MPUC Docket No. E-6472/M-05-1993
OAH Docket No. 12-2500-17260-2

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of the Petition of Excelsior Energy Inc. for Approval of a Power Purchase Agreement Under Minn. Stat. § 216B.1694, Determination of Least Cost Technology, and Establishment Of A Clean Energy Technology Minimum Under Minn. Stat. § 216B.1693

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FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION

This matter is before Administrative Law Judges Steve M. Mihalchick and Bruce H. Johnson on the record submitted by the parties in lieu of an evidentiary hearing. The following parties have appeared in this matter:

Byron E. Starns, Leonard, Street and Deinard, 150 South Fifth Street, Suite 2300, Minneapolis, MN 55402, and Thomas Osteraas, Excelsior Energy, 11100 Wayzata Boulevard, Suite 350, Minnetonka, MN 55305, on behalf of Excelsior Energy, Inc.

Christopher B. Clark, Assistant General Counsel, 414 Nicollet Mall, Suite 2900, Minneapolis, MN 55401, and Michael Krikava, Briggs and Morgan, P.A., 2200 I.D.S. Center, 80 South 8th Street, Minneapolis, MN 55402, on behalf of Northern States Power Company d/b/a Xcel Energy.

Valerie Smith, Assistant Attorney General, 445 Minnesota Street, Suite 1400, St. Paul, MN 55101, on behalf of the Department of Commerce.

David R. Moeller, Minnesota Power, 30 West Superior Street, Duluth, MN 55802, on behalf of Minnesota Power.

Carol Overland, Overland Law Office, PO Box 176, Red Wing, MN 55066, on behalf of minncoalgasplant.com (MCGP).

Kevin Reuther, Attorney at Law, Minnesota Center for Environmental Advocacy, 26 East Exchange Street, Suite 206, St. Paul, MN 55101, on behalf of the Minnesota Center for Environmental Advocacy, Izaak Walton League of America—Midwest Office, Wind on the Wires, and Minnesotans for an Energy Efficient Economy (the Environmental Organizations).

Robert S. Lee and Andrew P. Moratzka, Mackall, Crounse & Moore, PLC, 1400 AT&T Tower, 901 Marquette Ave, Minneapolis, MN 55402 on behalf of Xcel Industrial Intervenors.

Todd J. Guerrero and David Sasseville, Lindquist & Vennum, 4200 IDS Center, 80 South 8th Street, Minneapolis, MN 55402-2274 on behalf of Big Stone Unit II Co-Owners.

Richard J. Savelkoul, Felhaber, Larson, Fenlon & Vogt, 444 Cedar Street, Suite 2100, St. Paul, MN 55101 on behalf of the Minnesota Chamber of Commerce.

Eric F. Swanson and David M. Aafedt, Winthrop & Weinstine, P.A., 225 South Sixth St, Suite 3500, Minneapolis, MN 55402 on behalf of Manitoba Hydro.

John E. Drawz, Fredrikson & Byron, P.A., Suite 4000, 200 South Sixth Street, Minneapolis, MN 55402-1425, on behalf of Great Northern Power Development, LLP (Great Northern).

NOTICE

Notice is hereby given that, pursuant to Minn. Stat. § 14.61, and the Rules of Practice of the Minnesota Public Utilities Commission and the Office of Administrative Hearings, exceptions to this Report, if any, by any party adversely affected must be filed within 20 days of the mailing date hereof with the Executive Secretary, Minnesota Public Utilities Commission, 350 Metro Square, 121 - 7th Place East, St. Paul, Minnesota 55101 or by electronic filing. The Commission may modify the Date for filing exceptions. Exceptions must be specific and stated and numbered separately. Proposed Findings of Fact, Conclusions and Order should be included, and copies thereof shall be served upon all parties. If desired, a reply to exceptions may be filed and served within ten days after the service of the exceptions to which reply is made. Oral argument before a majority of the Commission will be permitted upon request Such request must accompany the filed exceptions or reply.

The Minnesota Public Utilities Commission will make the final determination of the matter after the expiration of the period for filing exceptions as set forth above, or after oral argument, if such is requested and had in the matter.

Further notice is hereby given that the Commission may, at its own discretion, accept or reject the Administrative Law Judges' recommendation and that said recommendation has no legal effect unless expressly adopted by the Commission as its final order.

STATEMENT OF THE ISSUES

1. Whether Excelsior Energy's Mesaba Unit I (the Project) is an "Innovative Energy Project" within the meaning of Minn. Stat. § 216B.1694, subd. 1.

> The Administrative Law Judges conclude that it is not an "Innovative Energy Project" within the meaning of Minn. Stat. § 216B.1694, subd. 1. Therefore, we also conclude that Excelsior Energy is not entitled to enter into a Power Purchase Agreement (PPA) to provide baseload capacity and energy to Xcel.

2. Whether the Commission should approve, disapprove, amend, or modify Excelsior Energy's proposed PPA.

> Even if the Project were an "Innovative Energy Project," the Administrative Law Judges conclude that the PPA should be disapproved because of the shortcomings discussed in this report. If the PPA is approved by the Commission, it should returned to Excelsior Energy, Xcel Energy, and the Department to negotiate a modified PPA that addresses the shortfalls that have been identified and then be returned to the Commission for final approval.

