Office of Manufacturing and Energy Supply Chains

Proposed Appropriation Language

For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for manufacturing and energy supply chain activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, $27,424,000, to remain available until expended: Provided, That of such amount, $6,424,000 shall be available until September 30, 2024, for program direction

P.L. 95-91, "Department of Energy Organization Act" (1977)
P.L. 109-58, "Energy Policy Act of 2005"
P.L. 110-140, "Energy Independence and Security Act of 2007"
P.L. 115-246, "Department of Energy Research and Innovation Act" (2018)
P.L. 116-260, "Consolidated Appropriations Act of 2020" (Section Z: Energy Act of 2020)

Explanation of Changes

The newly created Office of Manufacturing and Energy Supply Chains (MESC), within the Office of the Under Secretary for Infrastructure, will help train the next generation of energy engineers and conduct energy assessments to identify opportunities to improve productivity and competitiveness, reduce waste, and save energy for small- and medium-sized manufacturers. DOEs Industrial Assessment Centers provide a no-cost assessment, including in-depth evaluations of a facility conducted by engineering faculty with upper class and graduate students from a participating university. This detailed process analysis will generate specific recommendations with estimates of costs, performance, and payback schedules. These activities were previously funded within Energy Efficiency and Renewable Energy. Additional Bipartisan Infrastructure Law funding and full-time equivalents (FTEs) for the MESC program are captured in the budgetary projections in, and will be executed through, the Department's EERE account.

Manufacturing and Energy Supply Chains

Overview

The Office of Manufacturing and Energy Supply Chains (MESC), within the Office of the Under Secretary for Infrastructure, is responsible for strengthening and securing manufacturing and energy supply chains needed to modernize the nation's energy infrastructure and support a clean and equitable energy transition. MESC catalyzes the development of an energy sector industrial base through investments that establish and secure domestic clean energy supply chains and manufacturing, and by engaging with private-sector companies, other Federal agencies, and key stakeholders to collect, analyze, respond to, and share data about energy supply chains to inform future decision making and investment.
The office manages programs that develop clean domestic manufacturing and workforce capabilities, with an emphasis on opportunities for small and medium enterprises and communities in energy transition. MESC coordinates across all of DOE's programs on manufacturing and supply chain issues, including the Office of Clean Energy Demonstrations and the Advanced Manufacturing Office and new Solar Manufacturing Accelerator funded in the Office of Energy Efficiency and Renewable Energy (EERE).

DOE's Industrial Assessment Centers provide a no-cost assessment, including in-depth evaluations of a facility, conducted by engineering faculty with upper class and graduate students from a participating university. This detailed process analysis will generate specific recommendations with estimates of costs, performance, and payback times. These activities were previously funded within EERE.

Program Direction enables MESC to maintain and support a world-class Federal workforce that supports research, development, demonstration, and deployment of innovative technologies that will transition Americans to net-zero greenhouse gas emission, economy-wide, by no later than 2050 and ensure the clean energy economy benefits all Americans. The FY 2023 Program Direction Request provides resources for program and project management, oversight activities, contract administration, workforce management, IT support, and Headquarters (HQ) and field site non-laboratory facilities and infrastructure.
Programmatic Realignment

On February 9, 2022, Secretary Granholm announced a realignment to allow the Department to accelerate the transition more effectively to a clean-energy economy by pulling all levers along the commercialization spectrum—research, development, demonstration, and deployment. The Office of the Undersecretary for infrastructure (S3) focuses on deploying clean energy infrastructure in pursuit of national goals for affordable and reliable energy, creating high quality jobs, enhancing U.S. manufacturing, and addressing the climate crisis. Its efforts support achievement of carbon-free electricity in the U.S. by 2035 and a net zero economy by 2050 and delivering substantial benefits to the communities that are frequently left behind.

MESC provides skilled teams in energy planning; energy security; infrastructure financing; project development; project management; clean energy supply chains; state, community, and tribal engagement; and other key areas critical to the success of demonstration and deployment efforts as appropriated through BIL and annual appropriations. The Office engages and works in partnership with a diverse set of stakeholders as it stewards and seeks the greatest benefits from federal funding.

