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Dear Citizens to Keep Rives Rural:

In order to estimate the maximum amount of air pollution you can expect from an 1,800 megawatt (MW) gas-fired power plant, such as Novi Energy's proposed Cornerstone Energy Center, I've analyzed data from two other new gas-fired power plants in Pennsylvania.

The Panda Liberty and Panda Patriot power plants started operation in June 2016 and July 2016, respectively. I used the actual amount of emissions released in 2016 and 2017 (latest data available) according to the Pennsylvania Department of Environmental Protection's Air Emissions Report.¹ Using the Energy Information Administration's Form 923 data² on the amount of megawatthours generated in those years by these facilities, I calculated an emissions rate in pounds per megawatthour (lbs/MWh) and applied that to the maximum output from an 1,800 MW power plant.

If operating at 100% capacity, an 1,800 MW modern gas-fired power plant could be expected to release the following:

- 6,639,225 tons of Greenhouse Gases (GHG, in carbon dioxide equivalents, or CO₂e)³
- 767,073 lbs of Nitrogen Oxides (NO_x)
- 332,314 lbs of Ammonia
- 219,875 lbs of Particulate Matter (PM₁₀)
- 219,875 lbs of Fine Particulate Matter (PM_{2.5})
- 96,098 lbs of Carbon Monoxide (CO)
- 61,174 lbs of Sulfur Oxides (SO_x)
- 26,048 lbs of Volatile Organic Compounds (VOCs)
- 18,226 lbs of Hexane
- 7,119 lbs of Formaldehyde

To put these numbers in perspective...

¹ http://www.depgreenport.state.pa.us/powerbiproxy/powerbi/Public/DEP/AQ/PBI/Air_Emissions_Report

² <https://www.eia.gov/electricity/data/eia923/>

³ 6,625,629 tons of CO₂, plus 120.53 tons of methane (multiplied by a 20-year global warming potential of 86) plus 12.05 tons of nitrous oxide (N₂O) (multiplied by a 20-year global warming potential of 268). The latest science on global warming potentials is available from the International Panel on Climate Change's Fifth Assessment Report, 2013 (see Table 8.7 on p714 in [Chapter 8](#) of the [report](#)).

If the proposed Cornerstone Energy Center were built and operated at 100% capacity, it would be the county's second largest air polluter, almost tied for first place with the Gerdau Steel Mill. It would add another 1,747,803 pounds of annual pollution (not counting greenhouse gases) on top of the 3,308,146 pounds already reported to EPA's National Emissions Inventory.⁴ The plant would add another 53% to the total and would become responsible for nearly 35% of the county's increased level of industrial air pollution.

Greenhouse gases cause global climate disruption, increases in heat-related deaths, mosquito-born diseases, and much more.

Nitrogen Oxides (NOx) triggers asthma attacks, and increases lifetime risk of chronic respiratory disease and stroke. The proposed 1,800 MW Cornerstone Energy Center would release enough to NOx to be the #1 industrial source of NOx in Jackson County, and would be responsible for 58% of the county's industrial NOx emissions. It would release 2.56 times as much as the county's current largest emitter, the 649 MW gas-fired Jackson Generating Station. Compared to mobile sources, the Cornerstone Energy Center would release 78% as much NOx as all passenger cars in the county. Put another way, operating the power plant would be like adding 78% more passenger cars to the county's roads, in terms of this pollutant that triggers asthma attacks.

Ammonia is a respiratory irritant. The proposed Cornerstone Energy Center would be the county's #1 industrial source of ammonia air emissions, releasing 942 times as much as the county's current largest emitter (the steel mill). They'd be responsible for 99.8% of the county's industrial air emissions of ammonia. The power plant would release three times as much ammonia as all on-road mobile sources combined.

Particulate Matter (PM10 and PM2.5) aggravates lung disease, triggers asthma attacks, causes acute bronchitis, and can cause heart attacks in those with heart disease. The proposed Cornerstone Energy Center would be the county's #1 industrial source of particulate matter emissions, releasing 3-4 times as much as the county's current largest emitter (the steel mill). They'd be responsible for 60-70% of the county's industrial air emissions of particulate matter. The power plant would release almost as much PM10 (88%) as all on-road mobile sources combined, and would release 55% more PM2.5 than all on-road mobile sources combined.

Carbon Monoxide causes headaches and dizziness, and increases lifetime risk of heart disease. The proposed Cornerstone Energy Center would be the county's fourth largest industrial source of carbon monoxide emissions. They'd be responsible for 4-5% of the county's industrial air emissions of carbon monoxide.

Sulfur Oxides (SOx) trigger asthma attacks, increases lifetime risk of chronic respiratory and heart diseases and stroke. The proposed Cornerstone Energy Center would be the county's second largest industrial source of sulfur oxide emissions, after Lefere Forge & Machine Co.

⁴ See EPA National Emissions Inventory for 2014. This is the latest data, as it comes out every three year and 2017 data won't be released until 2020. <https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data>

They'd be responsible for 32% of the county's industrial air emissions of sulfur oxides. The power plant would release 2.6 times as much SO_x as all on-road mobile sources combined.

Volatile Organic Compounds (VOCs) can irritate the eyes, nose and throat, can cause difficulty breathing and nausea, and can damage the central nervous system as well as other organs. Some VOCs can cause cancer. The proposed Cornerstone Energy Center would be the county's seventh largest industrial source of VOCs. They'd be responsible for 7% of the county's industrial air emissions of VOCs.

Hexane affects the brain and can cause headaches, dizziness, confusion, and symptoms similar to intoxication. The proposed Cornerstone Energy Center would be the county's #1 industrial source of hexane emissions, releasing 27 times as much as the county's current largest emitter (MPLX Terminals LLC - Jackson Terminal). They'd be responsible for 89% of the county's industrial air emissions of hexane.

Formaldehyde is a respiratory irritant that can cause cancer. The proposed Cornerstone Energy Center would be the county's #1 industrial source of formaldehyde emissions, releasing three times as much as the county's current largest emitter (the Jackson Generating Station). They'd be responsible for 64% of the county's industrial air emissions of formaldehyde.

Sincerely,



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