3. Whether the Project incorporates a "Clean Energy Technology" that "is or is likely to be a least-cost resource, including the costs of ancillary services and other generation and transmission upgrades necessary" and is therefore entitled to supply Xcel with at least two percent of the electric energy that Xcel Energy provides to its retail customers.

> The Administrative Law Judges conclude that neither the technology nor the Project is or is likely to be a least-cost resource. Therefore, we also conclude that the Project is not entitled to supply Xcel with at least two percent of the electric energy Xcel Energy provides to its retail customers.

Based upon the record created in this proceeding, the Administrative Law Judges make the following:

FINDINGS OF FACT

Coal-Burning Power Plants; the Project

1. Pulverized coal (PC) combustion is the most commonly used technology in coal-fired power plants. In PC plants, the coal is ground to a powder then blown with air into the combustion chamber. Piping inside the combustor or a heat exchanger heats water to produce steam to drive a nearby steam turbine and generator.[1]

[1] EE 1016 at 11 (Fluor Report).

2. In Supercritical Pulverized Coal (SCPC) plants, higher temperatures are maintained in the combustor to generate steam at pressures that are above the critical point of water. This results in higher efficiencies than subcritical plants. The first SCPC plants in the United States were constructed in the 1950s. No new units have been placed in service in the United States since the mid 1980s. However, SCPC plants are now planned for Minnesota and surrounding states. New technologies allow SCPC plants to operate at even higher pressures and temperatures, which further improves heat rates. Even more advanced plants are called "Ultra-Supercritical" (USC). A modern 600 MW SCPC plant consists of a single boiler and a single steam turbine and has a full suite of advanced environmental controls such as wet scrubbers, selective catalytic reduction, and mercury removal.[2] In this Report, the term "pulverized coal plants" includes standard PC, SCPC, and USC pulverized coal plants, unless the context indicates otherwise.

3. A combined cycle (CC) plant uses a gas-fired combustion turbine generator to generate electricity, plus it uses excess heat from the combustion in the combustion turbine to create steam to power a steam turbine generator. This combination is considered highly efficient because it uses more of the heat energy from the burning of the gas. It is now a fairly standard configuration. The gas used is usually natural gas (thus, an NGCC), but other gases can also be used.

4. An Integrated Gasification Combined Cycle (IGCC) plant integrates gasification with a combined cycle plant. The gasification process converts coal or other feedstock to a synthesis gas (syngas) comprised primarily of carbon monoxide and hydrogen. The gasification takes place in a gasifier. That is a large vessel capable of containing the high-temperature partial combustion process that breaks down the feedstock and any other ingredients fed into the gasifier, usually water or steam and air or oxygen, into carbon, hydrogen, and oxygen, and then recombines those elements into syngas and other compounds. The syngas is then transported to and burned in a nearby combined cycle gas combustion turbine generator/steam turbine generator combination.[3]

5. Another developing coal technology is "fluidized bed," the most recent generation of which is Circulating Fluidized Bed (CFB) technology. It is described by the U.S. Department of Energy (DOE) as follows:

> Fluidized beds suspend solid fuels on upward-blowing jets of air during the combustion process. The result is a turbulent mixing of gas and solids. The tumbling action, much like a bubbling fluid, provides more effective chemical reactions and heat transfer.
>
> . . .

[2] EE 1016 at 11 (Fluor Report).
[3] EE 1016 at 13-14 (Fluor Report).

> The mixing action of the fluidized bed results brings the flue gases into contact with a sulfur-absorbing chemical, such as limestone or dolomite. More than 95 percent of the sulfur pollutants in coal can be captured inside the boiler by the sorbent.
>
> . . .
>
> The popularity of fluidized bed combustion is due largely to the technology's fuel flexibility - almost any combustible material, from coal to municipal waste, can be burned - and the capability of meeting sulfur dioxide and nitrogen oxide emission standards without the need for expensive add-on controls.
>
> . . .
>
> A 2nd generation pressurized fluidized bed combustor uses "circulating fluidized-bed" technology and a number of efficiency enhancement measures. Circulating fluidized-bed technology has the potential to improve operational characteristics by using higher air flows to entrain and move the bed material, and recirculating nearly all the bed material with adjacent high-volume, hot cyclone separators. The relatively clean flue gas goes on to the heat exchanger. This approach theoretically simplifies feed design, extends the contact between sorbent and flue gas, reduces likelihood of heat exchanger tube erosion, and improves SO2 capture and combustion efficiency.
>
> A major efficiency enhancing measure for 2nd generation pressurized fluidized bed combustor is the integration of a coal gasifier (carbonizer) to produce a fuel gas. This fuel gas is combusted in a topping combustor and adds to the combustor's flue gas energy entering the gas turbine, which is the more efficient portion of the combined cycle. The topping combustor must exhibit flame stability in combusting low-Btu gas and low-NOx emission characteristics. To take maximum advantage of the increasingly efficient commercial gas turbines, the high-energy gas leaving the topping combustor must be nearly free of particulate matter and alkali/sulfur content. Also, releases to the environment from the pressurized fluid bed combustion system must be essentially free of mercury, a soon-to-be regulated hazardous air pollutant.[4]

