

STATEMENT OF CONSIDERATIONS

CLASS WAIVER OF PATENT RIGHTS TO INVENTIONS MADE UNDER CERTAIN OFFICE OF FOSSIL ENERGY(FE) FUNDING OPPORTUNITY ANNOUNCEMENTS RELEASED DURING FISCAL YEARS 2017 THROUGH 2021- W(C) 2016-006; CH-1770

This is a class patent waiver of the Government's right to title in inventions conceived or made by a domestic large business in the course of or under a FE-22 Office of Advanced Fossil Technology Systems or FE-32 Office of Oil and Gas Resources funding agreement selected through a funding opportunity announcement ("FOA") released by FE during fiscal year 2017 through 2021. As used herein, FE-22 Office of Advanced Fossil Technology Systems or FE-32 Office of Oil and Gas Resources FOA released in during fiscal year 2017 through, and including, 2021 shall be retroactive to include such FOAs released during this period, but before the execution of this class patent waiver. A domestic large business, as used in this class patent waiver, is any for-profit entity that does not qualify as a "small business" under Bayh-Dole and is incorporated (or otherwise formed) under the laws of a particular State or territory of the United States and is not owned, controlled, or influenced by a foreign government, agency, firm, corporation or person. The waiver is subject to a Government license, march-in rights, and preference for U.S. industry provisions set out in 35 U.S.C. 202-204. The waiver is further 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.

DOE takes title to inventions conceived or made by a large business, unless DOE waives its right to title. 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 FE widely available to the public in the shortest time; (2) promote the commercialization of the FE-funded inventions; (3) encourage participation in the programs funded by FE; and (4) encourage competition.

DOE may grant an advance patent waiver for a particular contractor or a class patent waiver for a class of contractors. 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 large businesses performing work under a FE funding agreement constitute a class of contractors in which all of the members would likely qualify for an advance patent waiver.

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 large business performing work under a FE funding agreement:

- (a) The extent to which the participation of the contractor (referred to as "recipient" in FE awards) will expedite the attainment of the purposes of the program.

Each FE program issues FOAs for work in areas that the program has determined will help provide clean, secure and affordable energy with its respective technology so that the technology will be more broadly adopted and used across the U.S.

The funding program selects the recipients through a competitive process based on the merit criteria set forth in the FOA. Specifically, the program 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 applied for funding. Therefore the participation of a particular domestic large business was determined by the funding program 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 contractor.

Waiving patent rights encourages participation in FE funded research, development and demonstration projects. With patent rights, an organization is more likely to invest (*e.g.*, cost share) in research, development and demonstration projects that may lead to valuable inventions.

Congress recognized the value of patent rights with the passage of the Bayh-Dole Act, 35 U.S.C. §§ 200-212 ("Bayh-Dole"). One of the objectives of Bayh-Dole was to encourage participation in federally funded research, development and demonstration projects. Congress understood that more organizations would participate in federally funded research, development and demonstration projects when the organizations can own the rights to the inventions conceived or first actually reduced to practice in performance of the work under a funding agreement (referred to as "subject inventions"). Therefore, Bayh-Dole requires that funding agencies generally allow domestic small businesses and non-profit organizations the right to retain title to their subject inventions. Bayh-Dole was extended to all types of contractors, including domestic large businesses, under Executive Order 12591, to the extent permitted by law. However, Section 9 of the Federal Non-nuclear Research and Development Act of 1974 (42 U.S.C. § 5908) provides that title to subject inventions vests with DOE unless title is waived. Because of this provision, the Executive Order does not extend Bayh-Dole to domestic large businesses under FE funding agreements and the right for large businesses to retain title to subject inventions must be granted through the patent waiver process. Nonetheless, the same policy reasoning behind Bayh-Dole and the Executive Order applies here to domestic large businesses (*i.e.*, allowing large businesses to take title to their subject inventions will encourage their participation) under FE funding agreements. Therefore granting a patent waiver encourages the participation of domestic large businesses

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

FE programs are focused on fossil energy technologies. It is highly unlikely that the work under a FE funding agreement would be useful in the production or utilization of special nuclear material or atomic energy.

