STATEMENT OF CONSIDERATIONS

CLASS WAIVER OF THE GOVERNMENT'S PATENT RIGHTS IN CERTAIN INVENTIONS MADE IN THE COURSE OF OR UNDER ARPA-E OTHER TRANSACTION AGREEMENTS UNDER ARPA-E'S COOLERCHIPS PROGRAM W(A)-2024-001

This is a class patent waiver of the Government's rights to title in any invention that a domestic entity[1] makes or conceives in the course of or under an Other Transactions (OT) Agreement issued under DOE's OT Authority codified in 42 U.S.C. 7256(a) by the Advanced Research Projects Agency-Energy (ARPA-E) under ARPA-E's COOLERCHIPS program.

This waiver is subject to a U.S. competitiveness provision that requires products embodying any waived invention or produced through the use of any waived invention be manufactured substantially in the United States or a U.S. manufacturing plan that provides measurable commitments by the domestic entity to support U.S. manufacturing of the technologies related to the ARPA-E OT agreement when approved by the ARPA-E OT Program Director, and ARPA-E's Chief Counsel in consultation with the cognizant DOE Patent Counsel.

Per 42 U.S.C. 5908, DOE takes title to subject inventions made or conceived in the course of or under "any contract, grant, agreement, understanding, or other arrangement, which includes research, development, or demonstration work," with DOE unless the Department waives its rights to such title via its patent waiver authority, or because another statutory authority specifically supersedes the default title vesting authority provided in section 5908. Two such statutory authorities are the Bayh-Dole Act[2,3] as codified 35 U.S.C. 200-212 and DOE's OT Authority provided in 42 U.S.C. 7256(g). It is important to note the while the OT authority provided by 42 U.S.C. 7256(g) specifically carves out DOE's title taking statutes including section 5908, the broader OT authority provided in 42 U.S.C 7256(a) does not specifically supersede DOE's title taking authorities.

While the IP flexibilities available through 42 U.S.C. 7256(a) are not quite as broad as the flexibilities provided by 7256(g), which provides full relief from the Department's patent vesting statutes, it is within the authority provided in DOE's patent waiver regulations for the Assistant General Counsel for Technology Transfer and Intellectual Property (AGC) to approve alternate patent clauses for arrangements other than contract, grants and cooperative agreements.

Specifically, 10 CFR 784.12 provides that "[a]dvance waivers for arrangements other than contracts, grants, and cooperative agreements may use other clause provisions approved by the Assistant General Counsel for Technology Transfer and Intellectual Property, except that all waivers for funding agreements shall be subject to the license of clause paragraph (b) and the provisions of clause paragraphs (i) and (j)." Paragraphs (b), (i) and (j) are the government use license, U.S. Preference provision and march-in-rights sections.

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[1] A "domestic entity," as used in this class patent waiver, is any entity that is incorporated or otherwise formed under the laws of a particular State or territory of the United States which satisfies all applicable requirements included in the Funding Opportunity Announcement. For entities that do not meet the definition of domestic entity, but where the considerations discussed in this class waiver otherwise apply, the Assistant General Counsel for Technology Transfer and Intellectual Property may grant rights under this waiver with the concurrence of ARPA-E.

[2] It is important to note that OTAs, whether authorized by 7256(a) or (g) are outside the scope of the Bayh-Dole Act since they do not meet the definition of a funding agreement in 35 U.S.C. 201.

[3] Bayh-Dole defines the term "funding agreement" as any contract, grant, or cooperative agreement entered into between any Federal agency, other than the Tennessee Valley Authority, and any contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal Government. Such term includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of experimental, developmental, or research work under a funding agreement as herein defined. See, 35 USC 201.

Since OT Agreements under 7256(a) are, by definition, arrangements other than contracts, grants and cooperative agreements, and thus not "funding agreements", customized patent provisions can be utilized in OTs authorized by 42 U.S.C. 7256(a), including clauses that narrow, modify or even eliminate the government use license, U.S. Preference requirement and march-in-rights, as long as such provisions are approved by the AGC through an appropriately issued patent waiver. Given the importance of the issues any such waivers shall be signed by the AGC and the cognizant Assistant Secretary or equivalent program official (e.g. AR-1), or Acting Assistant Secretary or equivalent program official (e.g. Acting AR-1).

