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WHITE PAPER

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Underutilized Sources of Public Capital for the Clean Energy Sector

Even in uncomplicated times, accessing capital and other forms of financial support can be challenging. We summarize here a cross-section of federal and, on an exemplary basis, state financial support mechanisms currently available to the clean energy sector, beyond the historic, now waning Production Tax Credit and Investment Tax Credit. These programs—premised on the contribution to our innovation economy, domestic manufacturing and national security of renewables, energy efficiency solutions and storage systems—are available to developers, entrepreneurs, and investors. They offer a diverse quiver of arrows ranging from direct loans and grants, through loan guarantees and tax benefits, to opportunities for R&D collaboration with this nation's National Laboratories. We specifically highlight underutilized programs, but also include programs that, however well known in some circles, may now engage a broader coalition. Collectively, these financial support systems, some competitively awarded, are expected to allocate tens of billions of dollars across the spectrum of clean energy ventures and projects. They also may carry collateral benefits, reputational and otherwise.

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The Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") focused on providing quick and direct relief to businesses and individuals. It did not include provisions related to the federal wind production tax credit ("PTC") or the federal solar investment tax credit ("ITC"), tax credits that the energy sector employs to advance lower-cost capital. Nonetheless, various federal and state sources of capital and public support, including in the forms of grants and loan guarantees, remain available to developers, investors, and entrepreneurs in connection with renewables, energy efficiency solutions, and energy storage platforms.

We focus here on a cross-section of these financial mechanisms, premised on the innovation, domestic manufacturing, and national security value of renewables, energy efficiency solutions, and storage systems. To the extent that the clean energy sector experiences COVID-19-related disruptions in access to capital, possible solutions may include currently available federal and state support mechanisms, such as the underutilized federal New Markets Tax Credit ("NMTC") program and the federal Rural Energy for America Program ("REAP") renewables-based loans, loan guarantees, and grants. In addition, we highlight comparable mechanisms, including innovation-based grants offered by the U.S. Department of Energy ("DOE"), and states, particularly the New York State Energy Research & Development Agency ("NYSERDA") and the Massachusetts Clean Energy Center ("MassCEC"). Finally, we summarize the current status of the PTC and ITC.

RENEWABLES AND EFFICIENCY GRANT, LOAN GUARANTEE, AND TAX CREDIT PROGRAMS

The NMTC program is designed to incentivize community development, job creation, and economic growth by attracting private investment to underserved communities. Approximately 40% of the U.S. census tracts qualify for NMTC investment—broadly, that encompasses census tracts where the individual poverty rate is at least 20% and the median family income does not exceed 80% of the area median. The NMTC program allows qualifying individual and corporate taxpayers to receive federal income tax credits in exchange for equity investments in vehicles certified as Community Development Entities ("CDEs") by the U.S. Treasury Department under its Community Development Financial Institutions Fund (the "CDI Fund"). CDEs that receive tax credit allocation authority under the program include U.S. corporations or partnerships that provide loans, investments, or financial counseling in low-income urban and rural communities. A CDE investor will receive a tax credit equal to 39% of its investment over a seven-year period, separate and apart from its returns on that investment. Accordingly, an NMTC investment can be very attractive to a CDE investor. CDEs then use that investment capital to provide flexible, affordable financing for environmentally sustainable projects within those underserved communities. From 2003 through late 2019, this program has allocated $52B in tax credits, including for wind projects, across all 50 states, the District of Columbia, and Puerto Rico. The NMTC is set to expire on December 31, 2020, but has previously been extended and is being considered for extension once again. As such, new allocations under the NMTC program will end in 2020 unless Congress acts. Various states also have NMTC programs.

Under REAP, the U.S. Department of Agriculture ("DOA") provides agricultural producers and rural small businesses with loan guarantees for renewable energy systems, including small and large solar and wind generation projects, as well as hydrogen, biomass, and geothermal projects. Entities that earn at least 50% of their gross income from agricultural operations qualify as "agricultural producers" under REAP and small businesses in municipal areas (i.e., cities or towns) with fewer than 50,000 inhabitants generally qualify as "rural small businesses" thereunder. REAP provides loan guarantees for up to 75% of total eligible project costs.[1] Applicants must provide at least 25% of the project costs and demonstrate sufficient revenue to repay the loan and cover project operation and maintenance expenses. In addition to loan guarantees, REAP provides grant funding to agricultural producers and rural small businesses to install renewable energy systems or make energy efficiency improvements. Renewable energy system grants range from $2,500 to $500,000, can be used to fund up to 25% of total eligible project costs, and can be combined with loan guarantees up to specified limits. Through REAP, the DOA has awarded approximately $1.3 billion in loan guarantees and $42 million in grants for nearly 350 wind energy systems to date.