- (d) The extent to which the contractor'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 large business having patent rights instead of the Government retaining the patent rights. With the patent rights, the domestic large business 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 market place. A business is 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 large business contractors. This same reasoning also applies to domestic large businesses under FE funding agreements.

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

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

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

FE funding agreements selected through a FE FOA are financial assistance instruments. The principal purpose of financial assistance is to transfer a thing of value to a recipient to carry out a public purpose of support or stimulation authorized by law rather than

acquiring property or services for the direct benefit or use of the U.S. government. The purposes of the FE funding agreements help the United States meet its continually growing need for secure, reasonably priced and environmentally sound fossil energy supplies. Granting a waiver encourages participation and supports commercialization of the technologies. Therefore, granting a waiver is consistent with the purpose of the FE funding agreements.

- (g) The extent to which the contractor 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 contract.

Under FE funding agreements, domestic large businesses are usually required to meet certain cost share requirements. For example, under Section 988 of the Energy Policy Act of 2005, a large business 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 large business will typically have made a past investment and intend to make a future investment beyond the funding agreement related to the technology subject to a FE funding agreement. The past and anticipated future investment varies from domestic large business to domestic large business. However, based on past patent waiver requests, it is typical that the work to be done under a funding agreement by a large business is built upon and benefits from a past investment by the large business (*e.g.*, use of equipment and facilities and background intellectual property). It is also typical that a large business has the intent and capability of making future investments in promising technologies resulting from work under the funding agreement. In any event, patent waivers are subject to march-in rights that would require licensing the technologies to others if the large business fails to make reasonable efforts to utilize the technologies.

- (h) The extent to which the field of technology to be funded under the contract has been developed at the contractor's private expense.

The extent to which a large business has developed a particular technology at private expense will vary. It is typical, however, for a large business to rely on its past investments to perform the work under an award, and additionally, to further fund the field of technology at its private expense..

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

A particular large business may receive additional federal funding related to technology developed under a FE funding agreement. However, it would be unusual for the Government to conduct any commercialization efforts on a technology developed by a large business under a FE funding agreement without the entity that developed the technology. Furthermore, as recognized by the Bayh-Dole act, any effort to

commercialize a technology is most effective when the commercialization is done by the entity that developed the technology.

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

The purpose of the FE funding agreements is to help the United States meet its continually growing need for secure, reasonably priced and environmentally sound fossil energy supplies. The adoption of fossil energy technologies would indirectly benefit the public health, safety and welfare through the use of more environmentally friendly and domestic sources of energy. Granting a waiver should expedite the adoption of fossil energy 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 is a globally competitive market. In order to be commercially viable, fossil energy must compete with other sources of energy, including renewable energy that has substantially less or no harmful emissions. Within fossil energy, the different types of technologies (e.g., clean coal, oil, natural gas, carbon sequestration, engine efficiency, etc.) compete among themselves. Moreover, even within a particular type of technology, there are typically several different approaches and systems competing among themselves.

Typically, a patent waiver encourages a large business 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 large business to bring another technology solution to the market and not impacting the other solutions already in the market, a patent waiver supports competition in energy.

- (l) In the case of a domestic nonprofit 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.

This consideration is not applicable to a domestic large business.

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

This consideration is not applicable to a domestic large business.

- (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. This class patent waiver will be subject to the standard U.S. competitiveness provision.

Historically DOE has agreed to the proposition that domestic large businesses qualify for advance patent waivers under FE funding agreements because the objectives and considerations set forth in the DOE patent waiver regulations are usually met by domestic large business. For example, DOE has granted advance patent waivers for at least 47 domestic large businesses under FE funding agreements in FY2012, FY 2013 and FY 2014. It did not reject any request for a patent waiver during that time. DOE also has used class patent waivers for DOE's Office of Energy Efficiency and Renewable Energy (EERE) FOAs during the American Recovery Act and for all Advanced Research Projects Agency – Energy (ARPA-E) awards under several FOAs. Moreover, DOE granted similar class patent waivers for EERE FOAs released in FY2013, FY2014 and FY2015. DOE's past practice is consistent with the above analysis that domestic large businesses working under a cost-shared funding agreement made through a FOA during fiscal year 2017 through 2021 would likely qualify for an advance patent waiver.

