



Comments Related to the

Pennsylvania Energy Development Authority's Energy Development Plan

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The Pennsylvania Energy Development Authority's Energy Development Plan ("Plan") is timely, comprehensive and provides a pathway to encourage new and cleaner ways to supply the Commonwealth with electrical power. And its Mission "to expand the market for Pennsylvania's clean, diverse, indigenous energy resources" as well as encourage a "reduction of greenhouse gas emissions" is worthy of support from the public and decision makers.

PureGen Development LLC, a Pennsylvania based clean energy company, offers the following comments in the hopes of expanding the Plan's list of PEDA eligible projects to include other technologies that are not currently listed but also meet the Authority's goals and funding requirements. More specifically, of the approximately 20 technologies and measures referred to as eligible for funding, carbon capture utilization and sequestration (CCUS or commonly called CCS) with at least as many environmental, technological and economic benefits as the others is not listed among them.

Why CCUS in Pennsylvania should be supported

Ten years ago, Pennsylvania led the nation in efforts to encourage CCUS. The Legislature passed Act 129 in 2008 to examine the technical, geologic, financial and legal aspects of establishing carbon capture and sequestration in the Commonwealth. The [studies found](#) Pennsylvania uniquely positioned to take the lead in CCUS development, with hundreds of years' worth of geologically suitable CO₂ storage capacity statewide. And with the shift to gas plants, which emit half the CO₂ of coal plants, less and less storage space would be required. CCUS costs in Pennsylvania were found to be lower than other projects nationally due to the high volumes of CO₂ that could be sequestered through the development of a storage system to handle multiple emission sources. And the state has the regulatory tools to ensure it would be safe.

Upon completion of the CCUS studies in 2009, a [comprehensive bill](#) was introduced but failed to pass requiring electric utilities to purchase power from "advanced coal combustion with limited carbon emissions" that "captures...and permanently sequesters (the CO₂)."

Why CCUS should be included in the PEDA Plan

Since the Commonwealth's initial efforts to support CCUS over a decade ago, [technology](#) has improved and become less costly, federal and state governments are providing [loan guarantees and tax subsidies](#) for using or storing CO₂ and it is increasingly becoming part of states' clean energy plans.

Pennsylvania and national stakeholders support CCUS as a necessary component of the array of measures needed to reduce greenhouse gas emissions and create jobs.

These supporters include:

- *Create a diverse portfolio of clean, utility-scale electricity generation.*
Pennsylvania Climate Action Plan (PA Department of Environmental Protection)
- *Create a revised (AEPS) Tier II requirement that can be met by any zero-carbon sources...and fossil-fuel-fired plants with 100% CCS.*
Deep Decarbonization (Pennsylvania Environmental Council)
- *We have seen how advocacy has successfully helped push technologies like wind and photovoltaics into a stage of commercial competitiveness and use at a meaningful scale. We must do the same for other zero carbon options like CCS.*
Clean Air Task Force
- *Achieve synergies with CCS for electricity generation and industry.*
World Resources Institute
- *Carbon capture, utilization and storage, or CCUS, is an important emissions reduction technology that can be applied across the energy system.*
International Energy Agency
- *In addition to the climate benefits, broadening deployment of CCS technologies in the U.S. would create additional jobs domestically and export opportunities abroad.*
Natural Resources Defense Council
- *The use of carbon captured from power plants and industrial facilities to produce commercial products... is emerging as a vital strategy for decarbonizing the economy. Products as diverse as transportation fuels, building materials, and algae-based animal feeds are proving to be both technically feasible and environmentally valuable, while their developers seek to overcome barriers to commercialization.*
US Energy Association

Potential areas of PEDA support for CCUS

- Research – Sequestration characterization modeling/techniques, CO₂ capture technologies (retrofit and new), CO₂ utilization technologies and processes, and market studies.
- Projects (new and retrofits) – Site characterization, Pre-FEED, electrical interconnection and other specialized facility-specific studies.
- Opportunities – Support for secondary economic benefits (e.g., carbon utilization start-ups and co-location of existing commercial/industrial CO₂ uses with CCUS projects), specialized workforce training and other efforts to encourage CCUS development.



Pennsylvania is in a unique position to become an international center for CCUS technology and CO₂ utilization. Supporting CCUS by inclusion in the PEDAs Plan would encourage the expansion of the state's clean energy options, encourage investment and innovation in new technology in an emerging [\\$14 billion market](#), and create thousands of family-sustaining jobs, and reestablish Pennsylvania as a national CCUS leader.

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