DOE's loan guarantee program, administered through its Loan Programs Office ("LPO"), provides financing solutions to large-scale energy infrastructure projects as part of a mandate in the Energy Policy Act of 2005 (with regulations amended in

late 2016).[2] Up to $4.5 billion is currently available in loan guarantees for innovative (so-called "New or Significantly Improved Technology") and energy efficiency projects, with nearly $18 billion available as direct loans for advanced vehicles manufacturing. Obtaining loans and loan guarantees can be a significant undertaking. Further, the program is not without substantial cost to the applicant, including DOE's administrative costs, costs attributable to the applicant's credit risk and a cost allocation based on project risk. Nonetheless, an initial consultation with the LPO is on a "no fee, no commitment" basis, and therefore worth consideration. Further, our experience is that such programs can offer substantial direct and indirect value, including in the latter category reputational value. Through 2019, the LPO has issued more than $35 billion in loans and loan guarantees for more than 30 projects, with an overall positive performance record.

COMPETITIVE CLEAN ENERGY INNOVATION AND DEPLOYMENT OPPORTUNITIES

COVID-19 has prompted a renewed focus on research and development ("R&D"), domestic innovation, and energy security. To that end, we highlight certain R&D and commercialization grants that may be available for energy sector participants beyond the current Small Business Administration ("SBA") mechanisms in the CARES Act. These opportunities cover all stages of business activities, from R&D to project deployment, with a focus on innovative clean energy, and offer a broad range of direct and indirect benefits, including non-dilutive capital, independent technical validation, and the opportunity for access to extraordinary equipment, systems, and personnel. Awards are generally competitive (i.e., merit based), in some cases (including as a result of the Energy Policy Act of 2005) require impartial assessment of scientific or technical merit, and often reward public-private partnerships ("P3s"). DOE has deployed approximately $2B annually in the form of grants and cooperative agreements to public and private entities, including nonprofits.

- DOE's Office of Energy Efficiency and Renewable Energy ("EERE") offers grants and cooperative agreements to encourage R&D and deployment of a broad range of renewable energy, energy efficiency, and related technologies. Funding opportunities vary, but typically are focused on technology or systems development, not on startup funding, which is the focus of other DOE programs (including those noted below). Unsolicited proposals may be submitted, but must conform to applicable regulatory and guidance standards. Businesses in nearly every state have received EERE support. Energy efficiency includes innovation in plastics recycling and reductions (for example, highly recyclable or biodegradable plastics). While there is a wide range in terms of award amount, awards in the $1 million to $3 million range are typical at the lower end and often run for 12 to 36 months. Here is a link to open funding opportunities or solicitations, some of which reflect COVID-19 extensions.

- DOE also has multiple, sector-based divisions that generate, issue, and award competitively sourced grants. For example, DOE's Wind Energy Technologies Office ("WETO") focuses on technological developments designed to improve the reliability and affordability of wind energy and address barriers to deployment via competitively sourced grants focused on more efficient technologies that lower the cost of wind energy. DOE's Solar Energy Technology Office ("SETO") does the same for the solar sector, focusing on photovoltaics, concentrating solar power and systems integration. Demonstration projects have received such grants and SETO recently featured a grant for integrated thermal energy storage and Brayton cycle equipment demonstrations of $39M for one to two projects. The EERE link above includes these opportunities. Moreover, each division hosts webinars that are useful for first-time applicants.

- DOE's Advanced Research Projects Agency-Energy ("ARPA-E") provides grants for applied R&D related to advanced or transformative technologies addressing energy creation, distribution, and use. It is ideally suited to disruptive technologies, some of which may be too early-stage for private-sector investment alone. ARPA-E advances disruptive technologies with the potential to radically improve national and economic security, as well as our collective environmental well-being. ARPA-E remains

a well-known resource in the clean energy venture community, and the breadth of its awards is noteworthy, with recent funding announcements focused on ambient plastics reductions, not to mention fusion.

