania	1.366	1.739	2.286	3.161	3.485	3.641	3.255	2.839	5.29%	4.30%	-1.36%
World	**104.006**	**120.194**	**127.727**	**140.981**	**153.608**	**162.052**	**169.610**	**174.425**	**2.08%**	**1.86%**	**0.85%**

LNG12_Hi-D Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**35.045**	**40.313**	**43.665**	**45.369**	**47.514**	**48.845**	**2.47%**	**2.22%**	**0.75%**
Canada	7.185	5.909	5.929	7.715	8.687	8.893	9.284	9.340	-1.90%	3.89%	0.48%
Mexico	1.349	1.799	1.251	0.718	1.021	2.240	3.628	5.419	-0.74%	-2.01%	11.77%
United States	18.927	22.382	27.864	31.880	33.957	34.236	34.602	34.086	3.94%	2.00%	0.03%
Central & South America	**5.318**	**6.267**	**6.529**	**6.828**	**7.726**	**8.336**	**8.795**	**9.116**	**2.07%**	**1.70%**	**1.11%**
Argentina	1.753	1.585	1.386	2.485	3.114	3.558	3.856	4.114	-2.32%	8.43%	1.87%
Brazil	0.432	0.570	0.762	0.338	0.157	0.096	0.048	0.024	5.84%	-14.61%	-11.89%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.051	0.075	-9.34%	-15.00%	19.80%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.199	0.300	7.08%	-4.56%	-0.31%
Peru	0.073	0.291	0.442	0.454	0.490	0.516	0.573	0.591	19.65%	1.05%	1.25%
Trinidad and Tobago	1.094	1.512	1.464	1.373	1.568	1.561	1.549	1.518	2.96%	0.69%	-0.22%
Venezuela	1.172	1.201	1.253	1.225	1.547	1.809	1.908	1.880	0.66%	2.13%	1.31%
Other Central & South America	0.472	0.589	0.695	0.514	0.530	0.571	0.610	0.614	3.94%	-2.68%	0.99%
Europe	**11.723**	**11.155**	**9.777**	**10.029**	**10.150**	**9.358**	**8.511**	**7.413**	**-1.80%**	**0.37%**	**-2.07%**
Austria	0.061	0.064	0.042	0.031	0.031	0.018	0.011	0.007	-3.72%	-2.90%	-9.37%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.012	0.018	0.012	0.029	-14.42%	-0.89%	5.98%
Germany	0.689	0.526	0.329	0.173	0.233	0.433	0.590	0.458	-7.11%	-3.42%	4.61%
Italy	0.426	0.297	0.239	0.144	0.233	0.235	0.153	0.097	-5.63%	-0.22%	-5.69%
Netherlands	2.773	3.131	3.133	2.909	2.371	1.564	0.920	0.557	1.23%	-2.75%	-9.21%
Norway	3.196	3.849	3.742	4.149	4.428	4.274	3.986	3.786	1.59%	1.70%	-1.04%
Poland	0.214	0.215	0.180	0.152	0.091	0.055	0.088	0.114	-1.73%	-6.55%	1.52%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.357	0.463	0.457	0.376	0.367	0.285	-1.44%	2.48%	-3.09%
Spain	0.006	0.002	0.001	0.001	0.007	0.012	0.041	0.175	-13.55%	17.64%	23.98%
Turkey	0.032	0.024	0.056	0.143	0.157	0.150	0.069	0.025	5.91%	10.78%	-11.53%
United Kingdom	3.275	2.124	1.307	1.461	1.725	1.819	1.927	1.618	-8.78%	2.81%	-0.43%
Other Europe	0.574	0.502	0.378	0.398	0.405	0.404	0.346	0.261	-4.10%	0.69%	-2.88%
Eurasia	**27.386**	**27.903**	**28.439**	**30.505**	**33.515**	**35.486**	**36.595**	**37.519**	**0.38%**	**1.66%**	**0.76%**
Kazakhstan	0.428	0.441	0.631	1.056	1.400	1.534	1.616	1.715	3.95%	8.30%	1.36%
Russia	21.698	22.372	21.634	22.407	24.153	25.446	26.246	26.757	-0.03%	1.11%	0.68%
Turkmenistan	2.225	1.600	2.564	3.183	3.824	4.469	5.367	6.228	1.43%	4.08%	3.31%
Ukraine	0.685	0.684	0.604	0.298	0.428	0.771	0.946	0.991	-1.25%	-3.38%	5.75%
Uzbekistan	2.119	2.130	2.449	3.144	3.149	2.520	1.653	1.065	1.46%	2.55%	-6.98%
Other Eurasia	0.232	0.677	0.557	0.416	0.561	0.746	0.769	0.763	9.13%	0.09%	2.07%
Middle East	**12.334**	**18.699**	**21.354**	**22.502**	**24.166**	**25.815**	**27.278**	**28.652**	**5.64%**	**1.24%**	**1.14%**
Iran	3.818	6.031	6.408	6.726	7.111	7.472	7.744	8.062	5.32%	1.05%	0.84%
Qatar	1.826	4.359	5.704	5.930	6.349	6.717	6.754	6.767	12.07%	1.08%	0.43%
Oman	0.748	1.035	1.134	1.227	1.309	1.383	1.424	1.452	4.25%	1.44%	0.70%
Saudi Arabia	2.860	3.424	3.916	4.303	4.849	5.323	5.745	6.197	3.19%	2.16%	1.65%
United Arab Emirates	1.828	1.992	2.007	1.893	1.860	1.927	2.077	2.218	0.94%	-0.75%	1.18%
Other Middle East	1.255	1.858	2.185	2.422	2.689	2.992	3.533	3.958	5.71%	2.09%	2.61%
Africa	**6.877**	**8.553**	**7.410**	**8.253**	**9.975**	**11.222**	**12.869**	**14.620**	**0.75%**	**3.02%**	**2.58%**
Algeria	3.613	3.465	3.429	3.454	3.827	4.072	4.155	3.837	-0.52%	1.11%	0.02%
Egypt	1.610	2.284	1.750	1.932	2.082	2.085	2.554	3.123	0.84%	1.75%	2.74%
Nigeria	0.862	1.317	1.195	1.149	1.753	1.968	2.493	3.344	3.33%	3.90%	4.40%
Other Africa	0.792	1.486	1.036	1.717	2.312	3.097	3.666	4.315	2.72%	8.36%	4.25%
Asia & Oceania	**12.907**	**17.527**	**19.475**	**23.869**	**26.605**	**29.693**	**31.504**	**31.505**	**4.20%**	**3.17%**	**1.13%**
Australia	1.266	1.708	3.527	5.874	6.167	6.223	6.501	7.380	10.79%	5.75%	1.20%
China	1.763	3.334	3.803	2.902	3.544	4.558	5.282	5.849	7.99%	-0.70%	3.40%
India	1.153	1.848	1.208	1.453	1.655	2.049	2.170	1.695	0.47%	3.20%	0.16%
Indonesia	2.406	3.047	2.549	3.185	3.775	4.910	6.241	7.137	0.58%	4.01%	4.34%
Japan	0.191	0.171	0.078	0.027	0.025	0.016	0.008	0.005	-8.60%	-10.54%	-10.86%
Malaysia	2.147	2.347	2.644	3.583	4.012	4.266	3.767	3.128	2.10%	4.26%	-1.65%
Myanmar	0.479	0.437	0.415	0.541	0.617	0.925	1.452	1.410	-1.41%	4.05%	5.66%
Pakistan	1.194	1.484	1.430	1.778	2.136	2.302	1.867	1.248	1.83%	4.09%	-3.52%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.014	0.005	0.005	0.002	0.001	0.000	-1.89%	-9.87%	-15.00%
Thailand	0.925	1.378	1.521	1.362	1.189	0.836	1.011	0.870	5.10%	-2.43%	-2.06%
Other Asia & Oceania	1.366	1.739	2.287	3.160	3.479	3.606	3.204	2.782	5.29%	4.28%	-1.48%
World	**104.006**	**120.194**	**128.030**	**142.299**	**155.802**	**165.280**	**173.066**	**177.670**	**2.10%**	**1.98%**	**0.88%**

LNG20_Ref Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**34.905**	**39.796**	**42.056**	**45.244**	**48.634**	**50.802**	**2.43%**	**1.88%**	**1.27%**
Canada	7.185	5.909	5.902	7.642	8.632	8.778	8.852	8.901	-1.95%	3.87%	0.20%
Mexico	1.349	1.799	1.251	0.715	1.028	2.471	3.989	5.064	-0.74%	-1.95%	11.22%
United States	18.927	22.382	27.751	31.440	32.396	33.994	35.793	36.837	3.90%	1.56%	0.86%
Central & South America	**5.318**	**6.267**	**6.548**	**6.937**	**7.748**	**8.347**	**8.849**	**9.081**	**2.10%**	**1.70%**	**1.06%**
Argentina	1.753	1.585	1.386	2.485	3.115	3.557	3.856	4.098	-2.32%	8.43%	1.85%
Brazil	0.432	0.570	0.762	0.338	0.158	0.097	0.048	0.023	5.84%	-14.59%	-12.01%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.051	0.075	-9.34%	-15.00%	19.76%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.199	0.296	7.08%	-4.55%	-0.42%
Peru	0.073	0.291	0.442	0.454	0.485	0.537	0.575	0.584	19.66%	0.93%	1.24%
Trinidad and Tobago	1.094	1.512	1.481	1.474	1.570	1.560	1.586	1.566	3.08%	0.58%	-0.02%
Venezuela	1.172	1.201	1.253	1.220	1.551	1.808	1.908	1.823	0.66%	2.16%	1.08%
Other Central & South America	0.472	0.589	0.696	0.527	0.549	0.563	0.626	0.617	3.95%	-2.34%	0.78%
Europe	**11.723**	**11.155**	**9.768**	**10.014**	**10.025**	**9.129**	**8.340**	**7.346**	**-1.81%**	**0.26%**	**-2.05%**
Austria	0.061	0.064	0.041	0.032	0.030	0.017	0.011	0.007	-3.88%	-3.19%	-9.42%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.013	0.017	0.011	0.032	-14.43%	-0.02%	6.12%
Germany	0.689	0.526	0.329	0.176	0.228	0.428	0.579	0.452	-7.12%	-3.62%	4.68%
Italy	0.426	0.297	0.239	0.159	0.247	0.226	0.144	0.123	-5.63%	0.35%	-4.53%
Netherlands	2.773	3.131	3.133	2.934	2.377	1.550	0.900	0.556	1.23%	-2.72%	-9.23%
Norway	3.196	3.849	3.735	4.150	4.430	4.253	3.979	3.723	1.57%	1.72%	-1.15%
Poland	0.214	0.215	0.183	0.149	0.090	0.050	0.070	0.116	-1.56%	-6.83%	1.69%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.362	0.477	0.451	0.360	0.355	0.298	-1.32%	2.24%	-2.73%
Spain	0.006	0.002	0.001	0.001	0.006	0.012	0.043	0.189	-13.56%	16.60%	25.35%
Turkey	0.032	0.024	0.049	0.047	0.029	0.018	0.011	0.008	4.36%	-4.96%	-8.62%
United Kingdom	3.275	2.124	1.311	1.482	1.723	1.797	1.887	1.581	-8.75%	2.78%	-0.57%
Other Europe	0.574	0.502	0.372	0.403	0.399	0.400	0.349	0.261	-4.25%	0.71%	-2.78%
Eurasia	**27.386**	**27.903**	**28.483**	**29.336**	**31.965**	**33.572**	**34.578**	**35.391**	**0.39%**	**1.16%**	**0.68%**
Kazakhstan	0.428	0.441	0.629	1.012	1.363	1.470	1.534	1.654	3.94%	8.03%	1.30%
Russia	21.698	22.372	21.665	21.336	22.714	23.747	24.396	24.720	-0.01%	0.47%	0.57%
Turkmenistan	2.225	1.600	2.571	3.148	3.760	4.358	5.283	6.152	1.46%	3.87%	3.34%
Ukraine	0.685	0.684	0.604	0.300	0.418	0.746	0.937	1.023	-1.25%	-3.63%	6.16%
Uzbekistan	2.119	2.130	2.454	3.121	3.121	2.520	1.668	1.083	1.48%	2.43%	-6.82%
Other Eurasia	0.232	0.677	0.558	0.419	0.589	0.732	0.760	0.759	9.16%	0.54%	1.70%
Middle East	**12.334**	**18.699**	**21.347**	**22.516**	**24.347**	**25.802**	**27.199**	**28.714**	**5.64%**	**1.32%**	**1.11%**
Iran	3.818	6.031	6.406	6.725	7.114	7.468	7.744	8.062	5.31%	1.05%	0.84%
Qatar	1.826	4.359	5.706	5.935	6.458	6.719	6.753	6.783	12.07%	1.25%	0.33%
Oman	0.748	1.035	1.134	1.228	1.333	1.384	1.422	1.455	4.25%	1.63%	0.59%
Saudi Arabia	2.860	3.424	3.916	4.304	4.848	5.326	5.745	6.193	3.19%	2.16%	1.65%
United Arab Emirates	1.828	1.992	2.005	1.889	1.885	1.923	2.089	2.215	0.93%	-0.62%	1.08%
Other Middle East	1.255	1.858	2.181	2.436	2.709	2.983	3.447	4.006	5.68%	2.19%	2.64%
Africa	**6.877**	**8.553**	**7.435**	**8.501**	**10.013**	**11.321**	**13.067**	**14.403**	**0.78%**	**3.02%**	**2.45%**
Algeria	3.613	3.465	3.429	3.527	3.841	4.123	4.296	3.924	-0.52%	1.14%	0.14%
Egypt	1.610	2.284	1.748	1.932	2.101	2.070	2.443	2.953	0.82%	1.86%	2.29%
Nigeria	0.862	1.317	1.225	1.308	1.757	2.015	2.677	3.644	3.58%	3.67%	4.99%
Other Africa	0.792	1.486	1.034	1.734	2.315	3.114	3.651	3.882	2.70%	8.40%	3.51%
Asia & Oceania	**12.907**	**17.527**	**19.384**	**24.767**	**28.242**	**30.475**	**31.606**	**30.980**	**4.15%**	**3.84%**	**0.62%**
Australia	1.266	1.708	3.520	6.008	6.158	6.254	6.545	6.688	10.77%	5.75%	0.55%
China	1.763	3.334	3.746	3.363	4.553	5.062	5.724	6.018	7.83%	1.97%	1.88%
India	1.153	1.848	1.185	1.493	1.827	1.886	1.658	1.275	0.28%	4.42%	-2.37%
Indonesia	2.406	3.047	2.547	3.245	3.887	5.063	6.683	7.927	0.57%	4.32%	4.87%
Japan	0.191	0.171	0.076	0.028	0.032	0.015	0.008	0.005	-8.73%	-8.35%	-11.66%
Malaysia	2.147	2.347	2.643	3.600	4.094	4.356	3.957	3.281	2.10%	4.47%	-1.46%
Myanmar	0.479	0.437	0.413	0.541	0.649	1.078	1.523	1.367	-1.45%	4.60%	5.10%
Pakistan	1.194	1.484	1.430	1.777	2.126	2.319	1.917	1.303	1.83%	4.04%	-3.21%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.015	0.006	0.005	0.002	0.001	0.000	-1.72%	-10.02%	-15.00%
Thailand	0.925	1.378	1.518	1.402	1.225	0.813	0.586	0.466	5.08%	-2.12%	-6.23%
Other Asia & Oceania	1.366	1.739	2.289	3.304	3.687	3.627	3.004	2.649	5.30%	4.88%	-2.18%
World	**104.006**	**120.194**	**127.870**	**141.867**	**154.396**	**163.890**	**172.272**	**176.718**	**2.09%**	**1.90%**	**0.90%**

