

**Environmental Law and Policy Center
Clean Water Action
Ecology Center
Great Lakes Environmental Law Center
Michigan Energy Alternatives Project
Michigan Land Use Institute
Natural Resources Defense Council
Sierra Club Michigan Chapter**

December 22, 2009

Mary Ann Dolehanty, Acting Permit Section Supervisor
Michigan Department of Environmental Quality
Air Quality Division
P.O. Box 30260
Lansing, MI 48909-7760

SENT VIA EMAIL AND U.S. MAIL

Re: Supplemental Comments on Draft Permit to Install, Permit No. 317-07, Wolverine Power Supply Cooperative, Inc. – EGAA, Purchase of Sumpter Natural Gas Plant

Dear Ms. Dolehanty,

Please accept these supplemental comments submitted on behalf of the Environmental Law and Policy Center, Clean Water Action, Ecology Center, Great Lakes Environmental Law Center, Michigan Energy Alternatives Project, Michigan Land Use Institute, the Natural Resources Defense Council and Sierra Club Michigan Chapter regarding the Michigan Department of Environmental Quality's ("MDEQ") draft Permit to Install, Permit No. 317-07 ("Draft Permit"), for the 600 MW coal plant ("Proposed Coal Plant") proposed by the Wolverine Power Supply Cooperative, Inc. ("Wolverine"). We are writing to bring to MDEQ's attention Wolverine's recent agreement to acquire the 340 MW Sumpter plant from FirstEnergy Corp. This natural gas peaking plant can be converted to a combined cycle plant to meet Wolverine's future baseload energy needs, at a smaller economic and environmental cost to Wolverine's customers and Michigan residents than the proposed coal plant. We continue to believe that Wolverine can offset or meet a significant portion of future demand through more aggressive energy efficiency measures and increased investment in renewable resources (as set forth in our previous comments on Wolverine's Energy Generation Alternatives Analysis). However, the Sumpter plant acquisition reinforces that Wolverine has failed to meet its duty under MEPA, as it has failed to demonstrate the need for, or lack of cleaner alternatives to, 600 MW of new coal-fired generating capacity.

On December 17, 2009, FirstEnergy Corp. announced that it had reached an agreement with Wolverine for the purchase of FirstEnergy's Sumpter plant, located in Sumpter, Michigan.¹ This plant was built in 2002 and consists of four 85 MW simple cycle natural gas-fired turbines. While the plant currently operates as a peaking plant, it can be converted to a baseload combined cycle plant by adding heat recovery steam generators ("HRSG") and routing the turbine gas through them. Adding duct burners to the HRSGs would result in even more steam.² This "repowering" process is offered by numerous engineering firms.³ Emissions from a converted combined cycle turbine are the same as for simple cycle, accounting for increased hours of operation and emissions from the duct burner (if one is used).

Such a conversion could yield upwards of 500 MW of baseload natural gas combined cycle capacity for Wolverine. Moreover, it would provide this power at a lower environmental cost than building a completely new coal-fired power plant, both in terms of greenhouse gas pollution (due to natural gas generation's lower greenhouse gas profile) and criteria pollutants.⁴ This lower environmental cost would also come at a lower economic cost to Wolverine's ratepayers, as converting the simple cycle turbines is significantly less expensive than building an entirely new 600 MW coal plant.

Based on information available to us, purchasing and converting the Sumpter plant is likely to come in at less than a third of the cost of building the new 600 MW coal plant. Wolverine estimates the cost of the coal plant at \$1.2 billion. As explained in our previous comments, this figure is a severe underestimate given the rising costs of construction that have led other utilities to abandon coal plant plans in favor of natural gas and renewable generation options. In terms of the cost of natural gas facilities, the California Energy Commission has issued a draft report with current cost information for simple cycle and combined cycle gas turbine power plants.⁵ This report cites an average installed cost for a new unfired (no duct firing) 500 MW combined cycle plant – the equivalent of a converted Sumpter plant – of approximately \$550 million.⁶ The same report suggests that cost of converting an existing plant like Sumpter to a combined cycle facility would be approximately \$120 million.⁷

¹ Attachment CCNG1, PR Newswire, "FirstEnergy Generation Corp. Reaches Agreement To Sell 340-Megawatt Sumpter Plant," December 17, 2009.

² A duct burner is a direct fired gas burner located in the turbine exhaust stream. It has a very high efficiency due to the high inlet air temperature, and is used to boost the total available thermal energy. The turbine exhaust boosted by the duct burner is directed into the HRSG.

³ See, e.g., Attachment CCNG2, Black & Veatch, "Combined Cycle Conversion," and Attachment CCGN3, Alstom, "Combined Cycle Power Plant".

⁴ See, e.g., Comments of the Environmental Law and Policy Center, Natural Resources Defense Council, Clean Water Action, Ecology Center, Michigan Energy Alternatives Project, Michigan Land Use Institute, MidlandCARES, and the Sierra Club, Wolverine Power Supply Cooperative's Electric Generation Alternatives Analysis for Proposed Permit to Install No. 317-07, August 17, 2009, at 39 (referencing the National Renewable Energy Lab's lifecycle assessment of a 505 MW natural gas combined cycle plant).

⁵ Attachment CCNG4, California Energy Commission, "Comparative Costs of California Central Station Electricity Generation," Draft Staff Report, August 2009. The cost figures in this Draft Staff Report are comparable to the actual costs of building new combined cycle plants around the U.S. in recent years.

⁶ See *id.*, at pdf 130, Table C-22. Table C-22 shows that the average installed cost for an unfired 500 MW combined cycle plant is about \$1,100/kW, or \$550 million for the plant.

⁷ See *id.*, at pdf 130, Table C-22, and pdf 132, Table C-26. The average installed cost for a 100 MW simple cycle turbine (the size closest to the 85 MW turbines at Sumpter) is shown in Table C026 as about \$1,260/kW. Thus, for a plant like Sumpter that consists of four 85 MW simple cycle turbines, the total cost would be approximately \$430

Unfortunately, we cannot provide an exact comparison because the purchase price for Sumpter has not been disclosed. However, adding this estimated cost of conversion to the likely Sumpter purchase price can reasonably be expected to produce a total plant cost for a 500 MW combined cycle unit that will be significantly lower than the cost of building Wolverine's proposed new coal plant. Thus, Wolverine has the opportunity to obtain the baseload power that it says it needs at a far lower construction cost than its proposed coal plant.

For these reasons, the Draft Permit cannot issue. If you have any questions, please do not hesitate to contact attorney Meleah Geertsma at the information provided below.

Respectfully submitted,



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million. The conversion cost for the Sumpter plant is about equal to the difference between these two plant costs, or \$120 million.