- DOE's Office of Technology Transitions Technology Commercialization Fund ("TCF") matches funds from private partners and provides equipment, services, and personnel, to promote promising energy technologies developed at DOE's National Laboratories including via cooperative research and development agreements ("CRADAs") governing joint development work.

Various states have undertaken clean energy initiatives, some modelled on or synergistic with federal programs. We highlight two such programs here, again on an exemplary basis.

- In order to support advancement of New York's carbon neutral electricity sector, innovation economy, and job growth, NYSERDA funds all aspects of the business cycle for a broad range of technologies, including Smart Grid technologies for New York-based businesses. Multi-year funding totals in the billions, with substantial price support in the form of offtake agreements to the wind sector. For example, NYSERDA's Storage Incentives offer a variety of incentives and support for storage innovation, including seed capital and grants. Here is a link to the NYSERDA energy storage program. The New York Green Bank, a specialized financial entity and division of NYSERDA, employs its own parallel strategies to advance private finance of clean energy technologies, systems, and projects, typically by leading rounds in comparatively small investments.

- MassCEC, the Massachusetts counterpart to NYSERDA, has an express mission of supporting innovators, entrepreneurs, and businesses through the so-called "valley of death" that new businesses in emergent sectors can experience. Among its many programs, the MassCEC adds its support or amplifies federal awards issued by the DOE or ARPA-E, among others, with up to $500,000 of additional capital. MassCEC provides seed investment to advance and commercialize clean energy technologies and businesses in the form of convertible notes up to $250,000. Here is a link to each MassCEC program.

WANING CLEAN ENERGY TAX CREDITS

Two tax credits, the PTC and the ITC, have played a historically important role in U.S. renewables development. The PTC allows owners and developers of both onshore and offshore wind energy facilities to claim a federal income tax credit on every kilowatt-hour of electricity generated during the ten year period after a facility is placed in service. For facilities that break ground from 2017 through 2020, the amount of the allowable credit is based on when the project commences construction. The PTC was scheduled to phase-down over time and expire in 2020 and therefore would have been unavailable to projects beginning construction after 2019, but was extended and increased during a single additional year, allowing specified renewables projects that commence construction in 2020 to be eligible for a 60% PTC.[3] Because the revised phase-down schedule actually increases (in an out-of-step fashion) the credit for projects beginning construction in 2020, projects may undertake, consistent with IRS guidance, to analyze and shift the "beginning of construction" threshold so as to fall within the 2020 year class and accordingly claim a 60% PTC, rather than a 40% PTC for projects commencing construction in 2019. Tax credit insurance has played, and will continue to play, an important role in these transactions. Currently, there is no PTC for projects for which construction begins after 2020.

The ITC is a federal income tax credit for capital investments in renewable energy projects. Unlike the PTC, the ITC is a one-time credit based on the investment value, earned when the project is placed into service. The ITC is particularly significant for capital-intensive projects, such as solar or offshore wind, but is most commonly used today for solar projects. Nonetheless, the ITC is phasing down. With respect to the ITC, owners and developers of large-scale wind energy facilities that commence construction prior to 2021 can elect to claim the ITC in lieu of the PTC, with some noteworthy nuances. For large-scale wind projects that elect to use the ITC instead of the PTC, the credit is reduced from the traditional 30% to 18% if construction begins in 2020; for solar projects, the credit is reduced from 30% to 26% if construction begins in 2020 and to 22% if construction begins in 2021. Currently, there is no ITC available for projects that commence construction after 2020 (for most wind projects) and 2021 (for most solar projects).

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ENDNOTES

1 REAP regulations are available at 7 C.F.R. § 4280.101, Subpart B (final rules promulgated with useful commentary at 79 Fed.Reg. 78220 (December 29, 2014)).

2 Current regulations are available at 10 C.F.R. Part 609 (final rule promulgated with useful commentary at 81 Fed.Reg. 90699 (December 15, 2016)).

3 Thus, current PTC eligibility is as follows: 100% PTC if construction began during 2016 or earlier; 80% PTC if construction began during 2017; 60% PTC if construction began during 2018; 40% PTC if construction began during 2019; and 60% PTC if construction begins during 2020.