This class patent waiver shall be subject to the terms and conditions that follow this statement of considerations. The terms and conditions include the usual Government license, march-in rights, and preference for U.S. industry provisions set out in 35 U.S.C. 202-204. The class patent waiver also includes the following U.S. Competitiveness clause:

The Contractor agrees that any products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States unless the Contractor can show to the satisfaction of the DOE that it is not commercially feasible to do so. In the event the DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., recoupment of the Government's investment, etc. The Contractor agrees that it will not license, assign or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements. Should the Contractor or other such entity receiving rights in the invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in the waived invention is suspended until approved in writing by the DOE.

The terms and conditions of this class patent waiver are the standard terms and conditions used in DOE advance patent waivers except that the contractor does not retain any rights to an invention in the event that the above U.S. Competitiveness clause or the utilization reporting requirement is breached.


In the unlikely event that this class patent waiver will not best serve the interests of the United States and the general public for work in a particular FE FOA, as described above and in the DOE patent waiver regulations, the FE FOA should include a statement that the FE class patent

waiver does not apply. A domestic large business working under a FE FOA excluded from this class patent waiver may later petition for an advanced or identified patent waiver.

Unless otherwise specified in the FE FOA, this class patent waiver is available to any domestic large business that (1) is a recipient, or subrecipient at any tier, to a funding agreement issued under a FE-22 Office of Advanced Fossil Technology Systems or FE-32 Office of Oil and Gas Resources FOA released during fiscal year 2017 through, and including, 2021 and (2) is providing at least the statutory minimum cost share for the work assigned to it under the funding agreement (*i.e.*, at least 20% for research and development activities and at least 50% for demonstration activities). A large business, whether recipient or sub-recipient, that does not accept the terms of this waiver, or is otherwise ineligible (e.g. specifically excluded in the FE FOA or owned, controlled, or influenced by a foreign government, agency, firm, corporation or person), may petition for an advanced or identified patent waiver.

Unless otherwise specified in the FE FOA or instructed by DOE patent counsel, this class patent waiver shall be incorporated into each funding agreement issued under a FE-22 Office of Advanced Fossil Technology Systems or FE-32 Office of Oil and Gas Resources FOA released during fiscal year 2017 through, and including, 2021 to a domestic large business that is providing at least the statutory minimum cost share for the work assigned to it under the funding agreement. Unless otherwise specified in the FE FOA or instructed by DOE patent counsel, this class patent waiver shall also apply to any domestic large business who is a sub-recipient (at any tier), including a subcontractor to a DOE Laboratory, of a funding agreement issued under a FE-22 Office of Advanced Fossil Technology Systems or FE-32 Office of Oil and Gas Resources FOA released during fiscal year 2017 through, and including, 2021 if the sub-recipient accepts the terms and conditions of the class patent waiver and is providing at least the statutory minimum cost share for the work assigned to it under the funding agreement.

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 patent waiver as set forth above will best serve the interest of the United States and the general public. It is recommended that the waiver be granted.



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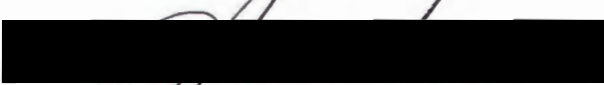
Based upon the foregoing Statement of Considerations, it is determined that the interests of the United States and the general public will best be served by a waiver of the United States and foreign patent rights as set forth herein, and, therefore, the waiver is granted. This waiver shall not affect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

CONCURRENCE:

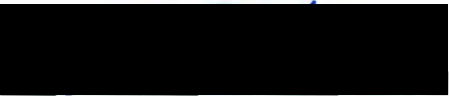
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