LNG20_HRR Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**35.081**	**40.285**	**42.830**	**46.809**	**51.418**	**54.257**	**2.48%**	**2.02%**	**1.59%**
Canada	7.185	5.909	5.710	6.752	8.096	8.650	8.841	8.899	-2.27%	3.55%	0.63%
Mexico	1.349	1.799	1.251	0.668	0.864	1.511	2.959	4.296	-0.75%	-3.63%	11.28%
United States	18.927	22.382	28.119	32.865	33.869	36.648	39.619	41.062	4.04%	1.88%	1.29%
Central & South America	**5.318**	**6.267**	**6.532**	**6.913**	**7.749**	**8.327**	**8.774**	**9.138**	**2.08%**	**1.72%**	**1.11%**
Argentina	1.753	1.585	1.386	2.484	3.114	3.551	3.854	4.118	-2.32%	8.43%	1.88%
Brazil	0.432	0.570	0.762	0.338	0.155	0.096	0.047	0.023	5.84%	-14.74%	-11.83%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.050	0.075	-9.34%	-15.00%	19.79%
Colombia	0.253	0.454	0.502	0.427	0.315	0.224	0.197	0.292	7.08%	-4.55%	-0.50%
Peru	0.073	0.291	0.442	0.456	0.488	0.521	0.575	0.592	19.65%	1.01%	1.30%
Trinidad and Tobago	1.094	1.512	1.465	1.447	1.569	1.559	1.547	1.521	2.96%	0.69%	-0.21%
Venezuela	1.172	1.201	1.253	1.223	1.547	1.799	1.901	1.902	0.66%	2.13%	1.39%
Other Central & South America	0.472	0.589	0.696	0.526	0.555	0.574	0.604	0.614	3.96%	-2.23%	0.67%
Europe	**11.723**	**11.155**	**9.769**	**10.026**	**10.025**	**9.138**	**8.319**	**7.381**	**-1.81%**	**0.26%**	**-2.02%**
Austria	0.061	0.064	0.041	0.031	0.030	0.018	0.011	0.007	-3.86%	-3.06%	-9.33%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.012	0.018	0.012	0.026	-14.43%	-1.16%	5.44%
Germany	0.689	0.526	0.329	0.174	0.230	0.419	0.581	0.454	-7.12%	-3.54%	4.65%
Italy	0.426	0.297	0.239	0.159	0.246	0.226	0.144	0.120	-5.63%	0.30%	-4.69%
Netherlands	2.773	3.131	3.127	2.918	2.373	1.566	0.902	0.558	1.21%	-2.72%	-9.20%
Norway	3.196	3.849	3.743	4.193	4.419	4.264	3.954	3.764	1.59%	1.68%	-1.06%
Poland	0.214	0.215	0.182	0.150	0.091	0.050	0.072	0.117	-1.58%	-6.77%	1.71%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.362	0.474	0.453	0.361	0.358	0.291	-1.32%	2.26%	-2.89%
Spain	0.006	0.002	0.001	0.001	0.006	0.012	0.040	0.179	-13.55%	16.02%	25.28%
Turkey	0.032	0.024	0.048	0.048	0.029	0.018	0.011	0.007	4.32%	-4.95%	-9.03%
United Kingdom	3.275	2.124	1.308	1.463	1.734	1.791	1.891	1.599	-8.77%	2.86%	-0.54%
Other Europe	0.574	0.502	0.375	0.409	0.403	0.396	0.342	0.259	-4.18%	0.72%	-2.91%
Eurasia	**27.386**	**27.903**	**28.487**	**29.318**	**31.955**	**33.579**	**34.539**	**35.284**	**0.39%**	**1.16%**	**0.66%**
Kazakhstan	0.428	0.441	0.632	1.012	1.360	1.473	1.524	1.611	3.98%	7.96%	1.13%
Russia	21.698	22.372	21.661	21.321	22.688	23.710	24.413	24.712	-0.02%	0.46%	0.57%
Turkmenistan	2.225	1.600	2.572	3.157	3.803	4.412	5.239	6.089	1.46%	3.99%	3.19%
Ukraine	0.685	0.684	0.604	0.301	0.425	0.742	0.927	1.003	-1.25%	-3.46%	5.89%
Uzbekistan	2.119	2.130	2.459	3.117	3.117	2.509	1.666	1.090	1.50%	2.40%	-6.77%
Other Eurasia	0.232	0.677	0.558	0.410	0.562	0.732	0.769	0.781	9.16%	0.08%	2.21%
Middle East	**12.334**	**18.699**	**21.348**	**22.513**	**24.328**	**25.792**	**27.223**	**28.598**	**5.64%**	**1.32%**	**1.08%**
Iran	3.818	6.031	6.405	6.721	7.109	7.469	7.748	8.055	5.31%	1.05%	0.84%
Qatar	1.826	4.359	5.706	5.936	6.454	6.719	6.754	6.771	12.07%	1.24%	0.32%
Oman	0.748	1.035	1.134	1.227	1.333	1.383	1.427	1.454	4.24%	1.63%	0.58%
Saudi Arabia	2.860	3.424	3.917	4.303	4.846	5.323	5.748	6.200	3.19%	2.15%	1.66%
United Arab Emirates	1.828	1.992	2.006	1.888	1.878	1.926	2.083	2.204	0.93%	-0.65%	1.07%
Other Middle East	1.255	1.858	2.181	2.438	2.707	2.974	3.465	3.913	5.69%	2.18%	2.49%
Africa	**6.877**	**8.553**	**7.426**	**8.494**	**10.031**	**11.180**	**12.763**	**14.198**	**0.77%**	**3.05%**	**2.34%**
Algeria	3.613	3.465	3.429	3.527	3.833	4.088	4.198	3.907	-0.52%	1.12%	0.13%
Egypt	1.610	2.284	1.748	1.945	2.134	2.053	2.392	2.919	0.83%	2.02%	2.11%
Nigeria	0.862	1.317	1.216	1.298	1.759	1.979	2.544	3.534	3.50%	3.76%	4.76%
Other Africa	0.792	1.486	1.034	1.724	2.305	3.059	3.629	3.838	2.70%	8.35%	3.46%
Asia & Oceania	**12.907**	**17.527**	**19.398**	**24.812**	**28.085**	**30.049**	**30.665**	**29.934**	**4.16%**	**3.77%**	**0.43%**
Australia	1.266	1.708	3.524	6.002	6.167	6.253	6.495	6.746	10.78%	5.76%	0.60%
China	1.763	3.334	3.743	3.401	4.460	4.744	5.171	5.581	7.82%	1.77%	1.51%
India	1.153	1.848	1.192	1.501	1.842	1.868	1.635	1.214	0.33%	4.45%	-2.74%
Indonesia	2.406	3.047	2.548	3.244	3.873	4.978	6.477	7.502	0.57%	4.27%	4.51%
Japan	0.191	0.171	0.078	0.030	0.031	0.015	0.007	0.005	-8.59%	-8.65%	-12.01%
Malaysia	2.147	2.347	2.644	3.603	4.077	4.372	3.909	3.230	2.10%	4.43%	-1.54%
Myanmar	0.479	0.437	0.414	0.543	0.639	1.074	1.483	1.348	-1.43%	4.43%	5.11%
Pakistan	1.194	1.484	1.430	1.778	2.132	2.311	1.870	1.256	1.83%	4.07%	-3.47%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.015	0.007	0.005	0.002	0.001	0.000	-1.52%	-10.21%	-15.00%
Thailand	0.925	1.378	1.518	1.401	1.230	0.811	0.593	0.460	5.08%	-2.08%	-6.35%
Other Asia & Oceania	1.366	1.739	2.291	3.303	3.628	3.621	3.025	2.592	5.31%	4.70%	-2.22%
World	**104.006**	**120.194**	**128.042**	**142.361**	**155.003**	**164.873**	**173.702**	**178.790**	**2.10%**	**1.93%**	**0.96%**

LNG20_LRR Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**34.678**	**39.266**	**41.430**	**43.593**	**46.194**	**48.019**	**2.36%**	**1.79%**	**0.99%**
Canada	7.185	5.909	6.132	8.136	8.730	8.784	8.864	8.962	-1.57%	3.60%	0.17%
Mexico	1.349	1.799	1.251	0.833	1.633	3.170	4.866	5.053	-0.74%	2.70%	7.82%
United States	18.927	22.382	27.295	30.297	31.067	31.639	32.464	34.004	3.73%	1.30%	0.60%
Central & South America	**5.318**	**6.267**	**6.548**	**6.957**	**7.740**	**8.382**	**8.844**	**9.259**	**2.10%**	**1.69%**	**1.20%**
Argentina	1.753	1.585	1.386	2.486	3.116	3.559	3.855	4.103	-2.32%	8.44%	1.85%
Brazil	0.432	0.570	0.762	0.338	0.157	0.094	0.050	0.023	5.84%	-14.61%	-12.00%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.050	0.075	-9.34%	-15.00%	19.82%
Colombia	0.253	0.454	0.502	0.427	0.315	0.224	0.200	0.313	7.08%	-4.55%	-0.04%
Peru	0.073	0.291	0.441	0.453	0.487	0.547	0.577	0.588	19.63%	0.99%	1.26%
Trinidad and Tobago	1.094	1.512	1.483	1.495	1.568	1.574	1.582	1.561	3.09%	0.56%	-0.03%
Venezuela	1.172	1.201	1.253	1.223	1.548	1.799	1.913	1.866	0.66%	2.14%	1.26%
Other Central & South America	0.472	0.589	0.695	0.523	0.545	0.583	0.617	0.730	3.94%	-2.40%	1.96%
Europe	**11.723**	**11.155**	**9.766**	**10.052**	**10.022**	**9.115**	**8.373**	**7.362**	**-1.81%**	**0.26%**	**-2.04%**
Austria	0.061	0.064	0.041	0.031	0.030	0.017	0.011	0.007	-3.83%	-3.16%	-9.46%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.012	0.017	0.012	0.031	-14.43%	-0.83%	6.42%
Germany	0.689	0.526	0.329	0.176	0.229	0.425	0.582	0.446	-7.13%	-3.55%	4.55%
Italy	0.426	0.297	0.239	0.162	0.246	0.224	0.145	0.129	-5.63%	0.28%	-4.20%
Netherlands	2.773	3.131	3.130	2.920	2.371	1.554	0.905	0.553	1.22%	-2.74%	-9.25%
Norway	3.196	3.849	3.744	4.203	4.434	4.255	3.983	3.759	1.59%	1.71%	-1.09%
Poland	0.214	0.215	0.182	0.150	0.090	0.050	0.072	0.115	-1.58%	-6.85%	1.66%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.359	0.470	0.454	0.356	0.356	0.289	-1.40%	2.39%	-2.97%
Spain	0.006	0.002	0.001	0.001	0.007	0.012	0.046	0.185	-13.56%	17.34%	24.65%
Turkey	0.032	0.024	0.048	0.047	0.029	0.017	0.011	0.007	4.27%	-4.88%	-9.23%
United Kingdom	3.275	2.124	1.304	1.473	1.723	1.792	1.907	1.582	-8.80%	2.83%	-0.57%
Other Europe	0.574	0.502	0.375	0.412	0.397	0.395	0.343	0.258	-4.18%	0.58%	-2.84%
Eurasia	**27.386**	**27.903**	**28.484**	**29.338**	**31.942**	**33.605**	**34.585**	**35.424**	**0.39%**	**1.15%**	**0.69%**
Kazakhstan	0.428	0.441	0.632	1.014	1.364	1.476	1.502	1.653	3.97%	8.00%	1.29%
Russia	21.698	22.372	21.659	21.327	22.706	23.777	24.453	24.821	-0.02%	0.47%	0.60%
Turkmenistan	2.225	1.600	2.572	3.166	3.771	4.362	5.276	6.122	1.46%	3.90%	3.28%
Ukraine	0.685	0.684	0.604	0.299	0.412	0.744	0.938	1.004	-1.25%	-3.75%	6.12%
Uzbekistan	2.119	2.130	2.459	3.117	3.117	2.516	1.671	1.085	1.50%	2.40%	-6.79%
Other Eurasia	0.232	0.677	0.558	0.416	0.573	0.731	0.745	0.737	9.16%	0.26%	1.69%
Middle East	**12.334**	**18.699**	**21.352**	**22.511**	**24.340**	**25.812**	**27.320**	**28.805**	**5.64%**	**1.32%**	**1.13%**
Iran	3.818	6.031	6.406	6.723	7.110	7.476	7.746	8.075	5.31%	1.05%	0.85%
Qatar	1.826	4.359	5.706	5.934	6.468	6.720	6.752	6.790	12.07%	1.26%	0.32%
Oman	0.748	1.035	1.133	1.228	1.331	1.385	1.422	1.450	4.24%	1.62%	0.57%
Saudi Arabia	2.860	3.424	3.916	4.303	4.850	5.330	5.752	6.197	3.19%	2.16%	1.65%
United Arab Emirates	1.828	1.992	2.005	1.890	1.886	1.927	2.092	2.222	0.93%	-0.61%	1.10%
Other Middle East	1.255	1.858	2.185	2.432	2.695	2.974	3.557	4.072	5.70%	2.12%	2.79%
Africa	**6.877**	**8.553**	**7.440**	**8.589**	**10.034**	**11.480**	**13.203**	**14.365**	**0.79%**	**3.04%**	**2.42%**
Algeria	3.613	3.465	3.429	3.570	3.839	4.218	4.392	3.915	-0.52%	1.14%	0.13%
Egypt	1.610	2.284	1.747	1.945	2.138	2.063	2.422	2.940	0.82%	2.04%	2.15%
Nigeria	0.862	1.317	1.230	1.341	1.761	2.027	2.716	3.641	3.62%	3.66%	4.96%
Other Africa	0.792	1.486	1.034	1.733	2.295	3.171	3.672	3.870	2.70%	8.30%	3.54%
Asia & Oceania	**12.907**	**17.527**	**19.381**	**24.799**	**28.334**	**30.965**	**32.457**	**31.775**	**4.15%**	**3.87%**	**0.77%**
Australia	1.266	1.708	3.519	6.043	6.167	6.317	6.576	6.630	10.77%	5.77%	0.48%
China	1.763	3.334	3.747	3.359	4.631	5.403	6.224	6.298	7.83%	2.14%	2.07%
India	1.153	1.848	1.183	1.481	1.797	1.902	1.684	1.318	0.26%	4.27%	-2.05%
Indonesia	2.406	3.047	2.547	3.248	3.890	5.124	6.885	8.304	0.57%	4.33%	5.19%
Japan	0.191	0.171	0.075	0.031	0.032	0.016	0.008	0.005	-8.88%	-8.21%	-11.34%
Malaysia	2.147	2.347	2.643	3.593	4.101	4.366	3.971	3.295	2.10%	4.49%	-1.45%
Myanmar	0.479	0.437	0.413	0.541	0.657	1.090	1.551	1.373	-1.46%	4.75%	5.04%
Pakistan	1.194	1.484	1.430	1.775	2.114	2.311	1.957	1.337	1.82%	3.99%	-3.01%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.014	0.007	0.005	0.002	0.001	0.000	-1.89%	-9.87%	-15.00%
Thailand	0.925	1.378	1.519	1.405	1.227	0.809	0.578	0.479	5.09%	-2.11%	-6.08%
Other Asia & Oceania	1.366	1.739	2.290	3.316	3.713	3.625	3.022	2.736	5.30%	4.95%	-2.02%
World	**104.006**	**120.194**	**127.648**	**141.512**	**153.842**	**162.952**	**170.976**	**175.008**	**2.07%**	**1.88%**	**0.86%**

LNG20_Hi-D Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**35.054**	**40.733**	**43.705**	**47.405**	**50.535**	**52.525**	**2.47%**	**2.23%**	**1.23%**
Canada	7.185	5.909	5.976	7.866	8.709	8.781	8.864	8.943	-1.83%	3.84%	0.18%
Mexico	1.349	1.799	1.251	0.735	1.180	2.722	4.416	5.060	-0.74%	-0.58%	10.19%
United States	18.927	22.382	27.826	32.131	33.816	35.902	37.255	38.523	3.93%	1.97%	0.87%
Central & South America	**5.318**	**6.267**	**6.543**	**6.922**	**7.739**	**8.380**	**8.843**	**9.212**	**2.09%**	**1.69%**	**1.17%**
Argentina	1.753	1.585	1.386	2.484	3.116	3.558	3.857	4.114	-2.32%	8.44%	1.87%
Brazil	0.432	0.570	0.762	0.338	0.157	0.097	0.048	0.024	5.84%	-14.61%	-11.85%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.051	0.075	-9.34%	-15.00%	19.78%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.197	0.293	7.08%	-4.56%	-0.49%
Peru	0.073	0.291	0.442	0.453	0.485	0.551	0.575	0.590	19.66%	0.93%	1.31%
Trinidad and Tobago	1.094	1.512	1.477	1.465	1.568	1.560	1.585	1.559	3.04%	0.60%	-0.04%
Venezuela	1.172	1.201	1.253	1.224	1.547	1.811	1.914	1.899	0.66%	2.13%	1.38%
Other Central & South America	0.472	0.589	0.695	0.521	0.546	0.579	0.615	0.658	3.94%	-2.38%	1.25%
Europe	**11.723**	**11.155**	**9.771**	**10.024**	**10.059**	**9.156**	**8.405**	**7.386**	**-1.80%**	**0.29%**	**-2.04%**
Austria	0.061	0.064	0.042	0.033	0.030	0.017	0.011	0.007	-3.77%	-3.21%	-9.49%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.014	0.017	0.011	0.032	-14.44%	0.22%	5.95%
Germany	0.689	0.526	0.329	0.177	0.231	0.425	0.585	0.456	-7.11%	-3.50%	4.64%
Italy	0.426	0.297	0.239	0.160	0.247	0.227	0.147	0.121	-5.63%	0.35%	-4.64%
Netherlands	2.773	3.131	3.133	2.930	2.382	1.556	0.912	0.559	1.23%	-2.70%	-9.21%
Norway	3.196	3.849	3.740	4.169	4.437	4.257	3.997	3.744	1.58%	1.72%	-1.13%
Poland	0.214	0.215	0.182	0.151	0.090	0.051	0.074	0.116	-1.58%	-6.80%	1.72%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.360	0.473	0.455	0.364	0.365	0.294	-1.36%	2.35%	-2.87%
Spain	0.006	0.002	0.001	0.001	0.006	0.012	0.041	0.182	-13.56%	16.23%	25.29%
Turkey	0.032	0.024	0.049	0.048	0.029	0.018	0.011	0.007	4.52%	-5.12%	-9.03%
United Kingdom	3.275	2.124	1.305	1.473	1.740	1.812	1.903	1.609	-8.79%	2.92%	-0.52%
Other Europe	0.574	0.502	0.377	0.404	0.400	0.401	0.348	0.260	-4.11%	0.59%	-2.84%
Eurasia	**27.386**	**27.903**	**28.485**	**29.347**	**31.950**	**33.550**	**34.530**	**35.445**	**0.39%**	**1.15%**	**0.69%**
Kazakhstan	0.428	0.441	0.631	1.014	1.351	1.459	1.518	1.631	3.96%	7.91%	1.26%
Russia	21.698	22.372	21.663	21.326	22.711	23.729	24.403	24.886	-0.02%	0.47%	0.61%
Turkmenistan	2.225	1.600	2.570	3.175	3.780	4.364	5.263	6.118	1.45%	3.93%	3.26%
Ukraine	0.685	0.684	0.604	0.302	0.417	0.747	0.927	0.963	-1.25%	-3.64%	5.74%
Uzbekistan	2.119	2.130	2.458	3.118	3.118	2.520	1.669	1.080	1.50%	2.41%	-6.82%
Other Eurasia	0.232	0.677	0.558	0.412	0.573	0.731	0.750	0.767	9.16%	0.26%	1.96%
Middle East	**12.334**	**18.699**	**21.348**	**22.511**	**24.349**	**25.807**	**27.242**	**28.733**	**5.64%**	**1.32%**	**1.11%**
Iran	3.818	6.031	6.406	6.726	7.113	7.479	7.751	8.048	5.31%	1.05%	0.83%
Qatar	1.826	4.359	5.704	5.931	6.471	6.719	6.752	6.771	12.07%	1.27%	0.30%
Oman	0.748	1.035	1.134	1.228	1.330	1.385	1.424	1.459	4.24%	1.62%	0.62%
Saudi Arabia	2.860	3.424	3.916	4.304	4.847	5.322	5.755	6.213	3.19%	2.16%	1.67%
United Arab Emirates	1.828	1.992	2.007	1.894	1.879	1.926	2.077	2.218	0.94%	-0.66%	1.11%
Other Middle East	1.255	1.858	2.182	2.429	2.707	2.976	3.483	4.023	5.69%	2.18%	2.68%
Africa	**6.877**	**8.553**	**7.438**	**8.519**	**10.005**	**11.370**	**13.125**	**14.417**	**0.79%**	**3.01%**	**2.47%**
Algeria	3.613	3.465	3.428	3.530	3.838	4.151	4.345	3.927	-0.52%	1.14%	0.15%
Egypt	1.610	2.284	1.748	1.938	2.088	2.064	2.443	2.969	0.83%	1.79%	2.37%
Nigeria	0.862	1.317	1.228	1.318	1.761	2.023	2.675	3.635	3.60%	3.67%	4.95%
Other Africa	0.792	1.486	1.034	1.733	2.318	3.132	3.662	3.886	2.70%	8.41%	3.50%
Asia & Oceania	**12.907**	**17.527**	**19.390**	**24.768**	**28.262**	**30.626**	**31.814**	**31.271**	**4.15%**	**3.84%**	**0.68%**
Australia	1.266	1.708	3.526	6.000	6.157	6.282	6.535	6.660	10.79%	5.73%	0.53%
China	1.763	3.334	3.740	3.365	4.576	5.151	5.813	6.086	7.81%	2.04%	1.92%
India	1.153	1.848	1.187	1.491	1.824	1.894	1.668	1.280	0.29%	4.39%	-2.33%
Indonesia	2.406	3.047	2.550	3.249	3.893	5.095	6.758	8.101	0.58%	4.32%	5.01%
Japan	0.191	0.171	0.077	0.029	0.032	0.015	0.008	0.005	-8.71%	-8.38%	-11.51%
Malaysia	2.147	2.347	2.644	3.596	4.079	4.375	3.957	3.271	2.10%	4.43%	-1.46%
Myanmar	0.479	0.437	0.414	0.541	0.647	1.075	1.543	1.369	-1.45%	4.58%	5.12%
Pakistan	1.194	1.484	1.430	1.776	2.115	2.312	1.931	1.323	1.82%	3.99%	-3.08%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.015	0.006	0.005	0.002	0.001	0.000	-1.73%	-10.02%	-15.00%
Thailand	0.925	1.378	1.517	1.402	1.228	0.812	0.583	0.470	5.07%	-2.09%	-6.20%
Other Asia & Oceania	1.366	1.739	2.291	3.314	3.706	3.612	3.017	2.705	5.31%	4.93%	-2.08%
World	**104.006**	**120.194**	**128.028**	**142.825**	**156.071**	**166.293**	**174.495**	**178.989**	**2.10%**	**2.00%**	**0.92%**

