New petrochemical complex could create a “cancer alley” on Ohio River

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Political and corporate leaders in West Virginia, Pennsylvania and Ohio, as well as the US Department of Energy, are rabidly pursuing a gigantic new storage, refining and production complex for petrochemicals and plastics in the Ohio River valley. It would be fueled by the fracking boom in the Marcellus and Utica Shales that has produced an over-abundance of cheap natural gas and the more-valuable liquid byproducts like ethane that are used to make plastic.

In western Pennsylvania, Shell Polymers is constructing what could be the first of several plants to convert ethane into plastic pellets for making many different kinds of plastic products. Plastic pollution is recognized as a huge threat to ocean life globally, and only 9 percent of plastics made to date have been recycled.

The centerpiece of the project is a multi-billion-dollar underground storage complex called the Appalachian Storage Hub, designed by the Appalachia Development Group (ADG), which is owned by the Mid-Atlantic Technology, Research and Innovation Center (MATRIC) and the West Virginia University Innovation Corporation.

In January ADG received a controversial invitation from the Department of Energy to apply for a $1.9 billion loan guarantee, from a fund normally earmarked for renewable or “clean” energy projects, created by the Energy Policy Act of 2005. Steven Hedrick, the chief executive officer of ADG, argues that through the use of regionally produced feedstocks from fracked gas, the project would “significantly avoid or reduce anthropogenic emissions of greenhouse gases through conversion of these raw materials closer to their production locations.”

A coalition of almost 150 grassroots groups, including FracTracker Alliance and the FreshWater Accountability Project, wrote to House Appropriations Committee Chair Nita Lowey (D-N.Y.), questioning the legality of the loan guarantee proposal, noting that the funding is intended for clean energy innovations. ADG replied that the storage hub includes innovations in the form of advanced leak detection, and thus is a “clean” energy project. Large scale leakage of methane from the complex would be catastrophic for the climate. Methane has a greenhouse effect approximately 80 times that of carbon dioxide on a 10-year timeframe.

Besides the natural gas liquids storage facilities, the storage hub could involve a market trading index center. The trading business appears to be an attempt to create an industry hub rivaling Mont Belvieu in Texas and similar to the oil industry’s hub in Cushing, Oklahoma, which serves as a pricing index for natural gas liquids and oil market traders, respectively. The Appalachian trading post would be focused on the natural gas liquids trade.

In a three-state geological study in 2017 by West Virginia University’s Appalachian Oil and Natural Gas Research Consortium, ethane was described as “the great, untapped resource from the Marcellus and Utica” shale region because of a lack of local storage. According to its acknowledgments section, that report was funded by companies such as Chevron, Dominion Energy, EQT Resources, Noble Energy, ExxonMobil subsidiary XTO Energy, and the West Virginia Oil & Natural Gas Association.

West Virginia Governor Jim Justice (Republican), calls the storage hub his top economic priority. Senator Joe Manchin (D-WV), pushed the project last year to US Energy Secretary Rick Perry.

If built, the total petrochemical complex would include five or more cracker (refining) plants, as well as regulating stations. Various natural gas liquids would be stored in underground storage facilities (enormous natural and man-made deep limestone and salt caverns, with total areas of hundreds of square miles), and transported via an epicenter of up to 15 pipelines.

The petrochemical complex would roughly follow the course of the Upper and Lower Ohio River Valleys. Currently, it is uncertain whether most of the infrastructure would be located on the Ohio side or the West Virginia side of the river, although the West Virginia state government has been a principal proponent.

A "major concern we have about the whole complex is that it will encourage a second or third wave of gas fracking in our region, from the Marcellus, the Utica, and also the Rogersville shale, which is a much deeper layer of shale gas and oil and has been recently tested and a few commercial wells have been built into it," stated Robin Blakeman, project coordinator with the non-profit Ohio Valley Environmental Coalition.

DeSmog Blog notes that the proposed complex could someday rival the size, and environmental and health impacts, of the petrochemical refining complex along the Gulf Coast in south Texas and Louisiana known as "Cancer Alley". Exposure to a multitude of air-and-water-borne chemicals often associated with natural gas liquids and their processing, such as benzene and toluene (components of "natural gasoline" or pentane-plus compounds), have been shown to increase cancer risks by orders of magnitude.

The project plans had received a major boost on November 9, 2017 during a trade mission to China attended by President Trump and U.S. Secretary of Commerce Wilbur Ross. At that trade mission, also attended by Chinese President Xi Jinping, the China Energy Investment Corp. (a Chinese state-owned corporation) signed a Memorandum of Understanding (MOU) with the state of West Virginia to invest $83.7 billion into the planned storage hub and petrochemical complex over 20 years. In comparison, West Virginia's entire GDP in 2016 was $72.9 billion.

The joint ADG venture registered its website on November 10, one day after the signing of the MOU. Since then, billions in unrelated trade tariffs imposed on China as part of Trump's attempted "trade war" have apparently not affected the deal. However, in West Virginia an ongoing state-and-federal-level official corruption investigation involving individuals who were part of the MOU signing has slowed progress.

The first casualty was Woody Thrasher, West Virginia's former Secretary of Commerce, who resigned in June 2018 under corruption accusations. The Thrasher Group provides architectural, engineering, and construction services for oil and gas field and pipeline projects, and was likely to receive substantial business from the project. Thrasher never divested from the company when he became Secretary of Commerce and maintained a 70 percent ownership stake.

On May 18, 2017, a report titled "The Potential Economic Benefits of an Appalachian Petrochemical Industry," was released by the American Chemistry Council (members include Shell, ExxonMobil, Chevron, Saudi Basic Industries Corporation, Dow Chemical, and Monsanto). This closely followed the May 9 introduction of the Appalachian Ethane Storage Hub Study Act of 2017, a bill supported by every member of West Virginia's congressional delegation. The American Chemistry Council donated $10,000 to WV Sen. Manchin for his 2018 re-election campaign, of which $5,000 was given on May 10, the day after Manchin co-sponsored the Appalachian Ethane Storage Hub Study Act, according to U.S. Federal Elections Commission filings reviewed by DeSmog.

Other bills introduced in 2017 include the Appalachian Energy and Manufacturing Infrastructure Revitalization Act and the Capitalizing on American Storage Potential Act. The Infrastructure Revitalization Act calls for "an expedited permitting process for critical energy infrastructure projects relating to the establishment of a regional energy hub in Appalachia, and for other purposes." Meanwhile, the Capitalizing on American Storage Potential Act would make sure the Department of Energy's loan guarantee program would also apply to projects such as the Appalachian Storage Hub.