A patent waiver is warranted when it is determined that the interests of the United States and the general public will best be served with the patent waiver. When making such a determination, DOE should have the following objectives: (1) make the benefits of the energy research, development and demonstration program funded by ARPA-E widely available to the public in the shortest time; (2) promote the commercialization of the ARPA-E-funded inventions; (3) encourage participation in the programs funded by ARPA-E; and (4) encourage competition.

DOE may grant an advance patent waiver for a particular entity or a class patent waiver for a class of entities. A class patent waiver is appropriate when all members of a particular class would likely qualify for an advance patent waiver. As demonstrated below, domestic entities performing work under an ARPA-E OT agreement for COOLERCHIPS constitute a class of entities in which all of the members would likely qualify for an advance patent waiver.

ARPA-E's work is consistent with DOE's policy objectives. The America COMPETES Act of 2007 authorized the establishment of ARPA-E within DOE. ARPA-E's mission is to: (1) enhance the economic and energy security of the United States through development of energy technologies that decrease our nation's dependence on foreign energy sources, reduce greenhouse gas emissions, and improve energy efficiency of all economic sectors; and (2) ensure that the United States maintains a technological lead in developing and deploying advanced energy technologies (42 U.S.C. § 16538(c)(I)). Since its formal establishment in 2009, ARPA-E has dedicated itself to advancing high-potential, high-impact energy technologies that are too risky for private-sector investment and that are not supported by other government programs. ARPA-E invests in research projects that can have transformational impacts i.e., the potential to radically improve U.S. economic prosperity, national security, and environmental well-being. ARPA-E empowers America's energy researchers with funding, technical assistance, and market readiness.

The DOE patent waiver regulations provide a list of considerations that must be used when determining whether an advance patent waiver will best serve the interests of the United States and the general public. The following is a list of those considerations along with an analysis on how each consideration applies to a domestic entity performing work under an ARPA-E OT agreement:

(a) *The extent to which the participation of the entity (often referred to as "recipient" or "performer" in ARPA-E agreements) will expedite the attainment of the purposes of the program.*

Each ARPA-E program issues FOAs for research and development efforts in areas that the program has determined will lower the cost associated with its respective technology so that the technology will be more broadly adopted and used across the U.S.

ARPA-E typically selects the recipients through a competitive process based on the merit criteria set forth in the FOA. Specifically, ARPA-E selects each recipient based on the determination that the recipient is most likely to achieve the purpose of the FOA compared to the other organizations that have applied for funding. In unique circumstances, ARPA-E may also determine that an entity competitively selected under a FOA merits additional support on a non-competitive basis. In both competitive and non-

competitive circumstances, the participation of a particular entity is determined by ARPA-E to be the best means of attaining the program's purposes.

(b) *The extent to which a waiver of all or any part of such rights in any or all fields of technology is needed to secure the participation of the particular participating entity.*

Waiving patent rights encourages participation in ARPA-E funded research, development and demonstration projects. With patent rights, an organization is more likely to be willing to invest (e.g., cost share) in research, development and demonstration projects that may lead to valuable inventions. Therefore, granting a patent waiver significantly encourages the participation of domestic entities. Without such clarity on their patent rights, many of the best entities would likely not apply for ARPA-E funding. Some COOLERCHIPS participants have never engaged with ARPA-E before due to concerns about certain contractual terms. For further background, the ARPA-E COOLERCHIPS program is part of an ARPA-E pilot initiative to use OT agreements to attract commercial firms – those which rarely, if ever, participate in federal research programs - to engage in ARPA-E research programs. This pilot will require commercial provisions in the OT agreements, including that the participant large companies provide at least 50% sharing of total project costs, and pre-negotiated fixed-price technical milestones, each of which must be met before any payment for achievement of a specific milestone. This shifts virtually all the business risk of the research initiative to the participant.

(c) *The extent to which the work to be performed under the agreement is useful in the production or utilization of special nuclear material or atomic energy.*

COOLERCHIPS programs will not be useful in the production or utilization of special nuclear material or atomic energy.

(d) *The extent to which the participating entity's commercial position may expedite utilization of the research, development, and demonstration results.*

The utilization of the research, development, and demonstration results is more likely expedited with a domestic entity having patent rights instead of the Government retaining the patent rights. With the patent rights, the domestic entity is more likely to be able and willing to make the necessary investment to commercialize the results.

In order to progress the technology beyond research, development and demonstration to commercialization, a business must make a significant investment in time, equipment and other resources. The investment is not guaranteed due to the risk associated with being the first one to introduce a new technology to the marketplace. A business is much less likely to make the investment and accept the risks, if it does not have the patent protection to prevent its competitors from copying the technology if and once the business establishes a market for the new technology.