LNG20_Ref12 Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**34.926**	**39.808**	**42.166**	**44.608**	**45.533**	**46.498**	**2.43%**	**1.90%**	**0.65%**
Canada	7.185	5.909	5.884	7.562	8.596	8.775	8.858	8.919	-1.98%	3.86%	0.25%
Mexico	1.349	1.799	1.251	0.711	0.958	2.251	3.467	4.873	-0.74%	-2.63%	11.45%
United States	18.927	22.382	27.791	31.535	32.612	33.582	33.208	32.707	3.92%	1.61%	0.02%
Central & South America	**5.318**	**6.267**	**6.544**	**6.940**	**7.749**	**8.382**	**8.843**	**9.300**	**2.10%**	**1.70%**	**1.22%**
Argentina	1.753	1.585	1.386	2.483	3.114	3.559	3.856	4.106	-2.32%	8.43%	1.86%
Brazil	0.432	0.570	0.762	0.338	0.158	0.095	0.048	0.023	5.84%	-14.55%	-11.97%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.051	0.076	-9.34%	-15.00%	19.85%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.203	0.315	7.08%	-4.55%	0.00%
Peru	0.073	0.291	0.440	0.455	0.486	0.546	0.575	0.594	19.62%	0.98%	1.35%
Trinidad and Tobago	1.094	1.512	1.480	1.470	1.571	1.570	1.588	1.557	3.07%	0.60%	-0.06%
Venezuela	1.172	1.201	1.253	1.223	1.548	1.808	1.896	1.859	0.66%	2.14%	1.23%
Other Central & South America	0.472	0.589	0.695	0.532	0.551	0.578	0.626	0.770	3.94%	-2.29%	2.26%
Europe	**11.723**	**11.155**	**9.767**	**10.024**	**10.050**	**9.165**	**8.366**	**7.399**	**-1.81%**	**0.29%**	**-2.02%**
Austria	0.061	0.064	0.041	0.032	0.030	0.017	0.011	0.007	-3.82%	-3.29%	-9.40%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.012	0.018	0.012	0.031	-14.43%	-0.79%	6.38%
Germany	0.689	0.526	0.330	0.182	0.229	0.427	0.585	0.448	-7.10%	-3.56%	4.56%
Italy	0.426	0.297	0.239	0.160	0.246	0.226	0.146	0.123	-5.63%	0.31%	-4.52%
Netherlands	2.773	3.131	3.129	2.913	2.378	1.566	0.911	0.554	1.21%	-2.71%	-9.25%
Norway	3.196	3.849	3.742	4.182	4.423	4.268	3.965	3.786	1.59%	1.68%	-1.03%
Poland	0.214	0.215	0.183	0.149	0.090	0.051	0.071	0.118	-1.55%	-6.89%	1.83%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.362	0.475	0.452	0.361	0.363	0.293	-1.32%	2.26%	-2.86%
Spain	0.006	0.002	0.001	0.001	0.008	0.012	0.040	0.176	-13.55%	19.45%	22.77%
Turkey	0.032	0.024	0.048	0.047	0.029	0.018	0.011	0.007	4.19%	-4.80%	-9.02%
United Kingdom	3.275	2.124	1.306	1.472	1.752	1.801	1.902	1.599	-8.78%	2.98%	-0.61%
Other Europe	0.574	0.502	0.373	0.406	0.401	0.402	0.348	0.258	-4.24%	0.74%	-2.90%
Eurasia	**27.386**	**27.903**	**28.486**	**29.334**	**31.995**	**33.543**	**34.616**	**35.451**	**0.39%**	**1.17%**	**0.69%**
Kazakhstan	0.428	0.441	0.632	1.007	1.348	1.470	1.547	1.635	3.98%	7.87%	1.29%
Russia	21.698	22.372	21.659	21.322	22.713	23.722	24.451	24.843	-0.02%	0.48%	0.60%
Turkmenistan	2.225	1.600	2.572	3.162	3.790	4.351	5.264	6.146	1.46%	3.95%	3.28%
Ukraine	0.685	0.684	0.604	0.301	0.439	0.761	0.945	0.978	-1.25%	-3.14%	5.49%
Uzbekistan	2.119	2.130	2.461	3.130	3.130	2.510	1.656	1.080	1.51%	2.43%	-6.85%
Other Eurasia	0.232	0.677	0.558	0.412	0.575	0.731	0.754	0.769	9.16%	0.30%	1.96%
Middle East	**12.334**	**18.699**	**21.346**	**22.521**	**24.345**	**25.793**	**27.399**	**28.716**	**5.64%**	**1.32%**	**1.11%**
Iran	3.818	6.031	6.405	6.727	7.114	7.473	7.756	8.036	5.31%	1.06%	0.82%
Qatar	1.826	4.359	5.704	5.934	6.469	6.719	6.758	6.779	12.07%	1.27%	0.31%
Oman	0.748	1.035	1.133	1.227	1.331	1.384	1.423	1.454	4.23%	1.62%	0.59%
Saudi Arabia	2.860	3.424	3.916	4.303	4.846	5.325	5.762	6.230	3.19%	2.15%	1.69%
United Arab Emirates	1.828	1.992	2.008	1.891	1.880	1.929	2.081	2.240	0.94%	-0.65%	1.17%
Other Middle East	1.255	1.858	2.181	2.439	2.705	2.963	3.620	3.977	5.68%	2.18%	2.60%
Africa	**6.877**	**8.553**	**7.425**	**8.504**	**10.019**	**11.440**	**13.234**	**14.404**	**0.77%**	**3.04%**	**2.45%**
Algeria	3.613	3.465	3.429	3.545	3.832	4.193	4.384	3.924	-0.52%	1.12%	0.16%
Egypt	1.610	2.284	1.748	1.941	2.128	2.071	2.436	2.972	0.83%	1.99%	2.25%
Nigeria	0.862	1.317	1.214	1.292	1.757	2.045	2.747	3.636	3.49%	3.76%	4.97%
Other Africa	0.792	1.486	1.034	1.726	2.302	3.132	3.667	3.871	2.70%	8.34%	3.53%
Asia & Oceania	**12.907**	**17.527**	**19.398**	**24.714**	**28.180**	**30.908**	**33.413**	**32.441**	**4.16%**	**3.80%**	**0.94%**
Australia	1.266	1.708	3.527	6.005	6.167	6.282	6.603	6.603	10.79%	5.75%	0.46%
China	1.763	3.334	3.748	3.320	4.536	5.404	6.748	6.725	7.83%	1.93%	2.66%
India	1.153	1.848	1.186	1.476	1.765	1.870	1.737	1.350	0.28%	4.06%	-1.77%
Indonesia	2.406	3.047	2.553	3.249	3.889	5.114	7.149	8.433	0.59%	4.30%	5.30%
Japan	0.191	0.171	0.076	0.029	0.032	0.015	0.009	0.006	-8.84%	-8.31%	-10.77%
Malaysia	2.147	2.347	2.644	3.592	4.077	4.360	3.977	3.316	2.10%	4.43%	-1.37%
Myanmar	0.479	0.437	0.413	0.541	0.664	1.119	1.559	1.348	-1.46%	4.87%	4.83%
Pakistan	1.194	1.484	1.430	1.773	2.109	2.312	2.022	1.412	1.82%	3.96%	-2.64%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.014	0.007	0.005	0.002	0.001	0.000	-1.86%	-9.89%	-15.00%
Thailand	0.925	1.378	1.519	1.403	1.234	0.810	0.578	0.481	5.08%	-2.06%	-6.09%
Other Asia & Oceania	1.366	1.739	2.289	3.320	3.702	3.620	3.031	2.767	5.30%	4.93%	-1.92%
World	**104.006**	**120.194**	**127.893**	**141.845**	**154.503**	**163.840**	**171.403**	**174.208**	**2.09%**	**1.91%**	**0.80%**

LNG20_HRR12 Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**35.098**	**40.270**	**42.813**	**45.448**	**46.475**	**47.460**	**2.48%**	**2.01%**	**0.69%**
Canada	7.185	5.909	5.694	6.644	7.966	8.556	8.820	8.892	-2.30%	3.41%	0.74%
Mexico	1.349	1.799	1.251	0.661	0.873	1.283	2.426	3.213	-0.75%	-3.53%	9.07%
United States	18.927	22.382	28.152	32.965	33.974	35.609	35.229	35.355	4.05%	1.90%	0.27%
Central & South America	**5.318**	**6.267**	**6.545**	**6.934**	**7.742**	**8.384**	**8.844**	**9.295**	**2.10%**	**1.69%**	**1.23%**
Argentina	1.753	1.585	1.386	2.483	3.117	3.560	3.853	4.101	-2.32%	8.44%	1.84%
Brazil	0.432	0.570	0.762	0.338	0.156	0.094	0.048	0.023	5.84%	-14.68%	-11.89%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.050	0.075	-9.34%	-15.00%	19.80%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.205	0.318	7.08%	-4.55%	0.05%
Peru	0.073	0.291	0.442	0.454	0.486	0.545	0.572	0.596	19.66%	0.96%	1.36%
Trinidad and Tobago	1.094	1.512	1.476	1.470	1.567	1.572	1.588	1.561	3.04%	0.59%	-0.02%
Venezuela	1.172	1.201	1.253	1.224	1.548	1.805	1.894	1.861	0.66%	2.14%	1.24%
Other Central & South America	0.472	0.589	0.698	0.526	0.549	0.583	0.635	0.760	3.99%	-2.38%	2.20%
Europe	**11.723**	**11.155**	**9.771**	**10.021**	**10.027**	**9.144**	**8.363**	**7.376**	**-1.81%**	**0.26%**	**-2.03%**
Austria	0.061	0.064	0.041	0.032	0.029	0.017	0.011	0.007	-3.80%	-3.39%	-9.30%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.011	0.018	0.012	0.025	-14.43%	-2.05%	5.88%
Germany	0.689	0.526	0.329	0.181	0.230	0.423	0.588	0.445	-7.12%	-3.54%	4.52%
Italy	0.426	0.297	0.239	0.160	0.245	0.226	0.147	0.121	-5.63%	0.26%	-4.58%
Netherlands	2.773	3.131	3.129	2.917	2.378	1.563	0.915	0.539	1.21%	-2.71%	-9.42%
Norway	3.196	3.849	3.740	4.174	4.425	4.267	3.957	3.792	1.58%	1.70%	-1.02%
Poland	0.214	0.215	0.184	0.150	0.089	0.050	0.072	0.112	-1.51%	-6.95%	1.49%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.360	0.470	0.455	0.366	0.367	0.288	-1.38%	2.37%	-2.99%
Spain	0.006	0.002	0.001	0.001	0.009	0.012	0.046	0.192	-13.56%	20.25%	22.93%
Turkey	0.032	0.024	0.049	0.047	0.029	0.018	0.011	0.007	4.56%	-5.22%	-9.10%
United Kingdom	3.275	2.124	1.310	1.479	1.731	1.787	1.891	1.589	-8.76%	2.83%	-0.57%
Other Europe	0.574	0.502	0.376	0.405	0.398	0.398	0.345	0.258	-4.16%	0.57%	-2.83%
Eurasia	**27.386**	**27.903**	**28.478**	**29.343**	**32.002**	**33.585**	**34.591**	**35.508**	**0.39%**	**1.17%**	**0.70%**
Kazakhstan	0.428	0.441	0.630	1.012	1.356	1.477	1.523	1.596	3.95%	7.96%	1.09%
Russia	21.698	22.372	21.662	21.327	22.718	23.696	24.447	25.030	-0.02%	0.48%	0.65%
Turkmenistan	2.225	1.600	2.569	3.158	3.790	4.406	5.282	6.096	1.45%	3.97%	3.22%
Ukraine	0.685	0.684	0.604	0.310	0.439	0.764	0.922	0.955	-1.25%	-3.14%	5.32%
Uzbekistan	2.119	2.130	2.455	3.119	3.122	2.517	1.666	1.075	1.49%	2.43%	-6.86%
Other Eurasia	0.232	0.677	0.558	0.417	0.578	0.725	0.752	0.755	9.16%	0.35%	1.80%
Middle East	**12.334**	**18.699**	**21.351**	**22.506**	**24.330**	**25.805**	**27.330**	**28.810**	**5.64%**	**1.31%**	**1.13%**
Iran	3.818	6.031	6.406	6.720	7.108	7.467	7.718	8.083	5.31%	1.04%	0.86%
Qatar	1.826	4.359	5.705	5.932	6.456	6.720	6.753	6.786	12.07%	1.24%	0.33%
Oman	0.748	1.035	1.133	1.227	1.333	1.383	1.420	1.454	4.24%	1.64%	0.58%
Saudi Arabia	2.860	3.424	3.916	4.303	4.854	5.330	5.743	6.201	3.19%	2.17%	1.65%
United Arab Emirates	1.828	1.992	2.007	1.893	1.880	1.928	2.090	2.213	0.94%	-0.65%	1.09%
Other Middle East	1.255	1.858	2.183	2.431	2.699	2.976	3.605	4.073	5.70%	2.14%	2.78%
Africa	**6.877**	**8.553**	**7.429**	**8.510**	**10.022**	**11.426**	**13.348**	**14.538**	**0.78%**	**3.04%**	**2.51%**
Algeria	3.613	3.465	3.429	3.537	3.833	4.179	4.398	3.937	-0.52%	1.12%	0.18%
Egypt	1.610	2.284	1.749	1.943	2.137	2.062	2.420	2.952	0.83%	2.03%	2.18%
Nigeria	0.862	1.317	1.218	1.306	1.756	2.035	2.749	3.630	3.52%	3.73%	4.96%
Other Africa	0.792	1.486	1.034	1.725	2.296	3.150	3.782	4.019	2.70%	8.30%	3.80%
Asia & Oceania	**12.907**	**17.527**	**19.390**	**24.704**	**28.041**	**30.848**	**33.412**	**32.438**	**4.15%**	**3.76%**	**0.98%**
Australia	1.266	1.708	3.519	6.002	6.162	6.303	6.601	6.579	10.77%	5.76%	0.44%
China	1.763	3.334	3.746	3.314	4.445	5.336	6.704	6.724	7.83%	1.73%	2.80%
India	1.153	1.848	1.188	1.479	1.765	1.867	1.743	1.349	0.30%	4.04%	-1.78%
Indonesia	2.406	3.047	2.552	3.249	3.886	5.115	7.169	8.427	0.59%	4.29%	5.30%
Japan	0.191	0.171	0.076	0.029	0.031	0.015	0.009	0.006	-8.76%	-8.53%	-10.81%
Malaysia	2.147	2.347	2.643	3.591	4.064	4.358	3.982	3.323	2.10%	4.40%	-1.33%
Myanmar	0.479	0.437	0.414	0.541	0.659	1.115	1.558	1.349	-1.45%	4.76%	4.90%
Pakistan	1.194	1.484	1.430	1.772	2.107	2.307	2.030	1.416	1.82%	3.95%	-2.62%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.014	0.007	0.005	0.002	0.001	0.000	-1.79%	-9.96%	-15.00%
Thailand	0.925	1.378	1.519	1.404	1.232	0.807	0.581	0.483	5.08%	-2.08%	-6.04%
Other Asia & Oceania	1.366	1.739	2.290	3.316	3.685	3.624	3.036	2.782	5.30%	4.87%	-1.86%
World	**104.006**	**120.194**	**128.062**	**142.289**	**154.977**	**164.640**	**172.364**	**175.426**	**2.10%**	**1.93%**	**0.83%**

