



## The Proposed Consumers Coal Plant: An Unnecessary Economic and Public Health Risk

Coal is a dirty and outdated source of power. Every year, Consumers Energy’s proposed coal-fired power plant would emit up to 7.6 million tons of carbon dioxide and thousands of tons of other pollutants, and require the mining of at least 3.2 million tons of coal. The cost of the plant has skyrocketed recently, at the same time that energy demand has plummeted and cleaner alternatives have become more available and cost effective. Consumers and its ratepayers should reject this economically-risky and highly-polluting proposal, and pursue cleaner options such as energy efficiency, combined heat and power, wind, sustainable biomass, and natural gas combined cycle.

- **The Cost of the Proposed Coal Plant Has Skyrocketed 90%:** In June 2007, the estimated installed cost<sup>1</sup> for the Proposed Coal Plant was approximately \$1.88 billion.<sup>2</sup> By January 2009, that estimate had jumped 90% to \$3.58 billion.<sup>3</sup>
- **The Proposed Coal Plant Would Be A Major Source of Pollution:** Contrary to Consumers’ claims about “clean” coal, the Proposed Coal Plant would be quite dirty. In addition to the mining of millions of tons of coal every year, water pollution and heat discharges, and the need to dispose of vast amounts of polluted waste, the Plant would have the following air emissions:

**Table 1: Annual Emissions From the Proposed Coal Plant<sup>4</sup>**

Pollutant	Emissions in tons per year (tpy)
Particulate Matter	861.1
Sulfur Dioxide	2,152.3
Nitrogen Oxide	1,793.61
Carbon Monoxide	4,484.4
Mercury	63.4 pounds
Carbon Dioxide	7,659,992

- **Demand for Power Has Plummeted:** There has been no demonstration that the Proposed Coal Plant is needed, as demand for power in Michigan has dropped significantly in recent years and is not expected to grow in the foreseeable future. For example, energy demand in Michigan

<sup>1</sup> “Installed cost” includes construction, financing, owners’ costs, and allowance for funds used during construction, but does not include fuel, operating, and maintenance costs.

<sup>2</sup> Cummins & Barnard, Inc., Next Generation Program: Generation Technology Assessment, C&B Project No. 5541.01 (June 2007), at 19.

<sup>3</sup> Ltr. from David F. Ronk, Consumers Energy, to Paul Proudfoot, Michigan PSC, Re: MPSC Case No. U-15800 (Jan. 8, 2009), at p.6 Attachment 1.

<sup>4</sup> Based on maximum hourly emission rates allowed under the Permit for the Proposed Coal Plant’s main boiler. Does not include emissions from materials handling, auxiliary units, etc.

declined 3.7% in 2008,<sup>5</sup> and year-to-date demand in January to September 2009 was 14.6% lower than in the same period for 2008.<sup>6</sup> Consumers is forecasting a lower summer peak demand in 2010 than the peak in 2008,<sup>7</sup> and the company recently projected a 3% drop in total electric demand between 2007 and 2014.<sup>8</sup>

- **There Are Alternatives to the Proposed Coal Plant:** A comprehensive 2009 study found that economically and technically feasible alternative energy sources in Michigan could satisfy far more energy needs than the Proposed Coal Plant would:<sup>9</sup>

**Table 2: Technically and Economically Feasible Potential of Alternatives**

<b>Technology</b>	<b>Capacity (MW)</b>	<b>Energy (GWh)</b>
<u>Proposed Coal Plant</u>	<u>830</u>	<u>7,270</u>
Energy Efficiency	5,403	18,868
Demand Response	1,967	-
Combined Heat and Power	1,949	10,414
Biomass, Landfill Gas, and Digestion	922	5,813
Solar Photovoltaics	952	701
Existing Unused Natural Gas Capacity <sup>10</sup>	4,078	28,578
Wind	7,155	20,559

- **Alternatives Are Cost-Competitive With the Proposed Coal Plant:** Each of the alternative energy options discussed above is technically and economically feasible and many of them are cheaper than the Proposed Coal Plant. For example, the identified energy efficiency savings could be achieved at an estimated average cost of 2.9 cents per kilowatt-hour (“kWh”).<sup>11</sup> By contrast, the total cost of the Proposed Coal Plant is currently projected to be 9.7 cents per kWh. Similarly, the cost of energy from a wind farm located in an area with average wind speeds of more than seven meters per second is estimated to be as little as 6.6 cents per kWh.<sup>12</sup> Meanwhile, the average price paid by electricity generators for natural gas in September 2009 was 51.3% lower than it was in September 2008.<sup>13</sup>
- **Alternatives Are Significantly Cleaner Than the Proposed Coal Plant:** Each of the alternative energy options would have a significantly lower environmental impact than the Proposed Coal Plant. For example, energy efficiency, demand response, and wind all have zero air pollution emissions. Emissions from natural gas combined cycle (“NGCC”) plants are also substantially lower than those from the Proposed Coal Plant, as shown in the following chart:

<sup>5</sup> Mich. Dept. of Energy, Labor, and Econ. Growth, Michigan Energy Appraisal – Winter Outlook 2009-2010 (Oct. 2009), at 3.

