

## MICHIGAN PUBLIC SERVICE COMMISSION

### Case No. U-15996

#### COMMENTS OF THE AMERICAN COALITION FOR CLEAN COAL ELECTRICITY

The American Coalition for Clean Coal Electricity (“ACCCE”) submits these comments in support of the Electric Generation Alternatives Analysis (“EGAA”) prepared by Consumers Energy. The EGAA sets forth a clear and convincing case for construction of a new advanced supercritical pulverized coal boiler at the Kern-Weadock Generating Station in Bay County, Michigan (the “Project”). Pursuant to Executive Directive No. 2009-02 and the April 1, 2009 Memorandum of Understanding between the Michigan Public Service Commission (“MPSC” or “Commission”) and the Michigan Department of Environmental Quality (“MDEQ”), the MPSC should find that the Project is needed and that there are no feasible alternatives to it.<sup>1</sup>

ACCCE is a partnership of the industries involved in producing electricity from coal. ACCCE believes that coal, America's most abundant energy resource, plays a critical role in meeting our country's growing need for affordable and reliable electricity. ACCCE's goal is to advance the development and deployment of advanced clean coal technologies that will produce electricity with near-zero emissions. ACCCE's membership list is available at the following url: <http://www.cleancoalusa.org/docs/members/>.

ACCCE believes that the Project represents an essential generation alternative as a part of the diverse portfolio of supply and demand side resources that Consumers proposes to acquire. As indicated in Consumer's EGAA, the Project will represent only 18 percent of Consumer's planned resource additions between 2008 and 2018. During that period, Consumers plans to

---

<sup>1</sup> We understand that there are legal issues concerning the Commission's legal authority to undertake these proceedings. We take no position on that question.

meet 32 percent of its resource needs with renewable resources, 31 percent with energy efficiency and demand side management, and 19 percent with gas combined cycle. EGAA, p. 1. Given that coal represents the smallest part of Consumer's planned resource portfolio additions, a decision that a more prudent alternative exists would be a decision that coal should play no future role in Consumer's resource mix. ACCCE believes that would be a very unwise decision, for the following reasons:

**1. *Consumers needs new resources.*** Like many electric utility companies around the country, Consumers is facing an emerging resource gap. This gap is caused by the fact that, like many utilities, Consumers has been appropriately conservative in bringing new resources on line in the face of great uncertainty as to the future economy and future environmental standards. Nevertheless, load has continued to grow, its existing fleet of resources has aged and retirements must be assumed, and the Palisades Nuclear Power Plant power purchase agreement will expire in 2022. Thus, even with the recent addition of the Zeeland combined cycle natural gas plant, further resource acquisition decisions can no longer be postponed.

Consumers needs new resources even in the face of Michigan's declining economy. As stated in the EGAA, Consumers' load growth forecast projects a historically low increase in future electric demand – about 0.3% in average peak load growth per year, as compared with the company's historical average of about 2% per year, and one-third of the company's May 2007 forecast of about 1% per year. EGAA, pp. 6-7. As Consumers says, "the company's current forecast is driven by projections that Michigan's manufacturing activity will fall, population will continue to decline, and housing supply will continue to significantly exceed demand." *Id.* at 7. Moreover, the forecast assumes no increase in load from plug-in hybrid and electric vehicles. *Id.* Nevertheless, Consumers faces a future in which demand will exceed supply.

**2. Consumers cannot prudently rely on the market to meet its emerging resource gap.** Consumers' need for resources has reached the point where it may become dangerously dependent on market purchases in a market that is itself short of resources. As the EGAA states, Consumers in 2009 will purchase 15% of its net energy requirements from the MISO market. Without the Project, this figure will rise to 32% in 2017. Even with the Project, this figure is projected to rise to 22%. EGAA, p. 14.