Manufacturing and Energy Supply Chains
($K)

	FY 2021 Enacted	FY 2022 Annualized CR[1]	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Manufacturing and Energy Supply Chains				
Facility and Workforce Assistance	12,000	12,000	18,000	+6,000
Energy Sector Industrial Base Technical Assistance	0	0	3,000	+3,000
Program Direction[2]	909	909	6,424	N/A
Total, Manufacturing and Energy Supply Chains	**12,909**	**12,909**	**27,424**	N/A

Future Year Energy Program
($K)

	FY 2023 Request	FY 2024 Estimate	FY 2025 Estimate	FY 2026 Estimate	FY 2027 Estimate
Manufacturing and Energy Supply Chains					
Manufacturing and Energy Supply Chains	27,424	28,000	28,000	29,000	30,000
Total, Manufacturing and Energy Supply Chains	**27,424**	**28,000**	**28,000**	**29,000**	**30,000**

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from, and match the outyear account totals published in, the FY 2023 President's Budget for both the 050 and non-050 accounts.

MESC priorities in the outyears include the following:

- Provide applied energy efficiency and productivity improvement assessments to small- and medium-sized manufacturers and provide direct financial assistance to reduce or offset the costs of energy efficiency, productivity improvement, and emissions reduction implementation.
- Provide technical assistance to manufacturers to develop strategies and opportunities to address regional energy sector supply chain challenges.
- Provide support to help train the next generation of energy engineers by enabling hands-on energy efficiency and sustainability experience at local manufacturing facilities

Support the development of a Data, Modeling, and Analysis toolset to provide critical information and analyses for supply chain modeling and mapping to inform strategies to address energy industrial base manufacturing and supply chain challenges and inform future investment priorities.

[1] The FY 2022 Annualized CR amounts reflect the continuing resolution level annualized to a full year.

[2] PD was prorated based on the EERE Program Direction line, so the funding is non-comparable PD Request for FY23 includes $5.5M for National Environmental Policy Act (NEPA) and $15K for pay raise assumption.

Facility and Workforce Assistance

DOE's Industrial Assessment Centers (IACs) can help small- and medium-sized U.S. manufacturers save energy, improve productivity, and reduce waste by providing no-cost technical assessments conducted by university-based teams of engineering students and faculty. A collection of all the publicly available and recommendation data is available online at the Industrial Assessment Centers Database (https://iac.university/). This includes information on the type of facility assessed (size, industry, energy usage, etc.) and details of resulting recommendations (type, energy, and dollar savings etc.).

Manufacturers can contact the closest **IAC location** about receiving an IAC assessment if they meet these criteria:

- Within Standard Industrial Codes (SIC) 20-39
- Gross annual sales below $100 million
- Fewer than 500 employees at the plant site
- Annual energy bills more than $100,000 and less than $3.5 million
- No professional in-house staff to perform the assessment

IACs train the next generation of energy savvy engineers, more than 60 percent of which pursue energy-related careers upon graduation. IAC assessments are in-depth evaluations of a facility conducted by engineering faculty with upper class and graduate students from a participating university. After a remote survey of the plant, the team conducts a one or two-day site visit to take engineering measurements. The team performs a detailed process analysis to generate specific recommendations with estimates of costs, performance, and payback times. Within 60 days, the plant receives a confidential report detailing the analysis, findings, and recommendations. In six to nine months, the IAC team calls the plant manager to verify what recommendations have been implemented. Universities periodically apply to host an IAC and receive DOE funding to provide assessments. The IAC program has offered assessments since 1976.

Key accomplishments of the IACs include:

- 502 IAC assessments have been conducted in FY21 and FY22 year to date, generating 3,250 recommendations
    - 69 M Therms of energy savings identified and $72 million in cost savings from energy/water use reductions and productivity gains
- 32 IAC centers were selected through a competitive solicitation to operate through the next five years from FY22-FY26
    - 7 centers are located at Minority Serving Institutions (MSIs) or have MSI partners
- Currently there are 545 engineering students participating in the program across the 32 centers
- IAC program served as one of 22 pilot programs across the Federal government for the Justice40 Initiative, to collect data on the percentage of program activities that support disadvantaged communities
- Technical Assistance Tools
    - The IACs developed a wastewater tool that can be used to optimize activated sludge processes in wastewater treatment facilities
    - Completed 10 tutorials as part of the IAC 101 Program (https://iac.university/iac101). A total of 14 modules have been planned on topics ranging from demand management to industrial heating and cooling to steam systems

Each year, about 500 engineering students at IACs receive hands-on assessment training at operating industrial facilities and gain substantiative experience performing evaluations of industrial processes and energy systems. Alumni report the training sets them apart in the job market.