LNG20_LRR12 Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**34.714**	**39.293**	**41.498**	**43.416**	**44.862**	**45.568**	**2.37%**	**1.80%**	**0.63%**
Canada	7.185	5.909	6.097	8.098	8.740	8.807	8.882	8.933	-1.63%	3.67%	0.15%
Mexico	1.349	1.799	1.251	0.823	1.586	3.068	4.765	5.062	-0.74%	2.40%	8.04%
United States	18.927	22.382	27.365	30.371	31.172	31.541	31.215	31.574	3.76%	1.31%	0.09%
Central & South America	**5.318**	**6.267**	**6.546**	**6.945**	**7.743**	**8.394**	**8.835**	**9.282**	**2.10%**	**1.69%**	**1.22%**
Argentina	1.753	1.585	1.386	2.483	3.116	3.559	3.856	4.107	-2.32%	8.44%	1.86%
Brazil	0.432	0.570	0.762	0.338	0.158	0.097	0.048	0.023	5.84%	-14.58%	-11.98%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.050	0.075	-9.34%	-15.00%	19.78%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.201	0.284	7.08%	-4.56%	-0.67%
Peru	0.073	0.291	0.442	0.452	0.488	0.550	0.568	0.596	19.67%	0.99%	1.33%
Trinidad and Tobago	1.094	1.512	1.480	1.482	1.567	1.583	1.587	1.558	3.07%	0.57%	-0.04%
Venezuela	1.172	1.201	1.253	1.225	1.546	1.791	1.895	1.892	0.66%	2.13%	1.36%
Other Central & South America	0.472	0.589	0.695	0.527	0.549	0.589	0.630	0.746	3.95%	-2.34%	2.07%
Europe	**11.723**	**11.155**	**9.766**	**10.044**	**10.034**	**9.125**	**8.396**	**7.349**	**-1.81%**	**0.27%**	**-2.05%**
Austria	0.061	0.064	0.041	0.032	0.030	0.017	0.011	0.007	-3.86%	-3.10%	-9.54%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.013	0.017	0.011	0.029	-14.44%	0.01%	5.23%
Germany	0.689	0.526	0.329	0.179	0.232	0.436	0.579	0.444	-7.12%	-3.42%	4.42%
Italy	0.426	0.297	0.239	0.163	0.245	0.226	0.145	0.127	-5.63%	0.27%	-4.27%
Netherlands	2.773	3.131	3.133	2.934	2.376	1.547	0.901	0.560	1.23%	-2.73%	-9.18%
Norway	3.196	3.849	3.734	4.163	4.419	4.236	4.018	3.758	1.57%	1.70%	-1.07%
Poland	0.214	0.215	0.183	0.150	0.090	0.050	0.059	0.108	-1.56%	-6.81%	1.19%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.361	0.474	0.454	0.364	0.362	0.292	-1.34%	2.32%	-2.91%
Spain	0.006	0.002	0.001	0.001	0.008	0.012	0.043	0.191	-13.56%	18.89%	23.81%
Turkey	0.032	0.024	0.047	0.048	0.029	0.018	0.011	0.007	4.12%	-4.72%	-8.85%
United Kingdom	3.275	2.124	1.310	1.487	1.736	1.804	1.909	1.565	-8.75%	2.86%	-0.69%
Other Europe	0.574	0.502	0.374	0.408	0.401	0.397	0.346	0.260	-4.20%	0.69%	-2.84%
Eurasia	**27.386**	**27.903**	**28.488**	**29.355**	**31.986**	**33.590**	**34.534**	**35.416**	**0.40%**	**1.16%**	**0.68%**
Kazakhstan	0.428	0.441	0.632	1.014	1.355	1.473	1.529	1.640	3.98%	7.93%	1.28%
Russia	21.698	22.372	21.653	21.329	22.670	23.748	24.423	24.852	-0.02%	0.46%	0.61%
Turkmenistan	2.225	1.600	2.580	3.172	3.823	4.371	5.225	6.120	1.49%	4.01%	3.19%
Ukraine	0.685	0.684	0.604	0.301	0.433	0.748	0.939	0.962	-1.25%	-3.27%	5.47%
Uzbekistan	2.119	2.130	2.461	3.112	3.112	2.519	1.674	1.084	1.51%	2.37%	-6.79%
Other Eurasia	0.232	0.677	0.558	0.426	0.592	0.731	0.745	0.757	9.15%	0.59%	1.66%
Middle East	**12.334**	**18.699**	**21.349**	**22.515**	**24.354**	**25.826**	**27.423**	**28.838**	**5.64%**	**1.33%**	**1.13%**
Iran	3.818	6.031	6.406	6.726	7.109	7.475	7.719	8.065	5.31%	1.05%	0.84%
Qatar	1.826	4.359	5.703	5.929	6.478	6.722	6.759	6.782	12.06%	1.28%	0.31%
Oman	0.748	1.035	1.134	1.228	1.334	1.384	1.422	1.453	4.24%	1.64%	0.57%
Saudi Arabia	2.860	3.424	3.915	4.304	4.847	5.325	5.764	6.231	3.19%	2.16%	1.69%
United Arab Emirates	1.828	1.992	2.008	1.897	1.878	1.926	2.087	2.228	0.94%	-0.66%	1.14%
Other Middle East	1.255	1.858	2.183	2.432	2.708	2.994	3.672	4.080	5.69%	2.18%	2.77%
Africa	**6.877**	**8.553**	**7.441**	**8.586**	**10.015**	**11.534**	**13.250**	**14.381**	**0.79%**	**3.02%**	**2.44%**
Algeria	3.613	3.465	3.429	3.577	3.839	4.251	4.396	3.921	-0.52%	1.14%	0.14%
Egypt	1.610	2.284	1.749	1.938	2.107	2.058	2.443	2.958	0.83%	1.88%	2.29%
Nigeria	0.862	1.317	1.229	1.338	1.757	2.027	2.747	3.645	3.61%	3.64%	4.98%
Other Africa	0.792	1.486	1.034	1.734	2.311	3.198	3.665	3.858	2.70%	8.38%	3.47%
Asia & Oceania	**12.907**	**17.527**	**19.383**	**24.753**	**28.276**	**31.061**	**33.312**	**32.447**	**4.15%**	**3.85%**	**0.92%**
Australia	1.266	1.708	3.520	6.028	6.155	6.282	6.631	6.712	10.77%	5.75%	0.58%
China	1.763	3.334	3.741	3.332	4.589	5.493	6.628	6.636	7.82%	2.06%	2.49%
India	1.153	1.848	1.184	1.475	1.761	1.888	1.733	1.350	0.27%	4.05%	-1.76%
Indonesia	2.406	3.047	2.554	3.249	3.895	5.152	7.128	8.401	0.60%	4.31%	5.26%
Japan	0.191	0.171	0.075	0.030	0.032	0.016	0.009	0.006	-8.94%	-8.07%	-10.95%
Malaysia	2.147	2.347	2.643	3.592	4.094	4.353	3.977	3.330	2.10%	4.47%	-1.37%
Myanmar	0.479	0.437	0.413	0.541	0.663	1.126	1.559	1.336	-1.46%	4.84%	4.79%
Pakistan	1.194	1.484	1.430	1.773	2.108	2.310	2.026	1.419	1.82%	3.96%	-2.60%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.014	0.007	0.005	0.002	0.001	0.000	-1.90%	-9.86%	-15.00%
Thailand	0.925	1.378	1.519	1.404	1.231	0.810	0.578	0.481	5.08%	-2.08%	-6.07%
Other Asia & Oceania	1.366	1.739	2.290	3.322	3.744	3.629	3.043	2.776	5.30%	5.04%	-1.97%
World	**104.006**	**120.194**	**127.688**	**141.491**	**153.907**	**162.946**	**170.611**	**173.282**	**2.07%**	**1.89%**	**0.79%**

LNG20_Hi-D12 Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**35.077**	**40.793**	**43.757**	**46.889**	**48.100**	**49.000**	**2.48%**	**2.24%**	**0.76%**
Canada	7.185	5.909	5.959	7.794	8.705	8.792	8.858	8.923	-1.85%	3.86%	0.16%
Mexico	1.349	1.799	1.251	0.733	1.100	2.573	3.996	5.090	-0.74%	-1.28%	10.75%
United States	18.927	22.382	27.867	32.266	33.951	35.525	35.246	34.988	3.94%	1.99%	0.20%
Central & South America	**5.318**	**6.267**	**6.540**	**6.923**	**7.748**	**8.392**	**8.824**	**9.327**	**2.09%**	**1.71%**	**1.24%**
Argentina	1.753	1.585	1.386	2.484	3.117	3.559	3.847	4.086	-2.32%	8.44%	1.82%
Brazil	0.432	0.570	0.762	0.338	0.156	0.097	0.048	0.023	5.84%	-14.67%	-11.93%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.050	0.075	-9.34%	-15.00%	19.79%
Colombia	0.253	0.454	0.502	0.427	0.315	0.223	0.203	0.280	7.08%	-4.54%	-0.79%
Peru	0.073	0.291	0.442	0.455	0.486	0.548	0.573	0.590	19.65%	0.97%	1.29%
Trinidad and Tobago	1.094	1.512	1.475	1.466	1.567	1.574	1.586	1.565	3.03%	0.61%	-0.01%
Venezuela	1.172	1.201	1.253	1.222	1.549	1.804	1.881	1.916	0.66%	2.14%	1.43%
Other Central & South America	0.472	0.589	0.695	0.519	0.552	0.585	0.637	0.792	3.94%	-2.28%	2.43%
Europe	**11.723**	**11.155**	**9.768**	**10.039**	**10.021**	**9.120**	**8.354**	**7.386**	**-1.81%**	**0.26%**	**-2.01%**
Austria	0.061	0.064	0.041	0.032	0.029	0.017	0.011	0.007	-3.82%	-3.37%	-9.23%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.013	0.017	0.011	0.023	-14.44%	-0.49%	4.16%
Germany	0.689	0.526	0.329	0.177	0.231	0.416	0.585	0.452	-7.13%	-3.48%	4.58%
Italy	0.426	0.297	0.239	0.164	0.246	0.222	0.144	0.124	-5.63%	0.31%	-4.45%
Netherlands	2.773	3.131	3.135	2.937	2.373	1.543	0.899	0.560	1.23%	-2.75%	-9.17%
Norway	3.196	3.849	3.740	4.172	4.429	4.272	3.963	3.769	1.58%	1.71%	-1.07%
Poland	0.214	0.215	0.182	0.149	0.090	0.050	0.061	0.110	-1.59%	-6.77%	1.33%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.361	0.474	0.453	0.362	0.364	0.295	-1.34%	2.29%	-2.80%
Spain	0.006	0.002	0.001	0.001	0.007	0.012	0.044	0.182	-13.56%	17.08%	24.71%
Turkey	0.032	0.024	0.048	0.048	0.029	0.018	0.011	0.007	4.18%	-4.84%	-8.88%
United Kingdom	3.275	2.124	1.305	1.473	1.724	1.793	1.914	1.593	-8.79%	2.83%	-0.53%
Other Europe	0.574	0.502	0.374	0.405	0.397	0.397	0.346	0.262	-4.20%	0.60%	-2.73%
Eurasia	**27.386**	**27.903**	**28.476**	**29.330**	**31.974**	**33.578**	**34.583**	**35.467**	**0.39%**	**1.17%**	**0.69%**
Kazakhstan	0.428	0.441	0.632	1.019	1.363	1.478	1.527	1.624	3.98%	7.99%	1.17%
Russia	21.698	22.372	21.659	21.312	22.683	23.693	24.430	24.870	-0.02%	0.46%	0.62%
Turkmenistan	2.225	1.600	2.568	3.149	3.786	4.394	5.288	6.149	1.44%	3.96%	3.29%
Ukraine	0.685	0.684	0.604	0.302	0.432	0.768	0.922	0.979	-1.25%	-3.29%	5.60%
Uzbekistan	2.119	2.130	2.455	3.123	3.122	2.519	1.670	1.083	1.48%	2.43%	-6.81%
Other Eurasia	0.232	0.677	0.558	0.426	0.587	0.726	0.746	0.762	9.16%	0.51%	1.75%
Middle East	**12.334**	**18.699**	**21.350**	**22.515**	**24.363**	**25.821**	**27.413**	**28.748**	**5.64%**	**1.33%**	**1.11%**
Iran	3.818	6.031	6.406	6.726	7.114	7.470	7.738	8.054	5.31%	1.05%	0.83%
Qatar	1.826	4.359	5.703	5.926	6.477	6.721	6.759	6.783	12.06%	1.28%	0.31%
Oman	0.748	1.035	1.134	1.228	1.331	1.386	1.424	1.451	4.24%	1.62%	0.58%
Saudi Arabia	2.860	3.424	3.917	4.303	4.852	5.333	5.759	6.208	3.19%	2.16%	1.66%
United Arab Emirates	1.828	1.992	2.009	1.899	1.877	1.927	2.085	2.222	0.95%	-0.68%	1.13%
Other Middle East	1.255	1.858	2.182	2.433	2.712	2.985	3.649	4.029	5.69%	2.20%	2.68%
Africa	**6.877**	**8.553**	**7.439**	**8.535**	**10.013**	**11.477**	**13.256**	**14.395**	**0.79%**	**3.02%**	**2.45%**
Algeria	3.613	3.465	3.429	3.540	3.838	4.205	4.381	3.917	-0.52%	1.13%	0.14%
Egypt	1.610	2.284	1.748	1.936	2.104	2.071	2.441	2.952	0.83%	1.87%	2.28%
Nigeria	0.862	1.317	1.229	1.331	1.761	2.040	2.756	3.657	3.61%	3.66%	4.99%
Other Africa	0.792	1.486	1.034	1.729	2.312	3.162	3.678	3.870	2.70%	8.38%	3.50%
Asia & Oceania	**12.907**	**17.527**	**19.392**	**24.711**	**28.208**	**30.910**	**33.315**	**32.493**	**4.16%**	**3.82%**	**0.95%**
Australia	1.266	1.708	3.525	5.998	6.151	6.282	6.614	6.709	10.79%	5.73%	0.58%
China	1.763	3.334	3.747	3.320	4.539	5.388	6.645	6.687	7.83%	1.94%	2.62%
India	1.153	1.848	1.187	1.475	1.762	1.875	1.733	1.346	0.29%	4.03%	-1.78%
Indonesia	2.406	3.047	2.546	3.246	3.888	5.126	7.136	8.419	0.57%	4.32%	5.29%
Japan	0.191	0.171	0.076	0.029	0.032	0.015	0.009	0.006	-8.84%	-8.27%	-10.86%
Malaysia	2.147	2.347	2.644	3.598	4.098	4.361	3.977	3.306	2.10%	4.48%	-1.42%
Myanmar	0.479	0.437	0.413	0.541	0.661	1.120	1.555	1.347	-1.45%	4.81%	4.85%
Pakistan	1.194	1.484	1.430	1.773	2.109	2.313	2.017	1.413	1.82%	3.96%	-2.63%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.014	0.006	0.005	0.002	0.001	0.000	-1.87%	-9.89%	-15.00%
Thailand	0.925	1.378	1.520	1.403	1.229	0.810	0.579	0.480	5.09%	-2.10%	-6.08%
Other Asia & Oceania	1.366	1.739	2.290	3.321	3.731	3.617	3.049	2.780	5.30%	5.00%	-1.94%
World	**104.006**	**120.194**	**128.042**	**142.845**	**156.082**	**166.188**	**173.846**	**176.816**	**2.10%**	**2.00%**	**0.83%**

LNG20_Ref20 Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**34.915**	**39.790**	**42.144**	**45.257**	**48.256**	**49.364**	**2.43%**	**1.90%**	**1.06%**
Canada	7.185	5.909	5.904	7.628	8.640	8.774	8.849	8.938	-1.94%	3.88%	0.23%
Mexico	1.349	1.799	1.251	0.716	1.015	2.464	4.027	5.045	-0.74%	-2.07%	11.28%
United States	18.927	22.382	27.759	31.446	32.489	34.019	35.381	35.381	3.90%	1.59%	0.57%
Central & South America	**5.318**	**6.267**	**6.547**	**6.925**	**7.745**	**8.335**	**8.775**	**9.250**	**2.10%**	**1.69%**	**1.19%**
Argentina	1.753	1.585	1.386	2.485	3.114	3.556	3.849	4.109	-2.32%	8.43%	1.87%
Brazil	0.432	0.570	0.762	0.338	0.157	0.095	0.048	0.023	5.84%	-14.60%	-12.00%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.051	0.075	-9.34%	-15.00%	19.78%
Colombia	0.253	0.454	0.502	0.427	0.315	0.224	0.204	0.311	7.08%	-4.55%	-0.08%
Peru	0.073	0.291	0.441	0.455	0.486	0.537	0.576	0.587	19.64%	0.97%	1.27%
Trinidad and Tobago	1.094	1.512	1.481	1.470	1.572	1.559	1.587	1.560	3.07%	0.60%	-0.05%
Venezuela	1.172	1.201	1.253	1.223	1.547	1.800	1.896	1.878	0.66%	2.13%	1.30%
Other Central & South America	0.472	0.589	0.696	0.516	0.548	0.561	0.565	0.706	3.96%	-2.36%	1.70%
Europe	**11.723**	**11.155**	**9.770**	**10.031**	**10.032**	**9.142**	**8.351**	**7.399**	**-1.81%**	**0.26%**	**-2.01%**
Austria	0.061	0.064	0.041	0.031	0.030	0.018	0.011	0.007	-3.83%	-3.31%	-9.16%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.012	0.018	0.012	0.029	-14.44%	-1.37%	6.32%
Germany	0.689	0.526	0.329	0.179	0.230	0.424	0.586	0.452	-7.12%	-3.51%	4.60%
Italy	0.426	0.297	0.239	0.157	0.245	0.228	0.146	0.128	-5.63%	0.27%	-4.25%
Netherlands	2.773	3.131	3.133	2.930	2.375	1.556	0.902	0.566	1.23%	-2.73%	-9.12%
Norway	3.196	3.849	3.734	4.169	4.423	4.264	3.964	3.726	1.57%	1.71%	-1.14%
Poland	0.214	0.215	0.184	0.150	0.089	0.050	0.069	0.116	-1.47%	-7.03%	1.76%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.360	0.470	0.454	0.366	0.364	0.293	-1.38%	2.37%	-2.88%
Spain	0.006	0.002	0.001	0.001	0.007	0.012	0.045	0.186	-13.56%	17.47%	24.61%
Turkey	0.032	0.024	0.049	0.048	0.029	0.018	0.011	0.007	4.49%	-5.14%	-8.83%
United Kingdom	3.275	2.124	1.310	1.480	1.739	1.791	1.900	1.626	-8.75%	2.87%	-0.45%
Other Europe	0.574	0.502	0.375	0.410	0.400	0.398	0.343	0.263	-4.16%	0.62%	-2.75%
Eurasia	**27.386**	**27.903**	**28.491**	**29.334**	**31.967**	**33.552**	**34.537**	**35.399**	**0.40%**	**1.16%**	**0.68%**
Kazakhstan	0.428	0.441	0.632	1.012	1.347	1.474	1.530	1.638	3.98%	7.86%	1.32%
Russia	21.698	22.372	21.653	21.324	22.693	23.715	24.402	24.833	-0.02%	0.47%	0.60%
Turkmenistan	2.225	1.600	2.581	3.178	3.816	4.369	5.199	6.091	1.50%	3.98%	3.17%
Ukraine	0.685	0.684	0.604	0.302	0.432	0.747	0.954	0.989	-1.25%	-3.30%	5.68%
Uzbekistan	2.119	2.130	2.464	3.106	3.111	2.517	1.673	1.086	1.52%	2.36%	-6.78%
Other Eurasia	0.232	0.677	0.558	0.411	0.569	0.731	0.779	0.762	9.15%	0.20%	1.97%
Middle East	**12.334**	**18.699**	**21.347**	**22.511**	**24.333**	**25.806**	**27.257**	**28.824**	**5.64%**	**1.32%**	**1.14%**
Iran	3.818	6.031	6.405	6.723	7.106	7.468	7.729	8.069	5.31%	1.04%	0.85%
Qatar	1.826	4.359	5.707	5.940	6.459	6.720	6.752	6.779	12.07%	1.25%	0.32%
Oman	0.748	1.035	1.133	1.227	1.333	1.383	1.417	1.467	4.24%	1.64%	0.64%
Saudi Arabia	2.860	3.424	3.916	4.304	4.847	5.323	5.738	6.188	3.19%	2.16%	1.64%
United Arab Emirates	1.828	1.992	2.005	1.884	1.886	1.923	2.075	2.239	0.93%	-0.61%	1.15%
Other Middle East	1.255	1.858	2.181	2.433	2.701	2.989	3.546	4.082	5.68%	2.16%	2.79%
Africa	**6.877**	**8.553**	**7.426**	**8.491**	**10.023**	**11.339**	**13.097**	**14.393**	**0.77%**	**3.04%**	**2.44%**
Algeria	3.613	3.465	3.428	3.530	3.832	4.153	4.349	3.930	-0.52%	1.12%	0.17%
Egypt	1.610	2.284	1.749	1.945	2.138	2.073	2.435	2.955	0.83%	2.03%	2.18%
Nigeria	0.862	1.317	1.214	1.288	1.765	1.999	2.664	3.620	3.49%	3.81%	4.91%
Other Africa	0.792	1.486	1.035	1.728	2.287	3.114	3.650	3.887	2.71%	8.26%	3.60%
Asia & Oceania	**12.907**	**17.527**	**19.399**	**24.761**	**28.223**	**30.472**	**31.902**	**31.739**	**4.16%**	**3.82%**	**0.79%**
Australia	1.266	1.708	3.529	6.004	6.154	6.288	6.617	6.701	10.80%	5.72%	0.57%
China	1.763	3.334	3.747	3.359	4.544	5.041	5.809	6.269	7.83%	1.95%	2.17%
India	1.153	1.848	1.187	1.492	1.824	1.878	1.663	1.305	0.29%	4.39%	-2.21%
Indonesia	2.406	3.047	2.551	3.250	3.886	5.066	6.759	8.218	0.59%	4.30%	5.12%
Japan	0.191	0.171	0.076	0.029	0.032	0.015	0.008	0.005	-8.75%	-8.41%	-11.14%
Malaysia	2.147	2.347	2.643	3.596	4.092	4.369	3.964	3.298	2.10%	4.47%	-1.43%
Myanmar	0.479	0.437	0.413	0.541	0.648	1.064	1.529	1.393	-1.45%	4.59%	5.24%
Pakistan	1.194	1.484	1.430	1.775	2.123	2.307	1.937	1.345	1.82%	4.03%	-3.00%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.014	0.006	0.005	0.002	0.001	0.000	-1.83%	-9.93%	-15.00%
Thailand	0.925	1.378	1.519	1.402	1.227	0.813	0.581	0.479	5.08%	-2.11%	-6.08%
Other Asia & Oceania	1.366	1.739	2.289	3.308	3.687	3.628	3.034	2.724	5.30%	4.89%	-2.00%
World	**104.006**	**120.194**	**127.896**	**141.842**	**154.466**	**163.902**	**172.176**	**176.367**	**2.09%**	**1.91%**	**0.89%**