This creates tremendous risks for Consumers and Consumers' customers because the MISO market, like Consumers specifically, is becoming short of resources. MISO states that the region requires an average of 1,400 MW of new generation annually through 2024. *Id.* at 16. No new baseload capacity has been built in Michigan in more than 20 years. The region is becoming ever more reliant on natural gas, as almost all new generations additions have been gas-fired. Natural gas prices have proved to be highly volatile, recently reaching more than \$13/MMBTU. *See id.* at 19, Fig. 7. Given this situation, if Consumers does not build the Project, it may find itself competing against other utilities for a dwindling pool of power resources, with spiraling prices the result. And this risk will grow exponentially if the extremely conservative assumptions of Consumers' load forecast prove unfounded – for instance, if the economy recovers on a faster pace, if electric load grows as a result of plug-in hybrids or electric cars, or if the company's ambitious energy efficiency program does not realize its goals.

**3. Additional renewable resources – beyond those that Consumers plans to acquire – cannot substitute for the Project.** As the EGAA states, Consumers plans to acquire an additional 500 MW of new renewable capacity by the end of 2015 and a total of 900 MW of renewable capacity by the end of 2017. Consumers plans to purchase these resources in order to

comply with government mandates even though 400 MW of the 900 MW will not be needed until 2022. EGAA, p. 9.

The principal renewable resource that Consumers can add is wind resources. Additional wind resources, however, beyond the amounts already in its plan, cannot substitute for the project. As an intermittent resource, wind cannot supply the baseload power that Consumers needs. Moreover, wind is disproportionately not available when energy is most needed, during the peak parts of the day and year – because wind tends to blow the least when it is very hot and very cold. Wind output therefore can be very low at the moment of maximum demand, and power swings of 70% within 12 hours may be expected. As a result, wind power in the MISO region can qualify for a capacity value in the summer months of only 12.5%. *Id.*, p. 11, Table 1.

Moreover, wind requires a natural gas back-up to ensure reliability. Consumers, however, is becoming ever more reliant on natural gas, both in terms of its new combined cycle plant and in terms of its commitment to wind, which requires a natural gas back-up. Even more wind would require even more natural gas generation. As discussed below, increased reliance on natural gas entails its own set of risks.

**4. *Additional efficiency beyond the amounts planned cannot substitute for the Project.*** As set forth in the EGAA, pp. 8-9, Consumers is projecting as much new demand side reduction as is possible at this point. For instance, it assumes compliance with PA 295 requirements, which, if attained, will reduce retail energy sales by about 5.5% by 2015. Consumers also assumes that these reductions can be continued thereafter at an additional 0.5% per year, resulting in a cumulative 7.6% of retail peak load reductions by 2030. As the EGAA states, this level is consistent with summer peak demand of realistic achievable potential as determined by the Electric Power Research Institute.

Some may argue that reductions in addition to these may be feasible but, in any event, further energy efficiency will obviously not substitute for an 830 MW baseload plant. Moreover, Consumers must be cognizant of the fact that energy efficiency goals are not always achieved in practice, as utility DSM programs are critically dependent on often unpredictable customer action. As low-hanging energy efficiency fruit is harvested, inducing customers to choose even greater efficiency become more problematic. As a result, to find that the Project is not prudent because of the potential for ever more increasing energy efficiency creates a large risk of a shortage of electricity supplies if energy efficiency goals are not met. Energy efficiency is a critical component of the Nation's energy resource mix, but it will not eliminate the need for new supply side resources.

**5. *The further addition of new natural gas generation would not represent a prudent resource choice.***

A decision by Consumers to cancel the Project in favor of another large natural gas plant could prove disastrous to Consumers' ratepayers, as Consumers would be forced to compete with many other utilities and residential and commercial customers for a finite supply of gas resources. The country is already experiencing another "dash to gas" to replace previously planned new coal-fueled electric generating stations that have been canceled or delayed in light of uncertainty as to national climate change policy. According to a recent report by the North American Electric Reliability Corporation (NERC), 2008 projections of new gas-fired generation for the years 2008 to 2016 show a 20,000 MW increase as compared with projections just a year before, for a total of more than 400,000 MW of new gas generation planned over this period.