6. Two IGCC demonstration plants are currently operating in the United States: the 250 MW Polk County plant in Florida and the 260 MW Wabash River plant in Indiana. Both plants were partly funded by the Department of Energy and can run on bituminous coal and petroleum coke fuels. The Polk County plant was placed in service in 1996 and utilizes GE (formerly Texaco) gasification technology. The Wabash River

[4] www.fossil.energy.gov/programs/powersystems/combustion/fluidizedbed_overview.html.

plant was placed in service in 1995 and utilizes the ConocoPhillips E-Gas technology that has been selected by Excelsior Energy for the Project.[5]

7. Mesaba Unit I (the Project) will integrate ConocoPhillips E-Gas gasification technology with advanced F-class combustion turbines. This is an IGCC plant that will include two operating "gasification trains" or "gasification islands" (a gasifier and its supporting apparatus), a standby gasification train, two combustion turbines, and a single steam turbine. The spare gasification train is included in order to increase the percent of the time the Project is able to operate, its "availability," to about 92 percent, a very high number. It also provides a backup and the possibility of creating extra syngas that could be sold as a fuel or chemical feedstock. The two or three gasifier trains will feed syngas to the "combined cycle," or "power island," section. There, the syngas will be burned in the two gas combustion turbine generators and the excess heat from those gas turbines will be used to heat water to steam to drive the single steam turbine generator. High pressure steam produced in the gasification trains will also be integrated into the combined cycle, again making efficient use of heat energy that would otherwise be wasted.[6]

8. Gasifiers can be designed to process a wide variety of hydrocarbon fuels, including biomass. The gasifiers for the Project have been designed to operate on subbituminous Powder River Basin (PRB) coal, but will also have the flexibility to receive petroleum coke or bituminous coal fuel as market conditions dictate. The expected net plant output is 603 MW when operating on PRB coal fuel. The net heat rate (a measure power plant thermal efficiency) for the plant when operating on PRB coal is estimated at 9390 btu/kWh on a higher heating value basis. The heat rate will be substantially lower with petroleum coke or bituminous coal fuels, or on natural gas.[7]

9. The Project can also run on natural gas, bypassing the gasifiers and operating as a typical NGCC plant. The Project will be operated in this mode for startup, as back-up when required, and for significant time periods during at least its first three years of operation.[8]

10. In addition to the Mesaba Energy Project, a number of 600 MW IGCC projects have been announced throughout the country.

11. According to an article offered by Excelsior Energy by one expert on IGCC technology,

> Continuing advances in pulverized coal boilers and steam turbines, to supercritical and now ultra-supercritical steam conditions, have largely closed the efficiency gap that once favored IGCC technology.

[5] EE 1016 at 14 (Fluor Report).
[6] EE 1016 at 14 (Fluor Report).
[7] EE 1004 at 19-20; EE 1016 at 14. (Fluor Report).
[8] EE 1020 at 54-55.

> According to the EPRI data, there is less that a 1% difference in heat rate between advanced PC and current IGCC technologies.
>
> In the future, the development of more advanced gasifier technologies is expected to restore that efficiency advantage. Today, however, the economic incentive for going with IGCC is not at all clear.

He suggests that the primary advantages of IGCC technology to be promoted are low emissions, the possibility of carbon dioxide capture, and the possibility of low-cost hydrogen production.[9] Excelsior Energy has adopted that strategy in this case. The evidence in this case suggests, however, that there are constantly evolving advances the efficiency and reduction of emissions for all the methods of using coal to generate electricity. As a result, it is difficult to say that a particular coal technology presents the best option at any particular point. What was true four years ago is not necessarily true today.

12. Moreover, developments in production of energy from renewables, along with increasing public desire and growing legislative requirements for greater use of renewables and less use of coal and other fossil fuels, provide additional complexities to be considered. Of particular relevance here is 2007 Minn. Laws, Chap. 3, Sec. 1, which was enacted February 22, 2007. It raised the Renewable Energy Objectives for electric utilities in Minnesota contained in Minn. Stat. § 216B.1691. Xcel Energy's objectives were set higher than the other electric utilities. Xcel Energy is required to provide at least the following percentages of its total retail electric sales to retail customers in Minnesota with electricity generated by "eligible energy technologies" (solar, wind, small hydroelectric, hydrogen, and biomass) by the end of the year indicated:

(1)	2010	15 percent
(2)	2012	18 percent
(3)	2016	25 percent
(4)	2020	30 percent.

Of the 30 percent in 2020, at least 25 percent must be generated by wind energy conversion systems and the remaining five percent by other "eligible energy technology."