Highlights of the FY 2023 Request

Key focus areas include creating partnerships between the public and private sector to address manufacturing and supply chain challenges; providing energy and carbon assessments to small- and medium-sized manufacturers; training the next generation of energy engineers; and, reducing energy, waste, and carbon emissions, while improving productivity and competitiveness of manufacturers.

Additional areas of focus include:

- Provide applied energy efficiency and productivity improvement assessments to small- and medium-sized manufacturers
- Work collaboratively with state, local, and utility energy efficiency programs that could aid manufacturers in implementing assessment recommendations
- Conduct outreach to manufacturers to educate them on DOE's full suite of technical assistance programs
- Incorporate decarbonization strategic planning into assessment approach
- Train the next generation of energy engineers by enabling hands-on energy efficiency experience at local manufacturing facilities
- Expand the IAC 101 on-line technical assistance platform aimed at extending the reach of the IACs beyond their immediate clients
- Expand the Women in Energy Efficiency (WE^2) network that provides mentorship for female IAC students, promoting ongoing female participation in STEM
- Assist in the formulation and assessment of resiliency plans to respond to unexpected events that might disrupt normal production conditions and cause production losses
- Provide expanded follow-up services after completed assessments to encourage implementation of energy/carbon saving recommendations

Energy Sector Industrial Base Technical Assistance (NEW)

The proposed Energy Sector Industrial Base Technical Assistance program will provide a center of excellence on regional energy sector supply chain challenges, strategies to address those opportunities, as-needed interagency coordination, and technical assistance to ensure robust clean energy supply chains. Includes emphases on U.S.-based clean energy manufacturing and quality jobs. Funding will also be utilized for technical assistance to the Department of Treasury in implementing tax provisions associated with the energy manufacturing industry.

Manufacturing and Energy Supply Chains
Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Manufacturing and Energy Supply Chains $15,909,000	**$27,424,000**	**+$11,515,000**
Facility and Workforce Assistance $12,000,000	$18,000,000	+$6,000,000
• Provide assessments to manufacturers on energy and water efficiency, waste reduction, and energy management processes. • Fund competitively selected partnerships between universities, and the private sector that emphasize student-led projects to develop new tools and processes that address energy management and manufacturing challenges. • Train the clean energy innovators and manufacturing energy management workforce of the future.	• Expand IAC assessment reach to target technical assistance to disadvantaged communities, EEEJ communities, and areas with high industrial emissions. • Expand technical assistance for the implementation of energy and water efficiency projects and practices recommended by IAC assessments. • Expand diversity efforts targeting non-traditional engineering students for workforce training opportunities. • Develop expanded assessment approach that focuses on decarbonization recommendations for manufacturers.	• Increased technical assistance to disadvantaged communities, EEEJ communities, and areas with high industrial emissions. • Increased funding for workforce development activities focused on increasing diversity in the IAC student mix and creating opportunities for additional students to be involved in onsite training and research projects. • Expand the technology focus of the IAC assessments to include emerging decarbonization technologies and practices.
Energy Sector Industrial Base Technical Assistance $0	$3,000,000	+$3,000,000
	• Provide a center of excellence on regional energy sector supply chain gaps and issues • Technical assistance to the Department of Treasury in implementing tax provisions with industry	• New program in FY 2023

Program Direction

Overview

Program Direction provides for the costs associated with the Federal workforce, including salaries, benefits, travel, training, building occupancy, IT services, security clearance, and other related expenses. It also provides for the costs associated with contractor services that, under the direction of the Federal workforce, support the Manufacturing and Energy Supply Chains (MESC) mission.