According to NERC, nearly all of the growth in peak load demand for this period is projected to come from gas.<sup>2</sup>

A report last year by the National Energy Technology Laboratory (NETL) expressed the same concern. According to the report, “[b]y 2016, in the absence of 18 GW of forecasted new coal-fired plants, the addition of natural gas plants to supplant these kWh would demand 1.4 Tcf/year, or almost all of the presently forecasted LNG growth.” If electricity growth is higher due to a better economy, an additional 2.3 Tcf of natural gas generation will be needed. The report noted that the only way to support these levels of LNG imports would be significant increases in natural gas prices. The report also noted that climate change regulation could exacerbate this situation, to the extent existing coal generation switches to natural gas to meet greenhouse gas emission reduction targets. The report further noted that consumption of natural gas by U.S. power generation could more than double by 2016, with the existing fleet of gas generators operating at higher capacity factors and new gas generation facilities being built.<sup>3</sup>

Obviously, this large increase in the demand for natural gas will bid up natural gas prices from their currently depressed levels. Prices at or above the ~\$13/MMBTU level reached last year are not impossible given the history of volatile natural gas prices.

The issue of demand oversubscribing supply is one that will affect both electric consumers and residential and commercial gas consumers, particularly in frigid Michigan. Increased electric sector demand for natural gas is the primary reason natural gas prices for

---

<sup>2</sup> North Am. Elec. Reliability Corp., *Climate Policy Critical to Grid Reliability*, (Nov. 10, 2008) (available at <http://www.nerc.com>).

<sup>3</sup> See Nat’l Energy Tech. Lab., *Natural Gas and Electricity Costs and Impacts on Industry – A White Paper on Expected Near-Term Cost Increases* (April 28, 2008) (emphasis supplied).

manufacturing increased over the last decade. Similarly, the price of natural gas to residents nationally increased from \$7.76 in 2000 to \$13.68 in 2008.

Increasing demand for natural gas also creates energy security issues. The increased demand for natural gas is likely to lead to increased imports of LNG, even if expensive unconventional natural gas resources in the United States are developed. As stated by NETL:

Since 2001, perceptions of natural gas supply and consumption have been successively ratcheted down, without any assurance the decline has halted. Nonetheless, recognition of the extremely difficult natural gas supply situation facing the United States has not been fully appreciated in recent energy and climate change analyses. Policies that encourage the use of natural gas to substitute for coal in power generation could very well lead to spectacular price increases for households and industry. *As prices are pushed higher the need for more LNG will create closer links to the world oil price, setting the stage for the marginal price of U.S. electricity to be set by the whims of foreign oil/LNG suppliers, for the first time in U.S. history. This blind eye towards U.S. energy security extends to the inability to recognize that the nation's coal supply could help the U.S. forestall this situation.* The current opposition to baseload power, and in particular coal-fired plants, in anticipation of climate change legislation, will have serious and damaging implications for the reliability of electricity supply and the viability of the U.S. economy in the initial, costly period of adjustment to a carbon control paradigm.<sup>4</sup>

Increased reliance on LNG imports is obviously at odds with the nation's energy independence and security goals. In addition to the concerns about having to import more rather than less energy, the nation faces a problem with the probable sources of imported energy. Russia, Iran, Qatar, Saudi Arabia, United Arab Emirates, Nigeria, Algeria, Venezuela and Iraq collectively control 75 percent of world natural gas supplies, *with Russia, Iran and Venezuela being the three largest suppliers of new incremental reserves.* The three largest suppliers have

---

<sup>4</sup> See Nat'l Energy Tech. Lab., *Natural Gas and Electricity Costs and Impacts on Industry – A White Paper on Expected Near-Term Cost Increases* 11 (April 28, 2008) (emphasis supplied).

more “monopoly power” in natural gas than OPEC has in oil. The United States competes to import LNG with the European Union and Japan, as well as China and India, which creates significant upward pressure on prices and great uncertainty as to supply availability. The concentration of gas reserves in a handful of hostile or potentially hostile countries ensures that the U.S. will face a long-term struggle for supplies in the international LNG markets. As noted by the Energy Information Administration, “[g]eopolitical developments likely will continue to play a major role in energy prices and supplies, as has been the case in Nigeria and elsewhere. Lastly, and perhaps most importantly, the degree of competition from other countries will be a crucial variable that determines the actual flows of LNG to the United States.”<sup>5</sup>

**6. Coal is a prudent resource choice.**

**a. Low-cost, stable prices.** The EGAA shows that the Project is the lowest-cost alternative among all of the resource options examined. This is true because, despite the relatively high capital cost of a coal-fired electric generating facility, coal prices are low and stable compared to natural gas prices, which have been highly volatile over time. Importantly, Consumers’ projection that coal is the lowest-cost alternative includes potential CO<sub>2</sub> allowance costs in a cap and trade program.