13. The payment terms, specifications, and operating requirements for the Project would be controlled by a Power Purchase Agreement proposed by Excelsior Energy (the PPA). The PPA governs the purchase by Xcel Energy of the entire

[9] EE 1028.18, Harry Jaeger, "*Will IGCC win out over pulverized coal and nuclear steam plants? Near-zero emissions and path to a hydrogen economy, not efficiency and cost advantages, favor coal-based IGCC over pulverized coal steam plants for electric utility power generation*." Gas Turbine World, March-April 2005.

capacity available from the Project, as well as its entire energy output. The term of the PPA is 25 years, from 2011 to 2036, subject to possible extensions.[10]

The IEP and CET Statutes

14. The Legislature enacted both the Clean Energy Technology statute, Minn. Stat. § 216B.1693, and the Innovative Energy Project statute, Minn. Stat. § 216B.1694, in its 2003 Special Legislative Session as part of the 2003 Omnibus Energy Bill.[11]

15. Minn. Stat. § 216B.1693 provides:

> **216B.1693 CLEAN ENERGY TECHNOLOGY.**
>
> (a) If the commission finds that a Clean Energy Technology is or is likely to be a least-cost resource, including the costs of ancillary services and other generation and transmission upgrades necessary, the utility that owns a nuclear generating facility shall supply at least two percent of the electric energy provided to retail customers from Clean Energy Technology.
>
> (b) Electric energy required by this section shall be supplied by the Innovative Energy Project defined in section 216B.1694, subdivision 1, unless the commission finds doing so contrary to the public interest.
>
> (c) For purposes of this section, "Clean Energy Technology" means a technology utilizing coal as a primary fuel in a highly efficient combined-cycle configuration with significantly reduced sulfur dioxide, nitrogen oxide, particulate, and mercury emissions from those of traditional technologies.
>
> (d) This section expires January 1, 2012.

16. Minn. Stat. § 216B.1694, provides:

> **216B.1694 INNOVATIVE ENERGY PROJECT.**
>
> Subdivision 1. **Definition**. For the purposes of this section, the term "innovative energy project" means a proposed energy-generation facility or group of facilities which may be located on up to three sites:

[10] Exhibits EE 1023 (public) and EE 1024 (non-public) are the December 2005 version of the PPA filed with the application. Some changes were proposed in Excelsior Energy's surrebuttal testimony, which appear in EE 1041 and EE 1063. Those changes, plus some others proposed by Excelsior Energy in its Reply Brief, were incorporated into a Final Proposed Power Purchase Agreement attached as Exhibit B (non-public) to the Reply Brief (the Final PPA or Ex. B). The Final PPA also declassified many items formerly claimed to be trade secret. Unless the context indicates otherwise, references in this report to "the PPA" are to the Final PPA. Power purchase agreements are also known as purchased power agreements.

[11] Act of May 29, 2003, ch. 11, art. 4, 2003 Minn. Laws 1st Spec. Sess. 1661.

(1) that makes use of an innovative generation technology utilizing coal as a primary fuel in a highly efficient combined-cycle configuration with significantly reduced sulfur dioxide, nitrogen oxide, particulate, and mercury emissions from those of traditional technologies;

(2) that the project developer or owner certifies is a project capable of offering a long-term supply contract at a hedged, predictable cost; and

(3) that is designated by the commissioner of the Iron Range Resources and Rehabilitation Board as a project that is located in the taconite tax relief area on a site that has substantial real property with adequate infrastructure to support new or expanded development and that has received prior financial and other support from the board.

Subd. 2. **Regulatory incentives**. (a) An innovative energy project: (1) is exempted from the requirements for a certificate of need under section 216B.243, for the generation facilities, and transmission infrastructure associated with the generation facilities, but is subject to all applicable environmental review and permitting procedures of chapter 216E;

(2) once permitted and constructed, is eligible to increase the capacity of the associated transmission facilities without additional state review upon filing notice with the commission;

(3) has the power of eminent domain, which shall be limited to the sites and routes approved by the Environmental Quality Board for the project facilities. The project shall be considered a utility as defined in section 216E.01, subdivision 10, for the limited purpose of section 216E.12. The project shall report any intent to exercise eminent domain authority to the board;

(4) shall qualify as a "clean energy technology" as defined in section 216B.1693;

(5) shall, prior to the approval by the commission of any arrangement to build or expand a fossil-fuel-fired generation facility, or to enter into an agreement to purchase capacity or energy from such a facility for a term exceeding five years, be considered as a supply option for the generation facility, and the commission shall ensure such consideration and take any action with respect to such supply proposal that it deems to be in the best interest of ratepayers;

(6) shall make a good faith effort to secure funding from the United States Department of Energy and the United States Department of Agriculture to conduct a demonstration project at the facility for either geologic or terrestrial carbon sequestration projects to achieve reductions in facility emissions or carbon dioxide;

(7) shall be entitled to enter into a contract with a public utility that owns a nuclear generation facility in the state to provide 450 megawatts of baseload capacity and energy under a long-term contract, subject to the approval of the terms and conditions of the contract by the commission. The commission may approve, disapprove, amend, or modify the contract in making its public interest determination, taking into consideration the project's economic development benefits to the state; the use of abundant domestic fuel sources; the stability of the price of the output from the project; the project's potential to contribute to a transition to hydrogen as a fuel resource; and the emission reductions achieved compared to other solid fuel baseload technologies; and

(8) shall be eligible for a grant from the renewable development account, subject to the approval of the entity administering that account, of $2,000,000 a year for five years for development and engineering costs, including those costs related to mercury-removal technology; thermal efficiency optimization and emission minimization; environmental impact statement preparation and licensing; development of hydrogen production capabilities; and fuel cell development and utilization.