LNG20_HRR20 Case (Supply)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040	cagr 2005-15	cagr 2015-25	cagr 2025-40
North America	**27.461**	**30.089**	**35.083**	**40.321**	**42.841**	**46.683**	**49.606**	**50.767**	**2.48%**	**2.02%**	**1.14%**
Canada	7.185	5.909	5.716	6.731	8.051	8.617	8.832	8.921	-2.26%	3.49%	0.69%
Mexico	1.349	1.799	1.251	0.670	0.870	1.506	2.848	3.800	-0.75%	-3.57%	10.33%
United States	18.927	22.382	28.116	32.920	33.920	36.560	37.927	38.047	4.04%	1.89%	0.77%
Central & South America	**5.318**	**6.267**	**6.542**	**6.932**	**7.772**	**8.346**	**8.786**	**9.232**	**2.09%**	**1.74%**	**1.15%**
Argentina	1.753	1.585	1.386	2.484	3.117	3.558	3.854	4.105	-2.32%	8.44%	1.85%
Brazil	0.432	0.570	0.762	0.338	0.156	0.095	0.048	0.023	5.84%	-14.65%	-11.91%
Chile	0.068	0.065	0.025	0.011	0.005	0.002	0.051	0.075	-9.34%	-15.00%	19.74%
Colombia	0.253	0.454	0.502	0.427	0.314	0.223	0.200	0.291	7.08%	-4.57%	-0.51%
Peru	0.073	0.291	0.440	0.454	0.488	0.522	0.577	0.597	19.61%	1.03%	1.35%
Trinidad and Tobago	1.094	1.512	1.479	1.468	1.570	1.559	1.585	1.560	3.06%	0.60%	-0.04%
Venezuela	1.172	1.201	1.253	1.225	1.553	1.804	1.908	1.921	0.66%	2.17%	1.43%
Other Central & South America	0.472	0.589	0.694	0.524	0.569	0.583	0.564	0.661	3.94%	-1.98%	1.01%
Europe	**11.723**	**11.155**	**9.771**	**10.017**	**10.051**	**9.116**	**8.377**	**7.324**	**-1.80%**	**0.28%**	**-2.09%**
Austria	0.061	0.064	0.042	0.033	0.030	0.017	0.011	0.007	-3.75%	-3.36%	-9.43%
Belgium	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
France	0.063	0.048	0.013	0.006	0.013	0.018	0.012	0.024	-14.43%	-0.44%	4.32%
Germany	0.689	0.526	0.329	0.183	0.232	0.427	0.582	0.449	-7.11%	-3.43%	4.49%
Italy	0.426	0.297	0.239	0.158	0.248	0.225	0.146	0.121	-5.63%	0.38%	-4.67%
Netherlands	2.773	3.131	3.131	2.917	2.379	1.559	0.912	0.543	1.22%	-2.71%	-9.38%
Norway	3.196	3.849	3.736	4.160	4.431	4.237	4.007	3.739	1.57%	1.72%	-1.13%
Poland	0.214	0.215	0.184	0.150	0.089	0.050	0.066	0.114	-1.47%	-7.02%	1.65%
Portugal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
Romania	0.413	0.374	0.361	0.473	0.454	0.361	0.363	0.288	-1.33%	2.30%	-2.98%
Spain	0.006	0.002	0.001	0.001	0.008	0.012	0.038	0.183	-13.56%	19.27%	23.22%
Turkey	0.032	0.024	0.048	0.049	0.029	0.018	0.011	0.007	4.32%	-4.86%	-9.33%
United Kingdom	3.275	2.124	1.310	1.480	1.736	1.792	1.885	1.594	-8.76%	2.85%	-0.57%
Other Europe	0.574	0.502	0.376	0.408	0.403	0.399	0.345	0.256	-4.15%	0.69%	-2.98%
Eurasia	**27.386**	**27.903**	**28.482**	**29.334**	**31.976**	**33.581**	**34.590**	**35.454**	**0.39%**	**1.16%**	**0.69%**
Kazakhstan	0.428	0.441	0.630	1.008	1.355	1.482	1.549	1.656	3.95%	7.95%	1.35%
Russia	21.698	22.372	21.655	21.320	22.720	23.757	24.441	24.863	-0.02%	0.48%	0.60%
Turkmenistan	2.225	1.600	2.575	3.165	3.782	4.334	5.244	6.129	1.47%	3.92%	3.27%
Ukraine	0.685	0.684	0.604	0.298	0.433	0.757	0.913	0.965	-1.25%	-3.29%	5.49%
Uzbekistan	2.119	2.130	2.460	3.113	3.113	2.520	1.676	1.091	1.50%	2.39%	-6.75%
Other Eurasia	0.232	0.677	0.558	0.430	0.574	0.730	0.767	0.751	9.15%	0.28%	1.81%
Middle East	**12.334**	**18.699**	**21.348**	**22.509**	**24.307**	**25.826**	**27.258**	**28.819**	**5.64%**	**1.31%**	**1.14%**
Iran	3.818	6.031	6.405	6.720	7.103	7.477	7.740	8.091	5.31%	1.04%	0.87%
Qatar	1.826	4.359	5.704	5.933	6.455	6.718	6.756	6.774	12.07%	1.24%	0.32%
Oman	0.748	1.035	1.133	1.227	1.332	1.384	1.421	1.457	4.24%	1.63%	0.60%
Saudi Arabia	2.860	3.424	3.916	4.304	4.845	5.320	5.744	6.199	3.19%	2.15%	1.66%
United Arab Emirates	1.828	1.992	2.007	1.892	1.875	1.923	2.088	2.237	0.94%	-0.68%	1.18%
Other Middle East	1.255	1.858	2.182	2.433	2.697	3.003	3.508	4.060	5.69%	2.14%	2.77%
Africa	**6.877**	**8.553**	**7.420**	**8.484**	**10.018**	**11.225**	**13.007**	**14.415**	**0.76%**	**3.05%**	**2.46%**
Algeria	3.613	3.465	3.428	3.539	3.828	4.103	4.302	3.938	-0.52%	1.11%	0.19%
Egypt	1.610	2.284	1.749	1.943	2.131	2.068	2.410	2.939	0.83%	2.00%	2.16%
Nigeria	0.862	1.317	1.209	1.283	1.756	2.000	2.644	3.623	3.44%	3.81%	4.95%
Other Africa	0.792	1.486	1.034	1.720	2.302	3.054	3.651	3.914	2.70%	8.33%	3.60%
Asia & Oceania	**12.907**	**17.527**	**19.413**	**24.786**	**28.060**	**30.061**	**31.571**	**31.483**	**4.17%**	**3.75%**	**0.77%**
Australia	1.266	1.708	3.525	5.998	6.156	6.239	6.551	6.621	10.78%	5.74%	0.49%
China	1.763	3.334	3.764	3.386	4.459	4.801	5.610	6.245	7.88%	1.71%	2.27%
India	1.153	1.848	1.190	1.498	1.831	1.844	1.659	1.306	0.31%	4.40%	-2.23%
Indonesia	2.406	3.047	2.545	3.246	3.880	5.021	6.721	8.112	0.56%	4.31%	5.04%
Japan	0.191	0.171	0.077	0.029	0.031	0.015	0.008	0.005	-8.65%	-8.57%	-11.27%
Malaysia	2.147	2.347	2.645	3.601	4.067	4.353	3.967	3.284	2.11%	4.40%	-1.42%
Myanmar	0.479	0.437	0.414	0.541	0.638	1.054	1.524	1.397	-1.44%	4.43%	5.36%
Pakistan	1.194	1.484	1.430	1.776	2.117	2.301	1.919	1.338	1.83%	4.00%	-3.01%
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---
South Korea	0.017	0.033	0.015	0.007	0.005	0.002	0.001	0.000	-1.75%	-10.00%	-15.00%
Thailand	0.925	1.378	1.521	1.400	1.231	0.808	0.584	0.471	5.09%	-2.09%	-6.20%
Other Asia & Oceania	1.366	1.739	2.288	3.303	3.644	3.624	3.028	2.703	5.30%	4.76%	-1.97%
World	**104.006**	**120.194**	**128.059**	**142.383**	**155.025**	**164.839**	**173.195**	**177.494**	**2.10%**	**1.93%**	**0.91%**

D4. Net LNG Exports (tcf)[48]

Ref_Ref Case (Net LNG Exports)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.100**	**1.425**	**1.978**	**1.983**	**2.387**
Canada	0.000	-0.072	-0.096	-0.090	-0.089	-0.089	-0.088	0.311
Mexico	0.000	-0.198	-0.253	-0.256	-0.253	-0.253	-0.253	-0.253
United States	-0.551	-0.366	-0.054	1.446	1.766	2.319	2.325	2.329
Central & South America	**0.463**	**0.464**	**0.404**	**0.097**	**0.152**	**0.151**	**0.291**	**0.298**
Argentina	0.000	-0.062	-0.091	-0.092	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.125	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.202	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.181	0.182	0.182	0.182	0.182
Trinidad and Tobago	0.495	0.719	0.671	0.471	0.538	0.560	0.722	0.730
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.084	-0.137	-0.164	-0.188	-0.210	-0.211
Europe	**-1.640**	**-2.856**	**-2.170**	**-3.138**	**-3.078**	**-2.827**	**-2.381**	**-2.141**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.094	-0.096	-0.094	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.389	-0.498	-0.606	-0.666	-0.541	-0.423
Germany	0.000	0.000	-0.062	-0.063	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.126	-0.434	-0.403	-0.403	-0.279	-0.186
Netherlands	0.000	0.000	-0.145	-0.146	-0.144	-0.151	-0.144	-0.144
Norway	0.000	0.166	0.184	0.107	0.181	0.184	0.184	0.185
Poland	0.000	0.000	0.000	-0.148	-0.145	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.120	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.674	-0.682	-0.673	-0.705	-0.701	-0.673
Turkey	-0.168	-0.275	-0.130	-0.284	-0.279	-0.158	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.436	-0.430	-0.441	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.336	-0.303	-0.212	-0.179	-0.179
Eurasia	**0.000**	**0.473**	**0.454**	**0.346**	**0.250**	**0.333**	**0.460**	**0.596**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.560	0.461	0.460	0.460	0.596
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	-0.005	-0.215	-0.211	-0.127	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.569**	**4.588**	**4.807**	**5.013**	**5.018**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.654	3.871	4.038	4.042
Oman	0.325	0.406	0.413	0.413	0.414	0.414	0.440	0.441
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.226	0.222	0.227	0.227	0.240	0.240
Other Middle East	0.000	0.097	0.257	0.282	0.294	0.294	0.294	0.295
Africa	**1.607**	**2.062**	**1.677**	**1.430**	**1.825**	**2.171**	**2.177**	**2.193**
Algeria	0.907	0.682	0.807	0.607	0.790	0.816	0.817	0.818
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.685	0.471	0.650	0.913	0.918	0.920
Other Africa	0.031	0.194	0.185	0.351	0.385	0.442	0.442	0.454
Asia & Oceania	**-1.413**	**-2.957**	**-4.511**	**-4.404**	**-5.163**	**-6.612**	**-7.544**	**-8.349**
Australia	0.524	0.895	2.506	3.962	4.589	4.595	4.603	4.610
China	0.000	-0.444	-1.559	-2.677	-3.571	-3.791	-3.240	-3.096
India	-0.208	-0.421	-0.872	-0.966	-1.176	-1.707	-2.716	-3.786
Indonesia	1.111	1.107	0.827	1.232	1.285	1.285	1.288	1.410
Japan	-2.789	-3.426	-3.974	-4.119	-4.010	-3.906	-3.958	-3.918
Malaysia	1.007	1.078	1.080	1.257	1.258	1.258	1.259	1.260
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	-0.190	-0.532	-0.945	-1.421
Singapore	0.000	0.000	-0.100	-0.101	-0.100	-0.100	-0.100	-0.100
South Korea	-1.049	-1.541	-2.256	-2.744	-2.941	-3.089	-3.125	-3.077
Thailand	0.000	0.000	-0.083	-0.084	-0.083	-0.083	-0.083	-0.140
Other Asia & Oceania	-0.008	-0.205	-0.081	-0.163	-0.225	-0.543	-0.528	-0.091
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

[48] A negative number denotes the country is a net *importer*.