Consumers’ projection of coal’s significant fuel price advantage as compared with natural gas is confirmed by national data. From 2000 to 2008, the cost to generate electricity from coal averaged \$1.76/MMBTU compared to \$7.84 for natural gas. The price of natural gas is also 20 times more volatile than the price of coal. From 2005 to 2008, for instance, the price of coal to produce electricity ranged from \$1.20-2.18/MMBTU. The price of natural gas had

---

<sup>5</sup> Damien Gaul & Kobi Platt, U.S. Department of Energy, *Short-Term Energy Outlook Supplement: U.S. LNG Imports – The Next Wave 8* (2007) (available at [www.eia.gov/emeu/steo/pub/pdf/LNG\\_Jan2007.pdf](http://www.eia.gov/emeu/steo/pub/pdf/LNG_Jan2007.pdf)).

especially high volatility during the period, ranging from a low of about \$3.50 to a high of more than \$13.

In today's economic environment, particularly in Michigan, the fact that coal is the lowest-cost alternative should be the most important factor in the Commission's review of the EGAA. Obviously, higher energy prices disproportionately harm those with lower incomes. For a majority of low- and middle-income families, energy costs today are consuming a comparable amount of after-tax household income to that traditionally spent on major categories such as food, housing or health care. As a result, those with lower incomes will be seriously affected by higher energy prices. We attach a report prepared for ACCCE showing the following:

- Between 2001 and 2008, average energy bills for American working families earning less than \$50,000 per year nearly doubled, from \$2,428 in 2001 to \$4,281 in 2008.
- Half of U.S. households paid 20% or more of their after-tax incomes on energy in 2008.
- The poorest are hardest hit. Those earning less than \$10,000 spent 52% of their income on energy in 2008. Those earning between \$10,000 and \$30,000 spent 22% of their income on energy.
- Overall, the percentage of after-tax income that working families spent on energy increased from 11% in 2001 to 20% in 2008.
- Because minorities earn disproportionately lower incomes, they are squeezed the hardest by high energy prices. Sixty-two percent of Hispanic families and 66% of black families earn less than \$50,000 annually, compared to 48% of white households. Black and Hispanic families earning less than \$30,000 annually spent 27% and 23% of their after-tax incomes on energy in 2008, respectively, reducing their ability to pay for other necessities such as housing, food, education and health care.

Higher energy prices create not just economic effects for lower-income households but health effects as well. One of the most widespread and strongest research findings in the field of medical population statistics is that the higher the social and economic status (holding age and sex constant), the lower the probability of illness and mortality. This theory has been well

documented over decades of research.<sup>6</sup> The World Health Organization, the World Bank, and other noted institutions agree with this fact.

For energy costs, the theory has been demonstrated and developed in D.E. Klein & R.L. Keeney, *Mortality Reductions from Use of Low-Cost Coal-Fueled Power: An Analytical Framework* (Nov. 2005); see also M. Harvey Brenner, *Health Benefits of Low-Cost Energy, An Econometric Case Study*, Environmental Manager (Nov. 2005). As set forth in the Klein and Keeney report, in the 1980s, the noted political scientist Aaron Wildavsky formulated the concept of the “richer is safer” (also referred to as “wealthier is healthier”). In essence, this link between wealth and health relies on two facts. *First, when individuals incur higher costs of regulatory actions – such as higher prices for their energy use – less of their income is available for other purposes. Second, individuals tend to use additional disposal income in ways that on average reduce their health and safety risks and therefore reduce deaths. Accordingly, when higher energy costs reduce the disposable income available for other purposes, this can increase other health and safety risks to individuals.*