(b) This subdivision does not apply to nor affect a proposal to add utility-owned resources that is pending on May 29, 2003, before the Public Utilities Commission or to competitive bid solicitations to provide capacity or energy that is scheduled to be on line by December 31, 2006.

Procedural History

17. Excelsior Energy, Inc., is an independent energy development company based in Minnetonka, Minnesota, that is incorporated under the laws of the State of Minnesota. Excelsior Energy, Inc., and its subsidiary, MEP-I LLC (jointly, Excelsior or Excelsior Energy), is proposing to license, construct, own, and operate the Mesaba Energy Project Unit I. Unit I is a solid fuel IGCC power plant located in northeastern Minnesota with an initial capacity installation of 603 MW(net). Unit II of the Mesaba Energy Project is an identical IGCC power plant planned to be built adjacent to Unit I in a second phase. Unless the context indicates otherwise, reference in this report to “the Project,” “Mesaba 1,” or “the Facility” is only to Unit I.

18. Northern States Power Company d/b/a Xcel Energy (NSP, Xcel Energy, or Xcel) is engaged primarily in the business of generating, transmitting, and distributing electrical power and energy in the states of Minnesota, Wisconsin, North Dakota and South Dakota. Xcel Energy owns the two nuclear generation facilities that currently exist in Minnesota. The Project is comparable in output to Xcel Energy’s Monticello

nuclear generating plant, which has an output of approximately 600 MW, or about ten percent of Xcel Energy's customers' electric energy requirements.[12]

19. As of 2002, Xcel Energy provided service to slightly more than half of Minnesota's almost two million non-farm residential electric customers. It served an even higher proportion of Minnesota's commercial electric customers.[13] Its Minnesota service areas cover a large portion of the southern half of Minnesota.

20. Beginning in late 2004 and throughout 2005, Excelsior discussed with Xcel Energy the potential terms and conditions of a Power Purchase Agreement to govern the sale of the output of the Project. Despite their efforts, consensus was not reached.

21. On December 27, 2005, Excelsior filed a Petition asking the Commission to open a contested case proceeding to:

a. approve, amend, or modify the terms and conditions of a proposed power purchase agreement that Excelsior has submitted to Xcel Energy under Minn. Stat. § 216B.1694;

b. determine that the coal-fueled Integrated Gasification Combined Cycle ("IGCC") power plant that Excelsior plans to construct in northern Minnesota is, or is likely to be, a least-cost resource, obligating Xcel Energy to use the plant's generation for at least two percent of the energy supplied to its retail customers, under Minn. Stat. § 216B.1693; and

c. determine that, under the terms of Minn. Stat. § 216B.1693, at least 13% of the energy supplied to Xcel Energy's retail customers should come from the IGCC plant by 2013.

22. The Commission issued an Order on April 25, 2006, which provided that the Commission has jurisdiction over Excelsior's petition under Minn. Stat. §§ 216B.1693 and 216B.1694 and referred the matter to the Office of Administrative Hearings for a contested case proceeding. The Commission also requested that its Executive Secretary ask the Minnesota Pollution Control Agency for its assistance in addressing the technical and environmental issues in this case.

23. In the Second Prehearing Order dated June 2, 2006, the ALJs directed that consideration of the whether at least 13 percent of the energy supplied to Xcel Energy's retail customers should come from the Units I and II by 2013 would be

[12] In the Matter of the Application of NSP for a CON for an IFSFI at its Monticello Generating Plant, *ALJ Findings of Fact, Conclusions of Law, and Recommendation*, Aug. 4, 2006, at Finding No. 26., Adopted by MPUC Oct. 23, 2006, PUC Dkt No CN-05-123, OAH Dkt. No. 12-2500-16407-2.
[13] Minn. Dept. of Commerce, *2002 Utility Data Book*, at 26 and 33. Available at http://www.state.mn.us/mn/externalDocs/Commerce/Utility_Data_Book,_1965-2000__030603120425_UtilityDataBook65thru02.pdf.

deferred until the second phase of the hearing process. The early stages of that phase are now under way.

24. On June 5, 2006, Commission Executive Secretary Burl W. Haar sent a letter to Commissioner Corrigan of the Minnesota Pollution Control Agency pursuant to the Commission's April 25, 2006 Order. The letter requested assistance in addressing the technical and environmental issues in this case, and specifically noted that one of the factors the Commission must consider under Minn. Stat. § 216B.1694 is the emission reductions achieved by the proposed IGCC plant compared to other solid fuel baseload technologies.