Ref_HRR Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.366**	**1.962**	**1.984**	**1.989**	**2.599**
Canada	0.000	-0.072	-0.096	-0.090	-0.089	-0.089	-0.089	0.389
Mexico	0.000	-0.198	-0.253	-0.257	-0.253	-0.253	-0.253	-0.253
United States	-0.551	-0.366	-0.054	1.713	2.304	2.325	2.331	2.463
Central & South America	**0.463**	**0.464**	**0.402**	**0.071**	**0.129**	**0.188**	**0.300**	**0.298**
Argentina	0.000	-0.062	-0.091	-0.092	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.149	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.202	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.181	0.181	0.182	0.182	0.183
Trinidad and Tobago	0.495	0.719	0.669	0.471	0.514	0.597	0.729	0.731
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.084	-0.138	-0.164	-0.188	-0.208	-0.212
Europe	**-1.640**	**-2.856**	**-2.170**	**-3.260**	**-3.256**	**-2.788**	**-2.337**	**-2.146**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.094	-0.096	-0.094	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.389	-0.537	-0.651	-0.664	-0.523	-0.425
Germany	0.000	0.000	-0.062	-0.063	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.127	-0.494	-0.454	-0.403	-0.258	-0.191
Netherlands	0.000	0.000	-0.145	-0.147	-0.144	-0.151	-0.144	-0.144
Norway	0.000	0.166	0.184	0.107	0.181	0.184	0.185	0.185
Poland	0.000	0.000	0.000	-0.148	-0.145	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.121	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.674	-0.684	-0.680	-0.701	-0.700	-0.673
Turkey	-0.168	-0.275	-0.129	-0.285	-0.279	-0.145	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.437	-0.473	-0.431	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.355	-0.336	-0.201	-0.176	-0.176
Eurasia	**0.000**	**0.473**	**0.456**	**0.362**	**0.248**	**0.368**	**0.483**	**0.595**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.578	0.460	0.460	0.483	0.595
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	-0.004	-0.216	-0.211	-0.091	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.570**	**4.588**	**4.832**	**5.013**	**5.019**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.653	3.896	4.039	4.042
Oman	0.325	0.406	0.413	0.413	0.414	0.414	0.440	0.441
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
United Arab Emirates	0.252	0.273	0.226	0.222	0.227	0.227	0.240	0.240
Other Middle East	0.000	0.097	0.256	0.283	0.294	0.294	0.295	0.295
Africa	**1.607**	**2.062**	**1.681**	**1.427**	**1.743**	**2.172**	**2.179**	**2.193**
Algeria	0.907	0.682	0.807	0.607	0.748	0.815	0.817	0.818
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.688	0.472	0.608	0.914	0.918	0.921
Other Africa	0.031	0.194	0.185	0.347	0.386	0.443	0.443	0.455
Asia & Oceania	**-1.413**	**-2.957**	**-4.514**	**-4.535**	**-5.414**	**-6.757**	**-7.627**	**-8.560**
Australia	0.524	0.895	2.506	3.937	4.587	4.595	4.603	4.610
China	0.000	-0.444	-1.561	-2.725	-3.684	-3.900	-3.332	-3.193
India	-0.208	-0.421	-0.873	-0.975	-1.212	-1.684	-2.679	-3.802
Indonesia	1.111	1.107	0.826	1.208	1.284	1.286	1.288	1.415
Japan	-2.789	-3.426	-3.974	-4.127	-4.025	-3.900	-3.955	-3.914
Malaysia	1.007	1.078	1.083	1.256	1.258	1.258	1.259	1.260
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	-0.218	-0.543	-0.937	-1.420
Singapore	0.000	0.000	-0.100	-0.101	-0.100	-0.099	-0.100	-0.100
South Korea	-1.049	-1.541	-2.256	-2.749	-2.950	-3.085	-3.121	-3.071
Thailand	0.000	0.000	-0.083	-0.084	-0.083	-0.083	-0.083	-0.203
Other Asia & Oceania	-0.008	-0.205	-0.082	-0.175	-0.271	-0.603	-0.573	-0.143
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Ref_LRR Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**0.893**	**0.898**	**1.072**	**1.482**	**2.024**
Canada	0.000	-0.072	-0.096	-0.090	-0.089	-0.089	-0.089	0.378
Mexico	0.000	-0.198	-0.253	-0.256	-0.253	-0.253	-0.253	-0.253
United States	-0.551	-0.366	-0.054	1.238	1.240	1.413	1.823	1.899
Central & South America	**0.463**	**0.464**	**0.407**	**0.106**	**0.202**	**0.230**	**0.300**	**0.295**
Argentina	0.000	-0.062	-0.091	-0.092	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.114	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.202	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.181	0.182	0.182	0.182	0.183
Trinidad and Tobago	0.495	0.719	0.674	0.471	0.585	0.636	0.728	0.730
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.084	-0.138	-0.161	-0.185	-0.208	-0.214
Europe	**-1.640**	**-2.856**	**-2.175**	**-3.066**	**-2.989**	**-2.620**	**-2.346**	**-2.134**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.094	-0.096	-0.094	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.389	-0.472	-0.562	-0.597	-0.530	-0.419
Germany	0.000	0.000	-0.062	-0.063	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.130	-0.407	-0.403	-0.389	-0.255	-0.180
Netherlands	0.000	0.000	-0.144	-0.146	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.113	0.181	0.184	0.184	0.185
Poland	0.000	0.000	0.000	-0.147	-0.144	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.120	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.673	-0.681	-0.673	-0.693	-0.700	-0.673
Turkey	-0.168	-0.275	-0.131	-0.283	-0.261	-0.091	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.436	-0.431	-0.430	-0.430	-0.431
Other Europe	-0.016	-0.041	-0.184	-0.327	-0.278	-0.184	-0.181	-0.181
Eurasia	**0.000**	**0.473**	**0.445**	**0.335**	**0.248**	**0.402**	**0.483**	**0.596**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.549	0.458	0.461	0.483	0.596
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	-0.014	-0.214	-0.210	-0.059	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.574**	**4.589**	**4.867**	**5.013**	**5.023**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.654	3.931	4.039	4.043
Oman	0.325	0.406	0.413	0.413	0.414	0.414	0.440	0.445
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
United Arab Emirates	0.252	0.273	0.226	0.222	0.227	0.227	0.240	0.240
Other Middle East	0.000	0.097	0.257	0.287	0.294	0.294	0.295	0.295
Africa	**1.607**	**2.062**	**1.685**	**1.447**	**1.935**	**2.172**	**2.178**	**2.221**
Algeria	0.907	0.682	0.807	0.607	0.807	0.816	0.817	0.818
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.693	0.470	0.742	0.914	0.918	0.920
Other Africa	0.031	0.194	0.185	0.369	0.385	0.442	0.442	0.483
Asia & Oceania	**-1.413**	**-2.957**	**-4.509**	**-4.288**	**-4.882**	**-6.123**	**-7.110**	**-8.026**
Australia	0.524	0.895	2.506	3.978	4.590	4.596	4.604	4.610
China	0.000	-0.444	-1.561	-2.641	-3.437	-3.554	-2.998	-2.914
India	-0.208	-0.421	-0.870	-0.950	-1.156	-1.638	-2.698	-3.785
Indonesia	1.111	1.107	0.828	1.248	1.285	1.286	1.288	1.422
Japan	-2.789	-3.426	-3.974	-4.112	-4.004	-3.893	-3.953	-3.920
Malaysia	1.007	1.078	1.082	1.257	1.258	1.259	1.259	1.260
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	-0.152	-0.484	-0.941	-1.422
Singapore	0.000	0.000	-0.100	-0.101	-0.100	-0.100	-0.100	-0.100
South Korea	-1.049	-1.541	-2.256	-2.739	-2.937	-3.078	-3.116	-3.071
Thailand	0.000	0.000	-0.083	-0.084	-0.083	-0.083	-0.083	-0.113
Other Asia & Oceania	-0.008	-0.205	-0.080	-0.144	-0.145	-0.433	-0.373	0.007
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Ref_Hi-D Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.021**	**1.239**	**1.878**	**1.978**	**2.392**
Canada	0.000	-0.072	-0.096	-0.090	-0.089	-0.089	-0.089	0.323
Mexico	0.000	-0.198	-0.253	-0.256	-0.253	-0.253	-0.253	-0.253
United States	-0.551	-0.366	-0.054	1.367	1.581	2.220	2.319	2.322
Central & South America	**0.463**	**0.464**	**0.403**	**0.102**	**0.173**	**0.166**	**0.291**	**0.299**
Argentina	0.000	-0.062	-0.091	-0.092	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.119	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.202	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.181	0.182	0.182	0.182	0.183
Trinidad and Tobago	0.495	0.719	0.671	0.471	0.557	0.574	0.720	0.730
Venezuela	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001
Other Central & South America	-0.032	-0.055	-0.084	-0.137	-0.163	-0.187	-0.209	-0.212
Europe	**-1.640**	**-2.856**	**-2.174**	**-3.112**	**-3.043**	**-2.787**	**-2.349**	**-2.156**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.094	-0.096	-0.094	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.389	-0.490	-0.581	-0.657	-0.525	-0.427
Germany	0.000	0.000	-0.062	-0.063	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.129	-0.420	-0.403	-0.403	-0.261	-0.192
Netherlands	0.000	0.000	-0.144	-0.146	-0.144	-0.146	-0.144	-0.144
Norway	0.000	0.166	0.184	0.106	0.181	0.184	0.184	0.185
Poland	0.000	0.000	0.000	-0.147	-0.144	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.120	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.674	-0.682	-0.673	-0.702	-0.699	-0.673
Turkey	-0.168	-0.275	-0.131	-0.284	-0.279	-0.149	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.436	-0.430	-0.434	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.333	-0.295	-0.204	-0.184	-0.184
Eurasia	**0.000**	**0.473**	**0.451**	**0.345**	**0.245**	**0.351**	**0.460**	**0.595**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.559	0.456	0.460	0.460	0.595
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	-0.009	-0.215	-0.210	-0.108	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.572**	**4.589**	**4.820**	**5.013**	**5.020**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.654	3.884	4.039	4.042
Oman	0.325	0.406	0.413	0.413	0.414	0.414	0.440	0.441
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
United Arab Emirates	0.252	0.273	0.226	0.222	0.227	0.227	0.240	0.240
Other Middle East	0.000	0.097	0.257	0.285	0.294	0.294	0.295	0.295
Africa	**1.607**	**2.062**	**1.682**	**1.438**	**1.891**	**2.171**	**2.177**	**2.206**
Algeria	0.907	0.682	0.807	0.607	0.807	0.816	0.817	0.818
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.690	0.471	0.698	0.914	0.918	0.921
Other Africa	0.031	0.194	0.185	0.360	0.386	0.442	0.442	0.467
Asia & Oceania	**-1.413**	**-2.957**	**-4.508**	**-4.366**	**-5.095**	**-6.601**	**-7.570**	**-8.357**
Australia	0.524	0.895	2.506	3.969	4.590	4.595	4.603	4.610
China	0.000	-0.444	-1.561	-2.666	-3.544	-3.801	-3.321	-3.094
India	-0.208	-0.421	-0.871	-0.967	-1.169	-1.702	-2.696	-3.788
Indonesia	1.111	1.107	0.828	1.243	1.287	1.287	1.290	1.420
Japan	-2.789	-3.426	-3.974	-4.117	-4.004	-3.902	-3.953	-3.913
Malaysia	1.007	1.078	1.085	1.257	1.258	1.258	1.259	1.260
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	-0.190	-0.532	-0.941	-1.420
Singapore	0.000	0.000	-0.100	-0.101	-0.100	-0.099	-0.100	-0.100
South Korea	-1.049	-1.541	-2.256	-2.742	-2.937	-3.085	-3.120	-3.070
Thailand	0.000	0.000	-0.083	-0.084	-0.083	-0.083	-0.083	-0.176
Other Asia & Oceania	-0.008	-0.205	-0.081	-0.157	-0.205	-0.537	-0.509	-0.086
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG12_Ref Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.398**	**1.628**	**1.989**	**2.607**	**4.259**	**4.644**
Canada	0.000	-0.072	-0.095	-0.089	-0.088	-0.012	0.266	0.270
Mexico	0.000	-0.198	-0.250	-0.253	-0.250	-0.255	-0.083	0.288
United States	-0.551	-0.366	-0.053	1.969	2.326	2.874	4.075	4.086
Central & South America	**0.463**	**0.464**	**0.403**	**0.148**	**0.358**	**0.351**	**0.356**	**0.356**
Argentina	0.000	-0.062	-0.090	-0.091	-0.090	-0.092	-0.094	-0.094
Brazil	0.000	-0.096	-0.112	-0.113	-0.111	-0.114	-0.116	-0.117
Chile	0.000	-0.106	-0.160	-0.199	-0.197	-0.201	-0.205	-0.206
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.182	0.183	0.204	0.207
Trinidad and Tobago	0.495	0.719	0.664	0.499	0.724	0.731	0.733	0.734
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.083	-0.130	-0.149	-0.157	-0.166	-0.168
Europe	**-1.640**	**-2.856**	**-2.159**	**-2.887**	**-2.401**	**-2.060**	**-2.111**	**-2.122**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.093	-0.094	-0.093	-0.095	-0.098	-0.099
France	-0.442	-0.483	-0.384	-0.438	-0.431	-0.390	-0.399	-0.401
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.063	-0.064	-0.064
Italy	-0.086	-0.315	-0.132	-0.402	-0.275	-0.124	-0.127	-0.127
Netherlands	0.000	0.000	-0.143	-0.144	-0.143	-0.145	-0.149	-0.149
Norway	0.000	0.166	0.184	0.165	0.184	0.185	0.185	0.185
Poland	0.000	0.000	0.000	-0.145	-0.142	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.117	-0.119	-0.117	-0.120	-0.122	-0.123
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.661	-0.668	-0.660	-0.674	-0.689	-0.693
Turkey	-0.168	-0.275	-0.144	-0.279	-0.058	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.425	-0.430	-0.425	-0.433	-0.443	-0.445
Other Europe	-0.016	-0.041	-0.182	-0.272	-0.181	-0.185	-0.189	-0.190
Eurasia	**0.000**	**0.473**	**0.460**	**0.276**	**0.444**	**0.602**	**0.602**	**0.603**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.487	0.565	0.602	0.602	0.603
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.211	-0.121	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.551**	**4.585**	**4.715**	**5.015**	**5.018**	**5.022**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.776	4.040	4.044	4.048
Oman	0.325	0.406	0.413	0.413	0.415	0.441	0.441	0.442
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.226	0.228	0.239	0.238	0.238
Other Middle East	0.000	0.097	0.258	0.294	0.295	0.295	0.294	0.294
Africa	**1.607**	**2.062**	**1.702**	**1.569**	**2.168**	**2.180**	**2.441**	**2.959**
Algeria	0.907	0.682	0.815	0.678	0.816	0.819	0.957	1.064
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.702	0.502	0.910	0.917	0.921	0.946
Other Africa	0.031	0.194	0.185	0.389	0.442	0.443	0.562	0.949
Asia & Oceania	**-1.413**	**-2.957**	**-4.558**	**-5.319**	**-7.273**	**-8.695**	**-10.564**	**-11.464**
Australia	0.524	0.895	2.506	4.299	4.594	4.609	4.718	5.520
China	0.000	-0.444	-1.554	-3.653	-5.407	-6.754	-7.748	-8.004
India	-0.208	-0.421	-0.866	-0.993	-1.404	-1.723	-2.265	-3.328
Indonesia	1.111	1.107	0.896	1.282	1.289	1.316	1.454	1.470
Japan	-2.789	-3.426	-4.145	-4.475	-4.319	-4.221	-4.253	-4.033
Malaysia	1.007	1.078	1.087	1.257	1.259	1.481	1.505	1.505
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	-0.083	-0.685	-1.391
Singapore	0.000	0.000	-0.098	-0.099	-0.098	-0.100	-0.103	-0.103
South Korea	-1.049	-1.541	-2.226	-2.681	-2.870	-2.997	-3.073	-2.992
Thailand	0.000	0.000	-0.082	-0.083	-0.082	-0.084	-0.085	-0.086
Other Asia & Oceania	-0.008	-0.205	-0.075	-0.174	-0.235	-0.140	-0.029	-0.022
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG12_HRR Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.952**	**1.987**	**3.309**	**5.746**	**6.470**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.068	0.233	0.273
Mexico	0.000	-0.198	-0.253	-0.254	-0.253	-0.253	-0.164	0.246
United States	-0.551	-0.366	-0.054	2.295	2.328	3.629	5.677	5.951
Central & South America	**0.463**	**0.464**	**0.422**	**0.202**	**0.359**	**0.361**	**0.360**	**0.369**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.200	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.182	0.183	0.200	0.205
Trinidad and Tobago	0.495	0.719	0.689	0.553	0.729	0.731	0.732	0.734
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.084	-0.129	-0.149	-0.151	-0.168	-0.167
Europe	**-1.640**	**-2.856**	**-2.155**	**-2.918**	**-2.247**	**-2.040**	**-2.041**	**-2.040**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.095	-0.094	-0.095	-0.094
France	-0.442	-0.483	-0.388	-0.440	-0.402	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.063	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.403	-0.241	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.145	-0.145	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.141	0.184	0.185	0.185	0.185
Poland	0.000	0.000	0.000	-0.146	-0.072	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.668	-0.670	-0.668	-0.667	-0.668	-0.667
Turkey	-0.168	-0.275	-0.125	-0.280	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.431	-0.430	-0.430	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.268	-0.184	-0.184	-0.184	-0.184
Eurasia	**0.000**	**0.473**	**0.460**	**0.271**	**0.512**	**0.596**	**0.597**	**0.598**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.483	0.562	0.596	0.597	0.598
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.212	-0.051	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.584**	**4.710**	**5.015**	**5.020**	**5.025**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.774	4.039	4.043	4.047
Oman	0.325	0.406	0.413	0.413	0.415	0.441	0.441	0.442
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.226	0.227	0.240	0.240	0.240
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.295	0.296	0.296
Africa	**1.607**	**2.062**	**1.702**	**1.512**	**2.168**	**2.179**	**2.268**	**2.650**
Algeria	0.907	0.682	0.815	0.639	0.816	0.819	0.836	0.922
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.702	0.490	0.910	0.917	0.919	0.922
Other Africa	0.031	0.194	0.185	0.383	0.442	0.443	0.513	0.806
Asia & Oceania	**-1.413**	**-2.957**	**-4.573**	**-5.603**	**-7.489**	**-9.420**	**-11.950**	**-13.072**
Australia	0.524	0.895	2.506	4.308	4.596	4.609	4.652	5.241
China	0.000	-0.444	-1.520	-3.892	-5.637	-7.409	-8.917	-9.262
India	-0.208	-0.421	-0.831	-0.995	-1.300	-1.649	-2.316	-3.355
Indonesia	1.111	1.107	0.889	1.280	1.287	1.292	1.459	1.460
Japan	-2.789	-3.426	-4.194	-4.505	-4.375	-4.200	-4.201	-3.907
Malaysia	1.007	1.078	1.087	1.257	1.259	1.282	1.282	1.283
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	-0.070	-0.699	-1.358
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.100	-0.100	-0.099
South Korea	-1.049	-1.541	-2.246	-2.695	-2.895	-2.973	-2.988	-2.895
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.082	-0.178	-0.244	-0.120	-0.040	-0.097
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG12_LRR Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.339**	**1.981**	**2.165**	**2.708**	**3.137**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	0.017	0.273	0.274
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.005	0.407
United States	-0.551	-0.366	-0.054	1.681	2.322	2.401	2.439	2.456
Central & South America	**0.463**	**0.464**	**0.420**	**0.239**	**0.360**	**0.364**	**0.397**	**0.396**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.182	0.183	0.219	0.220
Trinidad and Tobago	0.495	0.719	0.687	0.587	0.729	0.732	0.734	0.735
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.084	-0.126	-0.147	-0.148	-0.154	-0.156
Europe	**-1.640**	**-2.856**	**-2.155**	**-2.791**	**-2.239**	**-2.041**	**-2.040**	**-2.039**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.095	-0.095	-0.094	-0.094
France	-0.442	-0.483	-0.388	-0.413	-0.400	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.382	-0.237	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.174	0.184	0.185	0.186	0.186
Poland	0.000	0.000	0.000	-0.145	-0.070	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.668	-0.668	-0.668	-0.668	-0.667	-0.667
Turkey	-0.168	-0.275	-0.125	-0.276	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.430	-0.430	-0.430	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.230	-0.184	-0.184	-0.184	-0.184
Eurasia	**0.000**	**0.473**	**0.460**	**0.249**	**0.514**	**0.598**	**0.599**	**0.600**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.460	0.562	0.598	0.599	0.600
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.211	-0.049	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.585**	**4.715**	**5.017**	**5.024**	**5.044**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.777	4.040	4.046	4.049
Oman	0.325	0.406	0.413	0.413	0.416	0.441	0.442	0.442
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.226	0.227	0.240	0.240	0.240
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.296	0.313
Africa	**1.607**	**2.062**	**1.703**	**1.633**	**2.168**	**2.181**	**2.741**	**3.360**
Algeria	0.907	0.682	0.815	0.720	0.816	0.820	1.173	1.267
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.703	0.524	0.909	0.918	0.923	1.001
Other Africa	0.031	0.194	0.185	0.389	0.442	0.444	0.646	1.092
Asia & Oceania	**-1.413**	**-2.957**	**-4.573**	**-5.256**	**-7.499**	**-8.284**	**-9.429**	**-10.497**
Australia	0.524	0.895	2.506	4.488	4.597	4.612	4.911	5.687
China	0.000	-0.444	-1.522	-3.798	-5.653	-6.811	-7.700	-8.134
India	-0.208	-0.421	-0.834	-0.992	-1.298	-1.513	-1.995	-3.080
Indonesia	1.111	1.107	0.898	1.282	1.287	1.348	1.523	1.620
Japan	-2.789	-3.426	-4.197	-4.474	-4.373	-4.179	-4.085	-3.879
Malaysia	1.007	1.078	1.087	1.258	1.259	1.497	1.505	1.506
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	-0.017	-0.564	-1.315
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.100	-0.100	-0.099
South Korea	-1.049	-1.541	-2.246	-2.675	-2.894	-2.952	-2.958	-2.870
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.083	-0.162	-0.241	-0.087	0.115	0.150
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG12_Hi-D Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.525**	**1.983**	**2.394**	**3.528**	**3.940**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	0.003	0.273	0.274
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.033	0.373
United States	-0.551	-0.366	-0.054	1.867	2.324	2.645	3.287	3.294
Central & South America	**0.463**	**0.464**	**0.420**	**0.219**	**0.361**	**0.360**	**0.393**	**0.392**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.182	0.183	0.219	0.219
Trinidad and Tobago	0.495	0.719	0.688	0.567	0.729	0.732	0.734	0.734
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.084	-0.127	-0.148	-0.152	-0.157	-0.159
Europe	**-1.640**	**-2.856**	**-2.154**	**-2.825**	**-2.253**	**-2.041**	**-2.039**	**-2.039**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.095	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.388	-0.415	-0.398	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.402	-0.239	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.173	0.184	0.185	0.186	0.186
Poland	0.000	0.000	0.000	-0.145	-0.083	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.668	-0.668	-0.668	-0.668	-0.667	-0.667
Turkey	-0.168	-0.275	-0.124	-0.279	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.430	-0.430	-0.430	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.239	-0.184	-0.184	-0.184	-0.183
Eurasia	**0.000**	**0.473**	**0.460**	**0.249**	**0.509**	**0.597**	**0.598**	**0.599**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.460	0.562	0.597	0.598	0.599
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.211	-0.053	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.585**	**4.713**	**5.017**	**5.023**	**5.032**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.777	4.040	4.045	4.048
Oman	0.325	0.406	0.413	0.413	0.415	0.441	0.442	0.442
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.226	0.227	0.240	0.240	0.240
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.296	0.301
Africa	**1.607**	**2.062**	**1.698**	**1.584**	**2.169**	**2.180**	**2.557**	**3.096**
Algeria	0.907	0.682	0.815	0.693	0.816	0.819	1.046	1.123
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.697	0.502	0.910	0.917	0.921	1.000
Other Africa	0.031	0.194	0.185	0.389	0.442	0.443	0.590	0.973
Asia & Oceania	**-1.413**	**-2.957**	**-4.569**	**-5.337**	**-7.482**	**-8.507**	**-10.059**	**-11.020**
Australia	0.524	0.895	2.506	4.446	4.597	4.612	4.812	5.594
China	0.000	-0.444	-1.521	-3.830	-5.640	-6.964	-8.020	-8.402
India	-0.208	-0.421	-0.830	-0.992	-1.296	-1.539	-2.070	-3.121
Indonesia	1.111	1.107	0.895	1.282	1.288	1.332	1.505	1.570
Japan	-2.789	-3.426	-4.195	-4.479	-4.371	-4.184	-4.096	-3.884
Malaysia	1.007	1.078	1.087	1.258	1.259	1.489	1.505	1.505
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	-0.020	-0.609	-1.327
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.100	-0.099	-0.099
South Korea	-1.049	-1.541	-2.246	-2.678	-2.894	-2.957	-2.965	-2.874
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.083	-0.162	-0.241	-0.094	0.061	0.101
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG20_Ref Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.974**	**2.172**	**4.510**	**6.722**	**7.812**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.089	-0.089	-0.089
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.253	-0.252
United States	-0.551	-0.366	-0.054	2.315	2.513	4.852	7.063	8.153
Central & South America	**0.463**	**0.464**	**0.435**	**0.324**	**0.386**	**0.398**	**0.442**	**0.455**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.183	0.209	0.220	0.220
Trinidad and Tobago	0.495	0.719	0.704	0.661	0.732	0.733	0.772	0.773
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.086	-0.115	-0.126	-0.142	-0.147	-0.136
Europe	**-1.640**	**-2.856**	**-2.124**	**-2.602**	**-2.041**	**-2.039**	**-2.037**	**-2.037**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.095	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.388	-0.414	-0.387	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.284	-0.123	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.181	0.185	0.186	0.186	0.187
Poland	0.000	0.000	0.000	-0.144	0.000	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.668	-0.668	-0.667	-0.667	-0.667	-0.667
Turkey	-0.168	-0.275	-0.095	-0.214	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.430	-0.430	-0.430	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.209	-0.184	-0.184	-0.183	-0.183
Eurasia	**0.000**	**0.473**	**0.460**	**0.250**	**0.597**	**0.598**	**0.600**	**0.601**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.460	0.597	0.598	0.600	0.601
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.210	0.000	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.586**	**4.878**	**5.019**	**5.037**	**5.252**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.906	4.042	4.047	4.053
Oman	0.325	0.406	0.413	0.413	0.441	0.441	0.442	0.443
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.227	0.235	0.240	0.240	0.241
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.308	0.516
Africa	**1.607**	**2.062**	**1.725**	**1.804**	**2.177**	**2.300**	**2.845**	**3.049**
Algeria	0.907	0.682	0.815	0.757	0.819	0.896	1.305	1.399
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.724	0.653	0.915	0.920	0.938	1.003
Other Africa	0.031	0.194	0.185	0.393	0.443	0.484	0.602	0.647
Asia & Oceania	**-1.413**	**-2.957**	**-4.641**	**-6.336**	**-8.169**	**-10.787**	**-13.608**	**-15.133**
Australia	0.524	0.895	2.506	4.566	4.608	4.625	4.812	4.881