Money spent on energy costs is not available to meet other household needs. With more income, individuals tend to spend more on health care for themselves and their children, purchase more safety equipment, eat a more nutritious diet and take other actions that decrease the likelihood of premature death by illness or accident. Conversely, individual reductions in disposal income tend to increase health and safety risks and the resulting deaths. *Similarly, higher unemployment has been shown to have an adverse effect on safety, health and longevity.*

---

<sup>6</sup> See, e.g., M. Harvey Brenner, *Commentary: Economic Growth is the Basis of Mortality Rate Decline in the 20th Century--Experience of the United States 1901-2000* 34 INT. J. EPIDEMIOLOGY 1214-21 (2005); M. Harvey Brenner, *Personal Stability and Economic Security* 8 SOC. POLICY 2-4 (2000).

There are many mechanisms that demonstrate the richer-is-safer and wealthier-is-healthier concepts. Some are directly due to individuals' actions and others are due to societal action. Here are a few examples:

- When individuals have less disposable income, on average the following occur: nutrition is typically poorer, babies will have less prenatal health care, adults may forgo physical exams and preventative medical expenses (e.g., pap smears) and postpone safety purchases (e.g., home fire alarms), and individuals are less likely to attend smoking clinics to stop smoking or spend as much to reduce stress.
- A general increase in the standard of living influences societal structure. Health and safety are improved via social mechanisms such as education. With more disposable income, students from poor families will more likely complete high school and attend college. Better education changes both one's knowledge about what is safe and healthy and one's practice to pursue them. For example, sanitary procedures are improved, homes are "child-proofed" to reduce accidents, and more people start wearing seat belts.
- A wealthier society leads to the development of a better and more diverse medical research establishment, to larger markets to stimulate creation of safer products, to an infrastructure of health clubs and many opportunities for exercise, and to the societal resilience to rapidly and efficiently attack new unforeseen problems threatening our collective health and safety.

**b. Carbon dioxide emissions are not a negative factor in this proceeding.**

Obvious concern exists with the Project's CO<sub>2</sub> emissions and effect on global climate. Given the likely pendency of national climate change legislation, however, that concern should not affect the Commission's decision here. The likely national legislation will create a national cap, which will decline over time, on major sources of greenhouse gas emissions, including the electric utility sector. Regardless of whether any particular new coal plant is built, that cap will define the amount of emissions from electric utility sources. Finding that Consumer's Project is not the most appropriate alternative, therefore, will not lead to a reduction in GHG emissions in the utility sector. The cap amount will still be emitted.

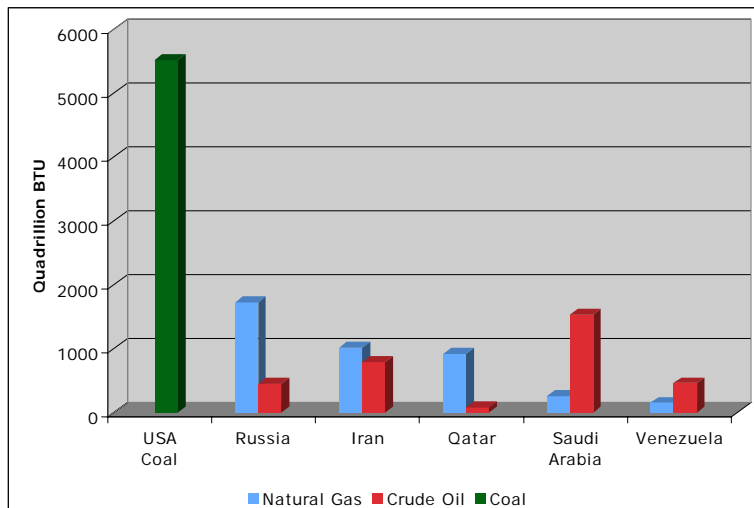
Moreover, given the cap, the construction of new coal-fired electric generation like the Project will lead to the retirement of existing, less efficient coal-fired generation. As shown in the EGAA, p. 12, Consumers assumes the retirement of coal-fired generation. As a result, construction of the Project will not cause an increase in Consumers' CO<sub>2</sub> emissions. *Id.*, p. 22-23. In fact, given the assumed retirements, CO<sub>2</sub> emissions on Consumers' system will actually decline, even with construction of the Project. *Id.* Replacement of older units with new units will also create a beneficial economic effect, as new coal plants are generally about 20 percent more efficient than the existing fleet. Replacement of old coal plants with new coal plants will also have positive environmental impacts in that the new plants emit less traditional air pollution than older plants.