25. Xcel Industrial Intervenors (XLI) filed a Notice and Motion for Summary Judgment with the ALJs on September 18, 2006. XLI argued that no genuine issues of material fact exist and that, as a matter of law, the Commission cannot approve Excelsior's proposed PPA with Xcel Energy because the proposed PPA involves the sale of power well in excess of the 450 MW allowed by Minn. Stat. § 216B.1694, subd. 2(a)(7). XLI also argued that Excelsior has failed to offer evidence that its Clean Energy Technology is a "least-cost resource," within the meaning of Minn. Stat. § 216B.1693(a). On September 25, 2006, Excelsior filed a Response and Memorandum in Opposition to XLI's Motion for Summary Disposition. Excelsior argued that the provisions of the statutes are not inextricably linked as XLI contends, and that the 450 MW limitation in the IEP Statute is not a ceiling on either the size of the plant it may construct or on the amount of power it may generate at that plant. Excelsior further argued that the public interest determinations referred to in the IEP and CET Statutes are not one and the same but are separate and are to be conducted for separate purposes. Finally, Excelsior argued that whether Excelsior's proposed project demonstrates that Clean Energy Technology is a least-cost resource within the meaning of the CET Statute is not a prerequisite to Commission approval of its proposed PPA under the IEP Statute, and that whether IGCC technology is a least-cost resource within the meaning of the CET Statute involves genuine issues of material fact.

26. Also on September 25, 2006, MCGP filed a Motion for Partial Summary Judgment with the ALJs. MCGP argued that no genuine issues of material fact exist and that, as a matter of law, Excelsior's West Range Site does not meet the requirements of Minn. Stat. § 216B.1694, subd. 1(3), and that Excelsior is not entitled to a PPA based on a project constructed on the West Range Site. MCGP indicated that in order to meet the statutory definition of an Innovative Energy Project to be entitled to a PPA pursuant to said section, a project must be located "on a site that has substantial real property with adequate infrastructure to support new or expanded development." MCGP conceded that the IEP Statute requires the Commissioner of Iron Range Resources ("IRR") to designate sites that have adequate infrastructure, and that the IRR Commissioner has, in fact, designated the West Range Site as having adequate infrastructure. MCGP argued that the IRR Commissioner's designation of that site was erroneous or fraudulent, and therefore, as a matter of law, Excelsior cannot construct its project on that site. Excelsior filed a Memorandum in opposition to MCGP's motion. Excelsior argued that (1) the legislature delegated discretion to designate sites that would be suitable for an IEP project to the IRR Commissioner, and that said designation

is not subject to a collateral attack; (2) even if the IRR Commissioner's designation were reviewable in this proceeding, her exercise of discretion can only be reversed upon a showing that it was an abuse of discretion or was arbitrary or capricious; and (3) whether the West Range Site has adequate infrastructure to support new or expanded development involves disputed issues of fact. Xcel filed a memorandum in response to MCGP's motion on October 3, 2006. Xcel argued that whether Excelsior's project satisfies statutory requirements involved genuine issues of material fact that should be heard.

27. The ALJs heard argument on the motions on October 5, 2006. The Minnesota Chamber of Commerce and MCGP indicated support for XLI's Motion for Summary Disposition. The ALJs issued an Order on Motion for Summary Disposition on October 25, 2006. The Order's memorandum provided that the only proposal pending for a PPA is a proposal for the sale and purchase of 450 MW of baseload capacity. The Order also concluded that whether the Commission should approve that PPA does not directly involve consideration of whether Excelsior's IGCC technology is a least-cost resource, but does involve evaluation of the four specific factors set forth in Minn. Stat. § 216B.1694 subd. 2(a)(7), and other aspects of the public interest. The Order also concludes that the issue of whether Xcel Energy must purchase 153 MW (603 MW less 450 MW) from Excelsior pursuant to Minn. Stat. § 216B.1693 does involve a determination of whether Excelsior's IGCC technology is a least-cost resource. The ALJs determined that these considerations involve issues of fact, and therefore, XLI's Motion For Summary Disposition was denied.

28. The October 25, 2006, Order also denied MCGP's Motion for Partial Summary Disposition, concluding that as a matter of law the Commission lacks jurisdiction to determine whether the IRR Commissioner's designation of the West Range Site is erroneous or fraudulent. However, the ALJs did find that the infrastructure costs may be relevant to the Commission's determination under the CET Statute of whether Excelsior's IGCC technology is a least-cost resource.

29. At a November 16, 2006, prehearing conference, the parties stipulated to the admission of the pre-filed testimony and waived cross-examination of all witnesses for the evidentiary hearing, which had been scheduled to commence on November 20, 2006.

30. Public hearings were held on December 18, 2006, in St. Paul, on December 19, 2006, in Hoyt Lakes, and on December 20, 2006, in Taconite.

31. Excelsior Energy, Xcel Energy, and the Department all express a willingness to engage in further negotiations.

Innovative Energy Project, Minn. Stat. § 216B.1694, subd. 1

Innovative Generation Technology; subd. 1(1)

Use of Coal in an IGCC

32. Large scale IGCC plants the size of the Mesaba Project have not been built until recently, and the Project will include the most recent developments in efficiency and emission controls to make it state of the art. That alone does not make it innovative. What is new in the Project is the configuration. To produce 600 MW, it uses two gas combustion turbines, possibly because the maximum output of combustion turbines generators is less than 300MW. It provides the syngas from three gasifiers that are only slightly larger than the gasifier that has been operating at Wabash River, thus minimizing technical problems of upsizing the gasifiers while providing abundant capacity for producing the syngas required by the combustion turbines. It recovers heat energy from the two combustion turbines and the three gasifiers to create steam for a single steam turbine. This configuration is unique and innovative.

