



NATIONAL STONE, SAND
& GRAVEL ASSOCIATION

August 15, 2022

Acting Director Kelly Cummins
Office of Clean Energy Demonstrations
U.S. Department of Energy
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Re: Request for Information on Clean Energy Demonstrations on Current and Former Mine Land Program

On behalf of the National Stone, Sand and Gravel Association (NSSGA), I am pleased to submit the following comments in response to the Office of Clean Energy Demonstration's (OCED) request for information (RFI) on the use of current and former mine lands to further the nation's clean energy goals.

NSSGA is a trade association that represents crushed stone, sand, gravel (aggregate) and industrial sand producers, consisting of approximately 7,000 operations nationwide, and the manufacturing and service providers who serve the industry. Our producer members operate both surface and subsurface mining operations across all fifty states.

Aggregate producers are directly impacted by the Bipartisan Infrastructure Law (BIL) and are essential to meet our country's clean energy goals. Aggregates are a critical component of concrete, which is required in many clean energy projects like wind turbines (hundreds of tons aggregates are required for each base), dams to establish hydropower, charging stations, expanding the electrical grid and more. Solar projects also rely on industrial sand, which is essential when creating the glass for solar panels. In addition to playing a direct role in building clean energy projects, the aggregates industry can also provide land that is strategically located for clean energy projects such as those OCED is interested in.

However, based on the definition of "mine land" provided in the BIL, which authorized the Clean Energy Demonstrations on Current and Former Mine Land Program, privately held current and former aggregate mine land (which describes most aggregates operations in the U.S.) is not eligible to compete for a demonstration project. We believe this is a significant and unfortunate oversight and encourage OCED to include the whole aggregates industry for consideration not only in the program but in future solicitations. Furthermore, should OCED



have discretionary funds available outside of BIL funding, we strongly urge you to consider providing money to this program and funding an energy demonstration project at a current or former aggregate quarry.

Current and former aggregate mine lands present many opportunities for clean energy development. These comments will address some of the questions outlined in the RFI and highlight reasons why the aggregates industry needs to be considered for funding appointed for clean energy projects.

One of the greatest advantages of the aggregates industry for clean energy development is its widespread and diverse geographic footprint. There are over 9,500 active aggregate operations throughout the country (this number includes non-NSSGA members); additionally, there are thousands of reclaimed and inactive sites, all of which are within proximity to cities, towns, and industrial sites because our materials are used to build infrastructure. Furthermore, quarries are close to population centers because when trucked, which is the most common method of transportation, it is not economic to move aggregates more than thirty miles from where it is mined to where it is used due to its weight and generally low cost per ton. In short, thousands of current and former aggregate mine lands are located throughout the country and close to where the greatest energy needs exist, making the industry geographically prime for clean energy projects.

1A.1. What are the major barriers (regulatory, technical, environmental, or socioeconomic) to clean energy development on current and former mine land? What strategies have overcome these barriers in successful clean energy development on mine land?

The greatest barriers to clean energy development on mine land are funding and access to the electrical grid for rural locations. Clean energy projects are capital intensive. Whether it is installing solar panels or adding infrastructure for a site to connect to the electrical grid, the steep up-front costs are unachievable for many operators. Having access to federal funds will make it possible for operators to add clean energy projects on-site and will help it become more commonplace throughout the industry. There are currently some ‘early adopters’ in the aggregates industry that have solar energy options either on-site or through a local utility, but these are the vast minority. Some companies have also set goals to make a percentage of their operations run on renewable energy by target dates, but these percentages are less than 5% of total energy expenditures. Access to funding and demonstration projects will help companies raise these percentages and give operators of all size an opportunity to bring clean energy to their operations. As more funding is available, we will also start to shift the industry from the ‘early adoption’ phase to the ‘early majority’ phase where more companies will include renewable energy as part of their operations.

1A.3. How should reclamation activities be adapted when reclaiming a site for a clean energy development post-mining land use?

Reclamation activities are typically planned years, sometimes decades, into the future for aggregate mines and many take a concurrent reclamation approach, where reclamation



activities begin while mining is still ongoing. Discussions about utilizing sites for clean energy projects should occur early during the life of a mine and ideally prior to state approval of a reclamation plan. Then the future clean energy project can be integrated into the mining plan from the start. The DOE should foster relationships with the aggregates industry, increase stakeholder awareness of clean energy funding and opportunities to capitalize on the potential of reclamation for energy projects.