China	0.000	-0.444	-1.576	-4.895	-6.781	-9.170	-10.955	-11.719
India	-0.208	-0.421	-0.848	-0.991	-1.126	-1.697	-2.578	-3.488
Indonesia	1.111	1.107	0.892	1.283	1.293	1.365	1.526	1.906
Japan	-2.789	-3.426	-4.193	-4.459	-4.276	-4.122	-4.070	-3.829
Malaysia	1.007	1.078	1.087	1.258	1.370	1.505	1.506	1.507
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	0.000	-0.527	-1.197
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.099	-0.099	-0.099
South Korea	-1.049	-1.541	-2.243	-2.728	-2.900	-3.005	-3.025	-2.910
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.083	-0.185	-0.175	-0.107	-0.115	-0.102
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG20_HRR Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.980**	**2.394**	**5.225**	**8.318**	**9.898**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.089	-0.089	-0.089
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.253	-0.253
United States	-0.551	-0.366	-0.054	2.322	2.735	5.566	8.659	10.239
Central & South America	**0.463**	**0.464**	**0.421**	**0.300**	**0.387**	**0.370**	**0.392**	**0.396**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.183	0.191	0.220	0.220
Trinidad and Tobago	0.495	0.719	0.690	0.637	0.732	0.732	0.734	0.735
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.086	-0.115	-0.125	-0.151	-0.158	-0.156
Europe	**-1.640**	**-2.856**	**-2.119**	**-2.610**	**-2.041**	**-2.039**	**-2.039**	**-2.038**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.095	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.388	-0.409	-0.387	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.291	-0.123	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.181	0.185	0.186	0.186	0.186
Poland	0.000	0.000	0.000	-0.144	0.000	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.668	-0.668	-0.668	-0.667	-0.667	-0.667
Turkey	-0.168	-0.275	-0.090	-0.218	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.430	-0.430	-0.430	-0.430	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.210	-0.184	-0.184	-0.184	-0.183
Eurasia	**0.000**	**0.473**	**0.460**	**0.250**	**0.597**	**0.598**	**0.599**	**0.599**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.460	0.597	0.598	0.599	0.599
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.210	0.000	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.586**	**4.862**	**5.018**	**5.023**	**5.105**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.895	4.041	4.045	4.050
Oman	0.325	0.406	0.413	0.414	0.441	0.441	0.442	0.442
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.227	0.231	0.240	0.240	0.240
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.296	0.373
Africa	**1.607**	**2.062**	**1.715**	**1.796**	**2.177**	**2.186**	**2.564**	**2.863**
Algeria	0.907	0.682	0.815	0.764	0.819	0.824	1.073	1.286
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.714	0.640	0.915	0.918	0.921	1.001
Other Africa	0.031	0.194	0.185	0.393	0.443	0.444	0.570	0.576
Asia & Oceania	**-1.413**	**-2.957**	**-4.622**	**-6.303**	**-8.376**	**-11.358**	**-14.856**	**-16.823**
Australia	0.524	0.895	2.506	4.558	4.607	4.614	4.710	4.875
China	0.000	-0.444	-1.572	-4.861	-6.902	-9.548	-11.631	-12.447
India	-0.208	-0.421	-0.840	-0.991	-1.132	-1.767	-2.797	-3.932
Indonesia	1.111	1.107	0.893	1.282	1.292	1.295	1.400	1.663
Japan	-2.789	-3.426	-4.189	-4.455	-4.283	-4.150	-4.098	-3.871
Malaysia	1.007	1.078	1.087	1.258	1.331	1.505	1.505	1.505
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	0.000	-0.606	-1.300
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.099	-0.099	-0.099
South Korea	-1.049	-1.541	-2.242	-2.727	-2.904	-3.018	-3.045	-2.949
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.082	-0.185	-0.201	-0.106	-0.113	-0.186
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG20_LRR Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.738**	**2.036**	**3.688**	**5.362**	**6.239**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.089	-0.089	-0.089
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.252	-0.252
United States	-0.551	-0.366	-0.054	2.079	2.377	4.029	5.703	6.580
Central & South America	**0.463**	**0.464**	**0.439**	**0.344**	**0.381**	**0.432**	**0.454**	**0.521**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.183	0.218	0.220	0.220
Trinidad and Tobago	0.495	0.719	0.705	0.683	0.732	0.747	0.773	0.774
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.083	-0.118	-0.131	-0.130	-0.136	-0.071
Europe	**-1.640**	**-2.856**	**-2.128**	**-2.535**	**-2.041**	**-2.039**	**-2.038**	**-2.004**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.095	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.388	-0.395	-0.387	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.257	-0.123	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.181	0.185	0.186	0.187	0.219
Poland	0.000	0.000	0.000	-0.144	0.000	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.668	-0.668	-0.667	-0.667	-0.667	-0.667
Turkey	-0.168	-0.275	-0.098	-0.199	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.430	-0.430	-0.430	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.204	-0.184	-0.184	-0.183	-0.183
Eurasia	**0.000**	**0.473**	**0.460**	**0.253**	**0.597**	**0.599**	**0.601**	**0.621**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.462	0.597	0.599	0.601	0.621
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.210	0.000	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.587**	**4.890**	**5.021**	**5.116**	**5.257**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.653	3.917	4.043	4.049	4.056
Oman	0.325	0.406	0.413	0.414	0.441	0.441	0.442	0.443
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.227	0.237	0.240	0.240	0.241
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.384	0.517
Africa	**1.607**	**2.062**	**1.728**	**1.879**	**2.178**	**2.470**	**3.023**	**3.056**
Algeria	0.907	0.682	0.815	0.807	0.819	1.007	1.397	1.401
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.727	0.680	0.915	0.921	0.985	1.004
Other Africa	0.031	0.194	0.185	0.392	0.443	0.542	0.641	0.651
Asia & Oceania	**-1.413**	**-2.957**	**-4.643**	**-6.265**	**-8.040**	**-10.171**	**-12.518**	**-13.689**
Australia	0.524	0.895	2.506	4.588	4.608	4.647	4.862	4.885
China	0.000	-0.444	-1.571	-4.871	-6.690	-8.772	-10.303	-11.180
India	-0.208	-0.421	-0.848	-0.991	-1.125	-1.617	-2.438	-2.879
Indonesia	1.111	1.107	0.892	1.283	1.293	1.426	1.644	2.047
Japan	-2.789	-3.426	-4.196	-4.446	-4.274	-4.087	-4.044	-3.799
Malaysia	1.007	1.078	1.087	1.258	1.385	1.506	1.507	1.509
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	0.000	-0.455	-1.123
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.099	-0.099	-0.099
South Korea	-1.049	-1.541	-2.246	-2.720	-2.898	-2.993	-3.007	-2.885
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.084	-0.184	-0.157	-0.099	-0.102	-0.082
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG20_Hi-D Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.403**	**1.959**	**2.126**	**4.249**	**6.291**	**7.226**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.089	-0.089	-0.089
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.253	-0.252
United States	-0.551	-0.366	-0.054	2.300	2.467	4.590	6.633	7.567
Central & South America	**0.463**	**0.464**	**0.434**	**0.311**	**0.382**	**0.406**	**0.443**	**0.468**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.183	0.216	0.220	0.220
Trinidad and Tobago	0.495	0.719	0.700	0.653	0.732	0.733	0.772	0.774
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.083	-0.121	-0.130	-0.140	-0.146	-0.123
Europe	**-1.640**	**-2.856**	**-2.121**	**-2.584**	**-2.042**	**-2.039**	**-2.038**	**-2.036**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.095	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.387	-0.410	-0.387	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.274	-0.123	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.144	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.181	0.185	0.186	0.186	0.187
Poland	0.000	0.000	0.000	-0.144	0.000	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.667	-0.668	-0.668	-0.667	-0.667	-0.666
Turkey	-0.168	-0.275	-0.094	-0.211	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.430	-0.430	-0.430	-0.430	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.208	-0.184	-0.184	-0.183	-0.183
Eurasia	**0.000**	**0.473**	**0.460**	**0.250**	**0.597**	**0.598**	**0.600**	**0.612**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.460	0.597	0.598	0.600	0.612
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.210	0.000	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.586**	**4.883**	**5.020**	**5.064**	**5.254**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.911	4.042	4.047	4.054
Oman	0.325	0.406	0.413	0.414	0.441	0.441	0.442	0.443
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.227	0.236	0.240	0.240	0.241
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.335	0.517
Africa	**1.607**	**2.062**	**1.726**	**1.813**	**2.178**	**2.357**	**2.941**	**3.053**
Algeria	0.907	0.682	0.815	0.766	0.819	0.935	1.367	1.400
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.725	0.658	0.915	0.920	0.944	1.004
Other Africa	0.031	0.194	0.185	0.389	0.443	0.502	0.630	0.649
Asia & Oceania	**-1.413**	**-2.957**	**-4.644**	**-6.335**	**-8.124**	**-10.591**	**-13.302**	**-14.577**
Australia	0.524	0.895	2.506	4.561	4.608	4.632	4.836	4.883
China	0.000	-0.444	-1.575	-4.892	-6.751	-9.057	-10.809	-11.526
India	-0.208	-0.421	-0.845	-0.991	-1.126	-1.670	-2.514	-3.301
Indonesia	1.111	1.107	0.893	1.283	1.293	1.393	1.555	2.001
Japan	-2.789	-3.426	-4.189	-4.457	-4.277	-4.110	-4.063	-3.815
Malaysia	1.007	1.078	1.087	1.258	1.374	1.506	1.506	1.508
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	0.000	-0.504	-1.158
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.100	-0.100	-0.099
South Korea	-1.049	-1.541	-2.242	-2.727	-2.900	-3.001	-3.020	-2.898
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.097	-0.186	-0.162	-0.101	-0.105	-0.089
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG20_Ref12 Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.978**	**2.179**	**3.847**	**3.960**	**3.973**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.089	-0.089	-0.089
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.253	-0.252
United States	-0.551	-0.366	-0.054	2.319	2.521	4.188	4.301	4.314
Central & South America	**0.463**	**0.464**	**0.436**	**0.319**	**0.381**	**0.420**	**0.464**	**0.566**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.183	0.213	0.220	0.221
Trinidad and Tobago	0.495	0.719	0.703	0.659	0.732	0.742	0.774	0.776
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.083	-0.118	-0.131	-0.132	-0.127	-0.028
Europe	**-1.640**	**-2.856**	**-2.125**	**-2.580**	**-2.041**	**-2.039**	**-2.023**	**-1.992**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.094	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.388	-0.409	-0.387	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.275	-0.123	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.181	0.185	0.186	0.201	0.232
Poland	0.000	0.000	0.000	-0.144	0.000	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.668	-0.668	-0.667	-0.667	-0.667	-0.667
Turkey	-0.168	-0.275	-0.096	-0.208	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.430	-0.430	-0.430	-0.430	-0.429
Other Europe	-0.016	-0.041	-0.184	-0.207	-0.184	-0.184	-0.183	-0.183
Eurasia	**0.000**	**0.473**	**0.460**	**0.250**	**0.597**	**0.599**	**0.610**	**0.620**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.460	0.597	0.599	0.610	0.620
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.210	0.000	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.586**	**4.882**	**5.020**	**5.197**	**5.264**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.910	4.043	4.051	4.061
Oman	0.325	0.406	0.413	0.414	0.441	0.441	0.443	0.444
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.227	0.235	0.240	0.240	0.241
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.462	0.519
Africa	**1.607**	**2.062**	**1.714**	**1.803**	**2.177**	**2.422**	**3.049**	**3.062**
Algeria	0.907	0.682	0.815	0.778	0.819	0.989	1.399	1.404
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.713	0.634	0.915	0.920	1.001	1.007
Other Africa	0.031	0.194	0.185	0.392	0.443	0.513	0.649	0.651
Asia & Oceania	**-1.413**	**-2.957**	**-4.629**	**-6.356**	**-8.176**	**-10.269**	**-11.257**	**-11.494**
Australia	0.524	0.895	2.506	4.570	4.608	4.637	4.878	4.894
China	0.000	-0.444	-1.566	-4.926	-6.787	-8.785	-9.566	-9.801
India	-0.208	-0.421	-0.846	-0.991	-1.124	-1.648	-2.278	-2.425
Indonesia	1.111	1.107	0.898	1.284	1.294	1.409	1.839	2.071
Japan	-2.789	-3.426	-4.195	-4.455	-4.273	-4.108	-4.014	-3.744
Malaysia	1.007	1.078	1.087	1.258	1.361	1.506	1.508	1.512
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	0.000	-0.358	-0.924
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.099	-0.099	-0.099
South Korea	-1.049	-1.541	-2.245	-2.726	-2.899	-2.996	-2.987	-2.837
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.085	-0.186	-0.174	-0.101	-0.098	-0.055
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG20_HRR12 Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.980**	**2.364**	**3.915**	**3.963**	**3.975**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.089	-0.089	-0.089
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.253	-0.253
United States	-0.551	-0.366	-0.054	2.322	2.706	4.257	4.304	4.317
Central & South America	**0.463**	**0.464**	**0.432**	**0.320**	**0.381**	**0.424**	**0.471**	**0.566**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.183	0.215	0.220	0.221
Trinidad and Tobago	0.495	0.719	0.699	0.658	0.732	0.744	0.774	0.776
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.084	-0.117	-0.130	-0.131	-0.121	-0.028
Europe	**-1.640**	**-2.856**	**-2.128**	**-2.584**	**-2.041**	**-2.040**	**-2.021**	**-1.995**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.095	-0.094	-0.094	-0.095
France	-0.442	-0.483	-0.388	-0.407	-0.387	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.281	-0.123	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.181	0.185	0.186	0.206	0.232
Poland	0.000	0.000	0.000	-0.144	0.000	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.669	-0.668	-0.668	-0.668	-0.668	-0.668
Turkey	-0.168	-0.275	-0.098	-0.207	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.430	-0.430	-0.430	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.207	-0.184	-0.184	-0.184	-0.184
Eurasia	**0.000**	**0.473**	**0.460**	**0.251**	**0.597**	**0.599**	**0.611**	**0.629**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.461	0.597	0.599	0.611	0.629
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.210	0.000	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.587**	**4.869**	**5.020**	**5.190**	**5.264**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.898	4.043	4.051	4.061
Oman	0.325	0.406	0.413	0.414	0.441	0.441	0.443	0.444
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.227	0.236	0.240	0.240	0.241
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.456	0.519
Africa	**1.607**	**2.062**	**1.718**	**1.812**	**2.177**	**2.419**	**3.051**	**3.066**
Algeria	0.907	0.682	0.815	0.774	0.819	0.977	1.399	1.404
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.718	0.648	0.915	0.921	1.002	1.007
Other Africa	0.031	0.194	0.185	0.390	0.443	0.521	0.650	0.655
Asia & Oceania	**-1.413**	**-2.957**	**-4.627**	**-6.366**	**-8.348**	**-10.336**	**-11.265**	**-11.506**
Australia	0.524	0.895	2.506	4.567	4.607	4.640	4.878	4.894
China	0.000	-0.444	-1.567	-4.934	-6.900	-8.845	-9.604	-9.824
India	-0.208	-0.421	-0.844	-0.992	-1.128	-1.651	-2.271	-2.430
Indonesia	1.111	1.107	0.896	1.284	1.294	1.410	1.866	2.101
Japan	-2.789	-3.426	-4.194	-4.454	-4.280	-4.106	-4.016	-3.749
Malaysia	1.007	1.078	1.087	1.258	1.340	1.506	1.509	1.512
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	0.000	-0.349	-0.923
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.099	-0.099	-0.100
South Korea	-1.049	-1.541	-2.245	-2.726	-2.904	-2.996	-2.988	-2.840
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.084	-0.186	-0.194	-0.111	-0.108	-0.066
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG20_LRR12 Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.758**	**2.040**	**3.440**	**3.958**	**3.970**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.089	-0.088	-0.088
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.251	-0.251
United States	-0.551	-0.366	-0.054	2.099	2.381	3.781	4.297	4.309
Central & South America	**0.463**	**0.464**	**0.436**	**0.331**	**0.380**	**0.441**	**0.466**	**0.564**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.090	-0.090
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.112	-0.112
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.198	-0.198
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.183	0.219	0.221	0.222
Trinidad and Tobago	0.495	0.719	0.702	0.671	0.732	0.756	0.774	0.776
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.083	-0.118	-0.132	-0.131	-0.128	-0.033
Europe	**-1.640**	**-2.856**	**-2.129**	**-2.524**	**-2.041**	**-2.039**	**-2.013**	**-1.983**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.094	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.388	-0.395	-0.387	-0.387	-0.385	-0.385
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.253	-0.123	-0.123	-0.122	-0.122
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.181	0.185	0.186	0.201	0.232
Poland	0.000	0.000	0.000	-0.144	0.000	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.118	-0.118
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.669	-0.668	-0.668	-0.667	-0.664	-0.664
Turkey	-0.168	-0.275	-0.099	-0.199	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.430	-0.430	-0.430	-0.428	-0.428
Other Europe	-0.016	-0.041	-0.184	-0.197	-0.184	-0.183	-0.183	-0.183
Eurasia	**0.000**	**0.473**	**0.460**	**0.256**	**0.597**	**0.599**	**0.610**	**0.625**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.466	0.597	0.599	0.610	0.625
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.210	0.000	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.587**	**4.891**	**5.021**	**5.199**	**5.265**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.653	3.919	4.044	4.051	4.061
Oman	0.325	0.406	0.413	0.414	0.441	0.441	0.442	0.444
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.227	0.236	0.240	0.241	0.241
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.464	0.519
Africa	**1.607**	**2.062**	**1.727**	**1.878**	**2.178**	**2.530**	**3.050**	**3.062**
Algeria	0.907	0.682	0.815	0.807	0.819	1.054	1.399	1.404
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.727	0.677	0.915	0.921	1.002	1.007
Other Africa	0.031	0.194	0.185	0.394	0.443	0.555	0.649	0.651
Asia & Oceania	**-1.413**	**-2.957**	**-4.639**	**-6.285**	**-8.046**	**-9.992**	**-11.269**	**-11.503**
Australia	0.524	0.895	2.506	4.588	4.608	4.653	4.878	4.895
China	0.000	-0.444	-1.573	-4.894	-6.717	-8.661	-9.628	-9.848
India	-0.208	-0.421	-0.848	-0.990	-1.122	-1.584	-2.277	-2.431
Indonesia	1.111	1.107	0.897	1.283	1.293	1.440	1.854	2.115
Japan	-2.789	-3.426	-4.197	-4.445	-4.271	-4.080	-4.000	-3.730
Malaysia	1.007	1.078	1.087	1.258	1.394	1.507	1.508	1.512
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	0.000	-0.356	-0.957
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.099	-0.099	-0.099
South Korea	-1.049	-1.541	-2.246	-2.719	-2.896	-2.988	-2.974	-2.826
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.083	-0.183	-0.153	-0.097	-0.092	-0.051
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG20_Hi-D12 Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.962**	**2.125**	**3.724**	**3.962**	**3.974**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.088	-0.088	-0.088
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.252	-0.251	-0.251
United States	-0.551	-0.366	-0.054	2.304	2.467	4.065	4.301	4.313
Central & South America	**0.463**	**0.464**	**0.431**	**0.316**	**0.382**	**0.428**	**0.467**	**0.563**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.090	-0.090
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.112	-0.112
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.198	-0.198
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.183	0.215	0.220	0.220
Trinidad and Tobago	0.495	0.719	0.698	0.655	0.732	0.746	0.774	0.776
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.083	-0.117	-0.130	-0.132	-0.126	-0.033
Europe	**-1.640**	**-2.856**	**-2.128**	**-2.577**	**-2.041**	**-2.036**	**-2.013**	**-1.978**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.095	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.387	-0.409	-0.387	-0.386	-0.384	-0.384
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.274	-0.123	-0.123	-0.122	-0.122
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.143	-0.143
Norway	0.000	0.166	0.184	0.181	0.185	0.186	0.197	0.232
Poland	0.000	0.000	0.000	-0.144	0.000	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.118	-0.118
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.668	-0.668	-0.667	-0.666	-0.663	-0.662
Turkey	-0.168	-0.275	-0.098	-0.207	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.430	-0.430	-0.430	-0.429	-0.427	-0.427
Other Europe	-0.016	-0.041	-0.184	-0.207	-0.184	-0.183	-0.182	-0.182
Eurasia	**0.000**	**0.473**	**0.456**	**0.248**	**0.597**	**0.599**	**0.610**	**0.622**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.456	0.458	0.597	0.599	0.610	0.622
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.210	0.000	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.586**	**4.887**	**5.021**	**5.203**	**5.265**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.915	4.043	4.051	4.061
Oman	0.325	0.406	0.413	0.414	0.441	0.441	0.443	0.444
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.227	0.237	0.240	0.241	0.241
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.468	0.519
Africa	**1.607**	**2.062**	**1.727**	**1.834**	**2.178**	**2.459**	**3.048**	**3.058**
Algeria	0.907	0.682	0.815	0.773	0.819	1.009	1.399	1.404
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.727	0.668	0.916	0.920	1.002	1.007
Other Africa	0.031	0.194	0.185	0.393	0.443	0.529	0.647	0.647
Asia & Oceania	**-1.413**	**-2.957**	**-4.633**	**-6.369**	**-8.129**	**-10.194**	**-11.276**	**-11.504**
Australia	0.524	0.895	2.506	4.561	4.608	4.644	4.878	4.894
China	0.000	-0.444	-1.567	-4.929	-6.773	-8.773	-9.608	-9.824
India	-0.208	-0.421	-0.845	-0.991	-1.124	-1.625	-2.276	-2.425
Indonesia	1.111	1.107	0.892	1.283	1.293	1.419	1.823	2.076
Japan	-2.789	-3.426	-4.195	-4.456	-4.272	-4.091	-3.991	-3.723
Malaysia	1.007	1.078	1.087	1.258	1.381	1.506	1.508	1.512
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	0.000	-0.362	-0.962
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.099	-0.099	-0.099
South Korea	-1.049	-1.541	-2.245	-2.727	-2.898	-2.989	-2.969	-2.821
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.082	-0.082
Other Asia & Oceania	-0.008	-0.205	-0.083	-0.186	-0.162	-0.102	-0.097	-0.051
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG20_Ref20 Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.977**	**2.188**	**4.475**	**6.364**	**6.530**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.089	-0.089	-0.089
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.253	-0.252
United States	-0.551	-0.366	-0.054	2.319	2.529	4.816	6.706	6.871
Central & South America	**0.463**	**0.464**	**0.435**	**0.318**	**0.380**	**0.404**	**0.451**	**0.494**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.183	0.206	0.220	0.220
Trinidad and Tobago	0.495	0.719	0.704	0.658	0.732	0.733	0.772	0.774
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.085	-0.119	-0.132	-0.133	-0.138	-0.097
Europe	**-1.640**	**-2.856**	**-2.122**	**-2.584**	**-2.041**	**-2.039**	**-2.039**	**-2.036**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.095	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.388	-0.408	-0.387	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.278	-0.123	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.181	0.185	0.186	0.186	0.187
Poland	0.000	0.000	0.000	-0.144	0.000	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.668	-0.668	-0.668	-0.667	-0.667	-0.667
Turkey	-0.168	-0.275	-0.092	-0.209	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.430	-0.430	-0.430	-0.430	-0.429
Other Europe	-0.016	-0.041	-0.184	-0.208	-0.184	-0.184	-0.184	-0.183
Eurasia	**0.000**	**0.473**	**0.460**	**0.250**	**0.597**	**0.598**	**0.600**	**0.620**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.460	0.597	0.598	0.600	0.620
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.210	0.000	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.586**	**4.878**	**5.020**	**5.063**	**5.256**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.907	4.042	4.047	4.055
Oman	0.325	0.406	0.413	0.414	0.441	0.441	0.442	0.443
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.227	0.235	0.240	0.240	0.241
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.334	0.517
Africa	**1.607**	**2.062**	**1.714**	**1.788**	**2.178**	**2.319**	**2.929**	**3.051**
Algeria	0.907	0.682	0.815	0.766	0.819	0.914	1.359	1.400
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.714	0.631	0.916	0.920	0.938	1.004
Other Africa	0.031	0.194	0.185	0.391	0.443	0.485	0.632	0.647
Asia & Oceania	**-1.413**	**-2.957**	**-4.632**	**-6.334**	**-8.180**	**-10.775**	**-13.368**	**-13.916**
Australia	0.524	0.895	2.506	4.565	4.608	4.629	4.828	4.885
China	0.000	-0.444	-1.568	-4.896	-6.791	-9.178	-10.843	-11.268
India	-0.208	-0.421	-0.845	-0.991	-1.127	-1.699	-2.535	-2.994
Indonesia	1.111	1.107	0.893	1.283	1.293	1.372	1.555	2.029
Japan	-2.789	-3.426	-4.194	-4.457	-4.277	-4.117	-4.069	-3.804
Malaysia	1.007	1.078	1.087	1.258	1.368	1.506	1.506	1.508
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	0.000	-0.502	-1.124
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.100	-0.099	-0.099
South Korea	-1.049	-1.541	-2.245	-2.728	-2.901	-3.003	-3.024	-2.889
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.084	-0.185	-0.172	-0.102	-0.102	-0.077
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