33. Minn. Stat. § 216B.1694, subd. 1(1), first requires a determination of whether the Mesaba Project uses "coal as a primary fuel in a highly efficient combined-cycle configuration." The Project does use solid fuel in a combined cycle configuration and that combined cycle is considered highly efficient. While the Project is intended to operate primarily on syngas that it creates from various forms of "solid fuel," it can use natural gas in the combined cycle power island as an alternative.[14] Thus, there is an issue of what percentage of the total operation will be on natural gas. There is also an issue not raised by the parties as to whether coal will be the primary fuel for the gasifiers.

34. The Final PPA does not expressly require the use of coal because it speaks in terms of using "solid fuel," not "coal," and never defines the term "solid fuel." It appears that all the parties and witnesses use "solid fuel" to mean any combustible fuel normally in a solid, not liquid or gaseous, state. They used it primarily to refer to coal of various types and grades, and petroleum coke. But there was also reference to municipal and industrial waste, biomass, and hydrocarbons in general being used to fuel gasifiers.

35. If the Project consistently used a 50% or greater petroleum coke blend over any particular period, it would not be using coal as its primary fuel during that period because petroleum coke is not coal. It is not derived from coal as is "coke." It is derived from petroleum.[15] The PPA, as currently drafted, places no express limitation on Excelsior Energy's ability to feed other non-coal "solid fuels" into the gasifiers.

[14] Final PPA, Section 3.5 and Appendix A.

[15] *See* International Union of Pure and Applied Chemistry, *Compendium of Chemical Terminology,* definition of petroleum coke; available at http://www.iupac.org/goldbook/P04522.pdf.

36. Excelsior Energy's preliminary fuel design studies investigated using 100% Illinois No. 6 bituminous coal and different blends of PRB subbituminous coal and petroleum coke, from 0% to 100% of each. The studies showed that the optimal cost of production would result from using the Illinois No. 6 or any of the PRB/petroleum coke blends up to 50% petroleum coke.[16] Based upon the studies, the feedstock design specifications proposed in the PPA include 100% PRB coal, a 50% blend of PRB coal and petroleum coke, and 100% Illinois No. 6 coal.[17]

37. The PPA requires Excelsior Energy to design its fuel procurement strategies to optimize the fuel costs of the Project, consistent with and subject to "Good Utility Practice" and performance parameters set forth in the PPA. Its determination is subject to review by a Fuel Subcommittee comprised of a representative each from Excelsior Energy and Xcel Energy, which must apply the same standards.[18] Nothing in the PPA requires them to ensure that the majority of the fuel for the gasifiers is coal. According to the Project Description, the cost of delivered PRB coal has been increasing since 1989, while the price of "PetCoke" has been declining.[19] Similarly, Excelsior's fuel expert Ralph Olson testified that there is likely a surplus of petroleum coke such that it will be an excellent low cost fuel allowing the Project to minimize fuel costs by using it as an alternative or a supplement to coal when market conditions dictate.[20] There is a real possibility that fuels consisting of 50 to 100 percent petroleum coke will become the best value. The PPA would not prevent Excelsior Energy and the Fuel Subcommittee from choosing such blends at that time. On the contrary, the PPA would require it.

38. Based on the foregoing, there is no assurance in the Final PPA that the Project will primarily use coal as a fuel as required by Minn. Stat. § 216B.1694, subd. 1(1), even when it is operating on solid fuel being gasified into syngas and then burning the syngas in the combustion turbines.

39. The parties focused on the ability of the Project to run on natural gas like a standard NGCC plant as creating the more significant issue as to whether coal would be the primary fuel. William Blazer of the Minnesota Chamber of Commerce expressed concern that the PPA does not require coal to be the primary fuel. He was not referring to the lack of definition of solid fuel, but to the terms of the PPA that allow operation in the NGCC mode without any guarantee that it would not be run in that mode extensively or exclusively.[21] Karen T. Hyde of Xcel Energy had similar concerns about the lack of control over use of natural gas.[22]

[16] EE 1020 at 109-110.
[17] Final PPA, Ex. G at 3.
[18] Final PPA, Sections 5.5 and 10.5(C).
[19] EE 1020 at 108, fig. 40.
[20] EE 1161 at 5.
[21] MCC 7000 at 7-8.
[22] XE 2005 (public) at 16-17.

40. To address this issue, Excelsior Energy has proposed terms in the PPA that impose financial penalties on it for using natural gas instead of solid fuel.