1B.1. What are the most significant environmental remediation challenges to preparing a mine site for clean energy development? How do these barriers differ based on region, type of mine, and whether the mine is active or not?

The reclamation of aggregate mines differs from other types of mining where significant environmental remediation may have to take place. Typical minimum standards for aggregate reclamation include sloping the pit at 3:1 for safety (should someone fall in they are able to get out) and seeding to revegetate the area. Because the aggregate manufacturing process includes just crushing, screening and washing there is no additional remediation required like sites with a history of heavy chemical use may require, meaning clean energy projects can get underway quickly and without additional remediation expenses.

1B.3. How can DOE best ensure that demonstration projects contribute to the greatest net impact in avoiding or reducing greenhouse gas emissions, as required in BIL?

Construction sand and gravel is the largest commodity in terms of active mines in the U.S. at approximately 44% according to [data from the Mine Safety and Health Administration](#) (MSHA) and is present in all 50 states. Furthermore, stone accounts for approximately 9% (found in 48 states) and sand at 3% (found in 42 states). By providing funding and spurring clean energy projects on aggregate mine lands, the DOE will be reaching almost one-third of the current mine lands in the U.S. Leaving out the largest commodity group in the mining industry is counterproductive to the BIL's goal of avoiding or reducing greenhouse gas emissions. Furthermore, thanks to the BIL, aggregate materials are in high and increasing demand as our country invests in infrastructure. Including the aggregates industry in clean energy funding opportunities will have a great net impact on reducing GHG emissions because the industry is vast and will continue its pattern of growth in the future.

3.6. What community benefit, labor, and workforce concerns or priorities are most relevant for the Mine Land program? How have/can these concerns or priorities been/be addressed?

As non-renewable energy sources like coal decline, there is a great need to support displaced workers. The aggregates industry is an easy shift for displaced miners because their skills are directly and immediately applicable. They are also qualified for higher level positions rather than having to enter a new field where they'll be entry level, thus maintaining a greater income for individuals who otherwise may face significant pay reductions.

4A.1. What site characteristics are necessary for successful development of the clean energy technologies on mine land? Please indicate which technology or technologies your response is addressing.



A key characteristic for aggregate sites is whether or not the facility is in operation, how frequently it is operating, and for how long. Clean energy projects would provide best value for active mine operations (i.e., rather than closed locations, reclaimed sites, or those that operate on an intermittent basis) because the operations can use the energy for current production and plan for future use for nearby communities. There are a number of technologies that could be valuable for active aggregate mine operations.

First, solar is a well-developed technology that has already been deployed on some aggregate mine lands, particularly in locations with more frequent sunlight like the west and southwest. Solar energy is valuable because it can help supplement energy demand during the day, when there is greatest community demand, and is also available during regular business hours when production is occurring.

Second, quarries are good candidates for energy storage projects and microgrid utilization. Because most aggregates operations run traditional business hours, they would be able to charge batteries overnight, during low energy demand hours, and run during daily operations. There is also potential for utilizing microgrids, because one of the greatest factors in a site's GHG emission is reliance on diesel fuel in rural areas where facilities are not connected to the electrical grid. Increasing availability of electric energy, which could be through the use of microgrids, is a key lever for the aggregates industry that can reduce GHG emissions. Additionally, thanks to quarries' proximity to population centers, establishing microgrids near quarries will also provide clean energy to nearby communities, which can continue once the mine reaches the end of its life.

Third, some aggregate facilities would be good candidates for hydrogen energy demonstration projects, particularly ones that are co-located with an asphalt plant because hydrogen power could replace natural gas that is currently used. Aggregate mines are frequently co-located with asphalt, concrete and sometimes cement facilities, which gives these sites great potential for clean energy projects as there are greater energy requirements at such locations.

Thank you for the opportunity to comment and for your consideration. The aggregates industry is a key player in the mining industry, for our communities, and in the clean energy solution. There are significant opportunities to partner with the Department of Energy to pursue clean energy projects and we look forward to building our partnership with the agency. Please do not hesitate to reach out to me at (703) 678-9483 or lpritchard@nssga.org with any questions or clarifications.

Respectfully,



Libby Pritchard
Safety Policy Director
NSSGA