Congress recognized that federally funded technology was more likely to be utilized and commercialized when the organizations that made the inventions had the patent rights to the inventions with the passage of Bayh-Dole. Congress passed Bayh-Dole, in part, to promote the utilization of federally funded inventions by domestic small businesses and non-profit organizations. Executive Order 12591 implicitly recognized that the same policy considerations behind Bayh-Dole also apply to entities that are not

covered by Bayh-Dole. This same reasoning also applies to domestic entities under ARPA-E OT agreements. In the case of COOLERCHIPs, the performers are cutting edge commercial entities that are well positioned to incorporate any developed technologies into their products and thereby expediting utilization of any technology coming out of the program.

(e) *The extent to which the Government has contributed to the field of technology to be funded under the agreement.*

The Government has made significant and strategic contributions to support the development and deployment of advanced semiconductor technologies. Although the Government's contributions have been important, private industry contributions have been significant, as well. In addition to cost share provided under a particular OT agreement, it is typical that the work of the OT agreement relies significantly on past investments made by a domestic entity and will rely on future investments from the domestic entity in order to commercialize the technology.

(f) *The purpose and nature of the agreement, including the intended use of the results developed thereunder.*

One of the purposes of the ARPA-E OT agreements is improve U.S. economic prosperity, national security, and environmental well-being. Granting a waiver should expedite the deployment of economic and national security related technologies in the United States. Therefore, granting a waiver is consistent with the purpose of the ARPA-E OT agreements.

(g) *The extent to which the participating entity has made or will make substantial investment of financial resources or technology developed at the contractor's private expense which will directly benefit the work to be performed under the agreement*.

Under most ARPA-E OT agreements, domestic entities will typically be required to meet certain cost share requirements. To the extent that Section 988 of the Energy Policy Act of 2005 applies, an entity is usually required to provide at least a 20% cost share for research and development activities and at least a 50% cost share for demonstration activities.

In addition to cost share, a domestic entity will typically have made a past investment and intend to make a future investment beyond the OT agreement related to the technology subject to an ARPA-E OT agreement. The past and anticipated future investment varies from domestic entity to domestic entity. However, based on past patent waiver requests, it is typical that the work to be done under an OT agreement by an entity is built upon and benefits from a past investment by the entity (e.g., use of equipment and facilities and background intellectual property). It is also typical that an entity has the intent and capability of making future investments in promising technologies resulting from work under the OT agreement.

(h) *The extent to which the field of technology to be funded under the agreement has been developed at the participating entity's private expense.*

The extent to which an entity has developed a particular technology at private expense will vary. It is typical, however, for an entity to rely on its past investments to perform the work under an agreement.

(i) *The extent to which the Government intends to further develop to the point of commercial utilization the results of the effort.*

A particular entity may receive additional federal funding related to the technology subject to an ARPA-E OT agreement. However, it would be unusual for the Government to conduct any development work on energy technologies by itself related to an ARPA-E OT agreement. Any additional federal funding to an entity is likely to be made through a competitive process, in support of other ARPA-E program objectives, and subject to the required terms and conditions for receiving federal funding (e.g., 50% cost share for demonstration activities).

(j) *The extent to which the agreement objectives are concerned with the public health, public safety, or public welfare*.

One of the purposes of the ARPA-E OT agreements is improve U.S. economic prosperity, national security, and environmental well-being. The adoption of new and improved semiconductor technologies would indirectly benefit the public welfare of the U.S. Granting a waiver should expedite the adoption of more efficient semiconductor technologies. Therefore, granting a waiver is in the interest of public health, safety and welfare.

(k) *The likely effect of the waiver on competition and market concentration.*

Energy and semiconductors are both globally competitive markets.

Typically, a patent waiver encourages an entity to make the necessary investments needed to bring its particular technology solution to the market. A patent waiver should not have an impact of the other technology solutions in the market. By encouraging the entity to bring another technology solution to the market and not impacting the other solutions already in the market, a patent waiver supports competition. The performers under the COOLERCHIPS program will better enable the U.S. to compete in the world semiconductor industry.

(l) *In the case of a domestic non-profit educational institution under an agreement not governed by Chapter 18 of Title 35, United States Code, the extent to which such institution has a technology transfer capability and program approved by the Secretary or designee as being consistent with the applicable policies of this section*.