Salaries and Benefits support Federal employees who provide executive management, programmatic oversight, and analysis for the effective implementation of the FEMP program.

Travel & Training includes transportation, subsistence, and incidental expenses that allow MESC to effectively provide the Department's electricity-related outreach to regions, states, and tribes regarding planning needs and issues, policies, siting protocols, and new energy facilities.

Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analyses to management. These efforts include issue-oriented support on science, engineering, environment, and economics that benefit strategic planning; technology and market analysis to improve strategic and annual goals; development of management tools and analyses to improve overall office efficiency; assistance with communications and outreach to enhance MESC's external communication and responsiveness to public needs; development of program-specific information tools that consolidate corporate knowledge, performance tracking and inventory data, improve accessibility to this information, and facilitate its use by the entire staff.

Other Related Expenses includes corporate IT support (for DOE's Energy Information Technology Services [EITS] desktop services and IT equipment) and working capital fund (WCF) expenses, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes office safety requirements, equipment upgrades and replacements, commercial credit card purchases using simplified acquisition procedures where possible, security clearance expenses, and other needs. The FY 2023 request also includes funding for NEPA related activities.

Highlights of the FY 2023 Budget Request

The FY 2023 Program Direction Request reflects a new proposed Control Point within MESC for increased staffing to support the new and expanded program activities requested in FY 2023.

Program Direction
Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request Level	Explanation of Changes FY 2023 Request Level vs. FY 2021 Enacted
Program Direction N/A– funding is non-comparable	**$6,424,000**	**N/A**
• **Salaries and Benefits**	• $600,000 - Salaries and Benefits support 3 FTEs that provide executive management, programmatic oversight, and analysis for the effective implementation of the program. Funding also provides support for S3 operations.	
• **Travel & Training**	• $24,000 - Travel includes transportation, subsistence, and incidental expenses to effectively facilitate its mission	
• **Support Services**	• $150,000 - Support Services includes contractor support directed by the Federal staff to perform administrative tasks and provide analysis to management. Support Services may include support for post-doctoral fellows	
• **Other Related Expenses**	• $5,650,000 - Other Related Expenses includes EITS desktop services and WCF expense, such as rent, supplies, copying, graphics, mail, printing, and telephones. It also includes equipment upgrades and replacements, commercial credit card purchases using the simplified acquisition procedures to the maximum. extent possible, security clearance expenses and other needs. $5.5M is also included for NEPA compliance activities.	

Bipartisan Infrastructure Law (BIL) Investments

EERE was appropriated funds through the Bipartisan Infrastructure Law (BIL) (P.L. 117-58), which includes activities realigned to the new Office of Manufacturing and Energy Supply Chains (MESC). In FY 2022, approximately $1.6 billion of activities related to vehicles, buildings, advanced manufacturing, and energy efficiency will be managed by the new MESC office. In FY 2023, funding will continue for activities related to vehicles (battery manufacturing and recycling grants and battery material processing grants), buildings (implementation grants for industrial research and assessment centers and industrial research and assessment centers), and advanced manufacturing (advanced energy manufacturing and recycling grant program). Please refer to the EERE budget chapter for additional information on these BIL activities.

($K)

	FY 2022 BIL Appropriation	FY 2023 BIL Appropriation	Managing Organization
Energy Efficiency and Renewable Energy			
Vehicles			
Battery Manufacturing and Recycling Grants	600,000	600,000	MESC
Battery Material Processing Grants	600,000	600,000	MESC
Weatherization Assistance Program			
Buildings			
Implementation Grants for Industrial Research & Assessment Centers	80,000	80,000	MESC
Industrial Research and Assessment Centers	30,000	30,000	MESC
Advanced Manufacturing			
Battery processing & manufacturing / battery & critical mineral recycling	125,000	0	MESC
Advanced Energy Manufacturing and Recycling Grant Program	150,000	150,000	MESC
Manufacturing Leadership	50,000	0	MESC
Energy Efficiency			
Energy Efficient Transformer Rebates	10,000	0	MESC
Extended Product System Rebates	10,000	0	MESC
Total, Energy Efficiency and Renewable Energy	**1,655,000**	**1,460,000**	