Additionally, since the Project is being designed to be carbon capture ready, the Project's CO<sub>2</sub> emissions may be abated in the future. Carbon capture and sequestration (CCS) technology is showing great technological promise and is expected to be ready for commercial deployment some time after 2020. CCS demonstration projects received significant support in the recently-passed Waxman-Markey American Clean Energy and Security Act, and the Obama Administration has stated that it is committed to making CCS a commercial reality. The fact that the Project will be carbon capture ready will create a large competitive advantage for the Project as compared with other existing coal plants in the region. Given enactment of cap and trade legislation, a new, highly efficient plant such as the Project is much more likely to operate as compared with existing plants, some of which may be forced to retire. Similarly, the ability of the Project to install CCS when commercially available will create a valuable hedge for Consumers against high CO<sub>2</sub> allowance prices – unlike many existing plants which may not be

able to bear the cost of installing CCS, the Project will be able to do so if allowance prices reach a point where such an investment is justified.

c. **Energy security favors the use of coal.** In contrast with natural gas, coal has the advantage of being available from domestic sources in virtually unlimited amounts. Almost all coal generation in the United States is fueled from U.S. coal mines, the only exception being a handful of plants located on the East Coast. The U.S. has over 250 billion tons of coal – 29% of global supply and enough to fuel the nation at current rates for two centuries. Coal thus is the epitome of energy security – all resources, transportation facilities and generating stations are within U.S. borders. In contrast we import almost 60% of our oil and over 17% of our natural gas.

**U.S. Coal Reserves vs. the Largest Oil and NG Reserves**



*Source: EIA, 2008*

Coal is also widely distributed across the country with a 60/40% split between western and eastern states. This presents particular advantages for a Midwestern utility such as Consumers, which plans to supply the Project from both eastern and western sources, thereby diversifying sources of supply and creating competition.

d. **Maintaining coal in Consumers' portfolio is necessary to maintain a diverse portfolio of resources.** History has taught electric utilities that they must maintain a diverse supply of electricity resources in the face of the multiple uncertainties that are inherent in utility planning. Long-term projections of, for instance, natural gas prices, construction costs, commodity costs and many other factors are, to a large degree, inherently unknowable.

For that reason, utilities must maintain portfolio diversity in order to spread risk. If a utility becomes overly reliant on one type of resource or a narrow set of resources, it faces the possibility of potentially catastrophic results if its assumptions as to that resource prove inaccurate.

A decision here that the Project should not be considered to be a reasonable alternative would be an unfortunate decision to limit Consumers' resource portfolio and expose Consumers' ratepayers to the risk of an undiversified portfolio. Those who advocate against coal believe that they are correct about the future of natural gas supply and prices, and the ability of wind and energy efficiency to meet future electric demand. But if they are wrong, electric consumers will be the victim. Obviously, this does not mean that Consumers should build only coal plants. To the contrary, Consumers has it exactly right: it should acquire a diverse portfolio of resources, including coal, in order to protect its ratepayers against a variety of uncertain future scenarios.

[rest of page deliberately left blank]

**7. Conclusion.** The Project represents a valuable addition to Consumer's diverse portfolio of demand and supply side resources. ACCCE urges the Commission to find that no other prudent alternatives exist.

Dated: July 2, 2009

Respectfully submitted,

/s/ Scott Wiseman  
Scott Wiseman  
Senior Vice President, State Affairs  
American Coalition for Clean Coal  
Electricity  
333 John Carlyle Street, Suite 530  
Alexandria, VA 22314  
Ph. 703-684-6292  
swiseman@cleancoalusa.org