While domestic non-profit educational institutions funded under OTs authorized by 42 U.S.C. 7256(a) would not technically be governed by Chapter 18 of Title 35 for work under such OTs, such institutions are governed by Chapter 18 of Title 35 of the United States Codes for most other federally funded work.

(m) *The small business status of the contractor under an agreement not governed by Chapter 18 of Title 35, United States Code.*

While domestic small businesses funded under OTs authorized by 42 U.S.C. 7256(a) would not technically be governed by Chapter 18 of Title 35 for work under such OTs, such small businesses are governed by Chapter 18 of Title 35 of the United States Codes for most other federally funded work.

(n) *Such other considerations, such as benefit to the U.S. economy, that the Secretary or designee may deem appropriate*.

Most patent waivers include a U.S. competitiveness provision that requires products embodying any waived invention or produced through the use of any waived invention be manufactured substantially in the United States. In the past, DOE has agreed to other commitments to the U.S. economy in lieu of the U.S. competitiveness provision. This class waiver will be subject to the standard U.S. competitiveness provision or a U.S. manufacturing plan that provides for measurable commitments to U.S. manufacturing.

As shown above, a domestic entity performing work in an ARPA-E OT agreement is likely to qualify for an advance patent waiver because, based on the requisite considerations of the DOE patent waiver regulations, it best serves the interests of the U.S. and the general public.

Historically, DOE has agreed to the proposition that domestic entities qualify for advance patent waivers under ARPA-E agreements because the objectives and considerations set forth in the DOE patent waiver regulations are usually met by the domestic entity.

This class patent waiver shall be subject to the standard ARPA-E OT terms and conditions provided in Appendix A, including a U.S. manufacturing requirement, that follows this statement of considerations unless otherwise approved in writing by GC-62 and AR-1 (or Acting AR-1).

In addition, the Performer may retain a nonexclusive royalty-free license in the field of use which is the subject of the Agreement throughout the world in each subject invention to which a lower tier party retains title. The Performer's license may extend to its domestic subsidiary and affiliates, if any, within the corporate structure of which the Performer is a party and includes the right to grant sublicenses of the same scope to the extent the Performer was legally obligated to do so at the time the agreement was effective. In this subclause, an "affiliate" of, or a person "affiliated" with, a specified person, is a person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, the person specified.

Data Rights: Special Data Protection under 42 U.S.C. 7256(a). While 7256(a) does not automatically provide special data protection (i.e., the ability to protect generated data similar to trade secrets for a limited period of time) like that provided in 7256(g), to the extent that a project falls within the authority of Section 1005 of EPACT 2005, the special data protections (up to 30 years as appropriate) can be applied. ARPA-E may apply the interim authorization signed on February 9, 2022 by GC-62 including, in part, a ten-year data protection period for Protected Data resulting from ARPA-E funded research projects awarded on or after November 14, to ARPA-E OT agreements under 7256(a), provided that the requirements of the authorization are met. It is incumbent upon the relevant DOE program (in this case ARPA-E) to make determinations on whether any project or set of projects falls within the authority of EPACT 2005.

Scope: This class patent waiver is available to any domestic entity that (1) is a recipient, or subrecipient at any tier, to a OT agreement issued under ARPA-E's COOLERCHIPS program and (2) cost share is provided by the recipient or subrecipient or the recipient on behalf of any subrecipient for at least the statutory minimum cost share for the work assigned to each under the OT agreement or project (i.e., at least 20% for research and development activities and at least 50% for demonstration activities, even when a domestic entity would have

otherwise qualified for a cost share waiver). The scope of this class patent waiver may be extended to non-domestic entities and/or entities providing less than the cost share requirements described above with the written approval of the ARPA-E Director AR-1 or Acting ARPA-E Director, and the AGC.

Considering the foregoing, and in view of the statutory objectives to be obtained and the factors to be considered under DOE's statutory waiver policy, all of which have been considered, it has been determined that this class waiver as set forth above meets the statutory requirements, e.g. will best serve the interest of the United States and the general public. It is recommended that the waiver be granted.

Based upon the foregoing Statement of Considerations, it is determined that the interests of the United States and the general public will best be served by a waiver of the United States and foreign patent rights as set forth herein, and, therefore, the waiver is granted. This waiver shall not affect any waiver previously granted.

APPROVAL:

[redacted]

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Date: _____

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Evelyn N. Wang
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