LNG20_HRR20 Case (Net LNG Exports)(tcf)

	2005	2010	2015	2020	2025	2030	2035	2040
North America	**-0.551**	**-0.637**	**-0.404**	**1.980**	**2.398**	**5.086**	**6.772**	**6.865**
Canada	0.000	-0.072	-0.096	-0.089	-0.089	-0.089	-0.089	-0.089
Mexico	0.000	-0.198	-0.253	-0.253	-0.253	-0.253	-0.253	-0.253
United States	-0.551	-0.366	-0.054	2.322	2.739	5.427	7.113	7.206
Central & South America	**0.463**	**0.464**	**0.435**	**0.314**	**0.378**	**0.383**	**0.446**	**0.498**
Argentina	0.000	-0.062	-0.091	-0.091	-0.091	-0.091	-0.091	-0.091
Brazil	0.000	-0.096	-0.113	-0.113	-0.113	-0.113	-0.113	-0.113
Chile	0.000	-0.106	-0.162	-0.199	-0.199	-0.199	-0.199	-0.199
Colombia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Peru	0.000	0.064	0.183	0.182	0.183	0.192	0.220	0.220
Trinidad and Tobago	0.495	0.719	0.702	0.657	0.732	0.733	0.772	0.774
Venezuela	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Central & South America	-0.032	-0.055	-0.084	-0.121	-0.134	-0.139	-0.143	-0.093
Europe	**-1.640**	**-2.856**	**-2.127**	**-2.599**	**-2.041**	**-2.040**	**-2.038**	**-2.038**
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Belgium	-0.103	-0.203	-0.095	-0.095	-0.094	-0.094	-0.094	-0.094
France	-0.442	-0.483	-0.388	-0.410	-0.387	-0.387	-0.387	-0.387
Germany	0.000	0.000	-0.062	-0.062	-0.062	-0.062	-0.062	-0.062
Italy	-0.086	-0.315	-0.123	-0.288	-0.123	-0.123	-0.123	-0.123
Netherlands	0.000	0.000	-0.145	-0.144	-0.144	-0.144	-0.144	-0.144
Norway	0.000	0.166	0.184	0.181	0.185	0.186	0.186	0.187
Poland	0.000	0.000	0.000	-0.144	0.000	0.000	0.000	0.000
Portugal	-0.054	-0.104	-0.119	-0.119	-0.119	-0.119	-0.119	-0.119
Romania	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spain	-0.753	-0.955	-0.668	-0.668	-0.667	-0.667	-0.667	-0.667
Turkey	-0.168	-0.275	-0.097	-0.211	-0.015	-0.015	-0.015	-0.015
United Kingdom	-0.018	-0.647	-0.431	-0.430	-0.430	-0.430	-0.430	-0.430
Other Europe	-0.016	-0.041	-0.184	-0.208	-0.184	-0.184	-0.183	-0.183
Eurasia	**0.000**	**0.473**	**0.460**	**0.250**	**0.597**	**0.598**	**0.599**	**0.619**
Kazakhstan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Russia	0.000	0.473	0.460	0.460	0.597	0.598	0.599	0.619
Turkmenistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Uzbekistan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Eurasia	0.000	0.000	0.000	-0.210	0.000	0.000	0.000	0.000
Middle East	**1.534**	**3.450**	**4.549**	**4.586**	**4.863**	**5.018**	**5.053**	**5.255**
Iran	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Qatar	0.957	2.674	3.653	3.652	3.894	4.041	4.047	4.054
Oman	0.325	0.406	0.413	0.414	0.441	0.441	0.442	0.443
Saudi Arabia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United Arab Emirates	0.252	0.273	0.227	0.227	0.233	0.240	0.240	0.241
Other Middle East	0.000	0.097	0.257	0.294	0.295	0.296	0.325	0.517
Africa	**1.607**	**2.062**	**1.709**	**1.786**	**2.177**	**2.217**	**2.853**	**3.057**
Algeria	0.907	0.682	0.815	0.772	0.819	0.845	1.304	1.400
Egypt	0.245	0.343	0.000	0.000	0.000	0.000	0.000	0.000
Nigeria	0.425	0.844	0.709	0.624	0.915	0.919	0.933	1.004
Other Africa	0.031	0.194	0.185	0.390	0.443	0.453	0.616	0.653
Asia & Oceania	**-1.413**	**-2.957**	**-4.621**	**-6.318**	**-8.372**	**-11.263**	**-13.686**	**-14.256**
Australia	0.524	0.895	2.506	4.560	4.607	4.615	4.810	4.884
China	0.000	-0.444	-1.561	-4.877	-6.904	-9.473	-11.053	-11.356
India	-0.208	-0.421	-0.843	-0.992	-1.134	-1.783	-2.564	-3.182
Indonesia	1.111	1.107	0.893	1.284	1.294	1.318	1.532	2.005
Japan	-2.789	-3.426	-4.193	-4.456	-4.282	-4.146	-4.072	-3.812
Malaysia	1.007	1.078	1.087	1.258	1.335	1.505	1.506	1.508
Myanmar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pakistan	0.000	0.000	0.000	0.000	0.000	0.000	-0.526	-1.139
Singapore	0.000	0.000	-0.100	-0.100	-0.100	-0.099	-0.100	-0.099
South Korea	-1.049	-1.541	-2.244	-2.727	-2.905	-3.013	-3.027	-2.896
Thailand	0.000	0.000	-0.083	-0.083	-0.083	-0.083	-0.083	-0.083
Other Asia & Oceania	-0.008	-0.205	-0.083	-0.186	-0.200	-0.104	-0.109	-0.084
World	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**