<sup>6</sup> U.S. Energy Information Administration, Electric Power Monthly – December 2009 Edition (Dec. 16, 2009), at Table 1.6.B.

<sup>7</sup> Michigan PSC Case U-15645, Testimony of L. D. Warriner, Exhibit A-79 (Nov. 2008).

<sup>8</sup> Michigan PSC Case U-15889, Exhibit A-34 (Feb. 2009).

<sup>9</sup> Synapse Energy Economics, *Energy Future: A Green Energy Alternative For Michigan* (Aug. 2009).

<sup>10</sup> These natural gas figures are calculated from David Schlissel, Rachel Wilson, and Dr. David White, Synapse Energy Economics, Comments on Consumers Energy’s Electric Generation Alternatives Analysis for the Balanced Energy Initiative including the Proposed Karn-Weadock Coal Plant (July 7, 2009), at Table Synapse 1, and assume an 80% capacity factor.

<sup>11</sup> Synapse Report at 16-19.

<sup>12</sup> American Wind Energy Assoc., *The Economics of Wind Energy* (Feb. 2005), at 1.

<sup>13</sup> Energy Information Administration, *Electric Power Monthly* (Dec. 2009), at 2.

**Table 3: Emissions From the Proposed Coal Plant vs. Natural Gas Combined Cycle**

Pollutant	Proposed Coal Plant (tpy)	NGCC Plant (tpy) <sup>14</sup>
NOx	1,793.61	244.4
SO2	2,152.3	Negligible
Mercury	63.4 pounds	Negligible
PM filterable	861.1	Negligible
CO2	7,659,992	3,258,720

- **Retirement of Existing Coal Plants Does Not Justify the Proposed Coal Plant:** The Michigan Department of Environmental Quality’s approval of the Proposed Coal Plant also included a requirement that Consumers retire five aging coal-fired power plant units that have a combined capacity of 638 megawatts by the end of 2017.<sup>15</sup> While it is long past time that these aging units were shutdown, this retirement deal does not justify the Proposed Coal Plant for a number of reasons:
  - Even with the retirements, a new coal plant is not needed because, as explained above, cleaner alternatives are technically and economically feasible.
  - These aging coal plant units would almost certainly be retired by the end of 2017 anyways, as they face serious U.S. EPA notices of violations of the Clean Air Act and the need to make costly retrofits to comply with various federal environmental laws.
  - Even with the retirements, there would be a net increase of carbon dioxide emissions of approximately three million tons.
  - While there would be a net decrease of sulfur dioxide and nitrogen oxide emissions, that is only because the five aging coal units have long been operating without the modern pollution controls required by law. Adjusting for those legal requirements, the Proposed Coal Plant would emit more pollution than the five aging coal units that would be retired:

**Table 4: Emissions of Five Aging Coal Units vs. Proposed Coal Plant**

Pollutant	2008 Emissions from the five aging units <sup>16</sup>	Emissions from the five aging units w/controls <sup>17</sup>	Proposed coal plant emissions
Sulfur Dioxide	18,027.4	901.37	2,152.3
Nitrogen Oxides	6,122.9	1518.18	1,793.61
Carbon Dioxide	4,595,933	4,595,933	7,659,992

<sup>14</sup> Emissions data for an NGCC plant is from U.S. Dept. of Energy/National Energy Technology Laboratory, Cost and Performance Baseline for Fossil Energy Plants, Vol. 1: Bituminous Coal and Natural Gas to Electricity Final Report, DOE/NETL-2007/1281 (Aug. 2007), at 4.

<sup>15</sup> The units that would likely be shutdown are Whiting 1, 2, and 3, and Weadock 7 and 8. Two additional units, Cobb 4 and 5, may also be retired under the plan, but the need to retire those units is made contingent on events that may not occur.

<sup>16</sup> U.S. EPA Clean Air Markets Database

<sup>17</sup> We assume here the installation of flue gas desulfurization achieving at least 95% removal of sulfur dioxide, and low-NOx burners with overfire air and selective catalytic reduction to reduce nitrogen oxide emissions to no more than 0.07 lb/mmBtu.