41. As proposed in the Final PPA, about two-thirds of the total monthly payment to be made by Xcel Energy is for "Contract Capacity," which is essentially a payment for the costs of designing and constructing the Project and having its output available to Xcel Energy and its customers. The tariff provisions in Article 8 of the Final PPA provide for reduced capacity payments for all hours during which natural gas or a natural gas-syngas blend is used, after a three-year ramp-up period.[23] Pursuant to those revised tariff provisions, for example, for all hours when the plant operates solely on natural gas, Excelsior would only receive 35% of the full capacity payment under the proposed PPA.[24] On a 50-50 blend of syngas and natural gas, Excelsior Energy would receive only 69.2% of the full capacity payment.[25]

42. The Capacity Price downward adjustment for use of natural gas in Section 8.1 of the PPA is on a sliding scale. The "Natural Gas Factor" (NGF) is 25% the first year, 40% the second, 50% the third, and 65% thereafter. The intent of the NGF is to reduce the credit given to energy produced from natural gas in calculating the Capacity Availability Factor. That reduction is designed to be the least in year one and the greatest in year four and thereafter. Therefore, the percentage of energy produced from natural gas is multiplied by 1-NGF. As discussed above, Excelsior Energy witness Renee Sass demonstrated that if, after the three-year ramp-up period, the Project ran 50% of the time on natural gas and 50% of the time on solid fuel-derived syngas during a month in which it had total availability of 91%, the Capacity Availability Factor would be 69.2% and Xcel Energy would be charged 69.2% of the capacity charge rather than 100%.[26] If that same calculation were made using the Natural Gas Factor and "Ramp Up Factor" for the first year of operation, the CAF would be 130.2% and Xcel Energy would be charged the maximum 110.0% of the capacity charge for that month. In the second year the CAF and charge would be 103.7% of the capacity charge. In the third year the CAF and charge would be 86.2% of the capacity charge.

43. This provision was designed to assure that Xcel Energy pays only an approximation of the capital costs of a natural gas facility to the extent that the Project operates solely using natural gas. The reduction in capacity payments to Excelsior for any hour during which the plant does not operate on 100% syngas creates a financial incentive to for Excelsior to maximize solid fuel operation.[27] However, because of the Ramp Up Factor, it does not become significant until the third year of operation. Moreover, Excelsior Energy and its ratepayers would still have to pay the full fuel payment, which would include payment for all the natural gas used.

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[23] Some of the original provisions in Article 8 of the proposed PPA (EE 1024) were revised in the Rebuttal Testimony of Thomas J. Osterhaas (*See* EE 1041) and the Surrebuttal testimony of Renee J. Sass (*See* EE 1062 and EE 1063).
[24] EE 1062 at 5 and EE 1063.
[25] EE 1062 at 6-7.
[26] EE 1062 at 6-7.
[27] EE 1062 at 5.

44. In addition, Section 11.1(B)(2) of the Final PPA provides that an "Event of Default" occurs if, after 48 months of operation, Excelsior Energy fails to maintain a capacity availability factor (CAF) of greater than seventy percent "on a twelve month rolling average basis."[28] It is not clear, but that could mean that it would take another twelve months to build up such an average. According to Excelsior Energy, in order to meet the seventy percent requirement, the Project must operate on syngas rather than solid fuel a majority of the time.[29] Since this would be a Section 11.1(B) event of default, Excelsior Energy would have 30 days to commence curing the default and would then be required to continue to work on the cure "diligently." It could take more than five years before the PPA could be terminated for not using solid fuel as the primary fuel. Moreover, if the Project always ran 51% on solid fuel and 49% on natural gas (rather than 50 - 50), application of Excelsior's revised formula would result in Xcel Energy paying in excess of 70% of the Capacity Price on a rolling 12-month basis, and therefore the right to terminate the proposed PPA would not be triggered. This provision provides little assurance that the Project will use not solid fuel, let alone coal, as its primary fuel.

45. As drafted, the Final PPA does not mandate the primary use of coal, as required by the IEP and CET Statutes. There are incentives in the Final PPA that encourage the use of solid fuel and penalize the use of natural gas, but they do not assure it. There is no requirement at all that the solid fuel be "coal." The PPA allows the Project a minimum of four years to achieve primary operation on solid fuel. Even if it required coal, four years is too long to meet the statutory requirement that coal be used as the primary fuel. Since there is no assurance in the PPA that the Project will use coal as a primary fuel as required by Minn. Stat. § 216B.1694, subd. 1(1), the Project does not meet the requirements of that clause.[30]

Degree of Emissions Reduction

46. Minn. Stat. § 216B.1694, subd. 1(1), also requires that the Project result in "significantly reduced sulfur dioxide, nitrogen oxide, particulate, and mercury emissions from those of traditional technologies." This emission reduction language in Minn. Stat. § 216B.1694, subd. 1(1), is similar to language in Minn. Stat. § 216B.1694, subd. 2(a)(7),—namely, "emission reductions achieved compared to other solid fuel baseload technologies." The legislative directives to make both inquiries are contained in the same statute and are aimed at accomplishing the same legislative purpose and goals. The two provisions must therefore be read *in pari materia*. Reading the two sets of

[28] EE 1024 at 37-38.
[29] *See* EE 1062 at 7.
[30] In light of the State goals of increasing the use of renewables and reducing the use of fossil fuels, it might be preferable if the PPA penalized the use of natural gas without rewarding the use of coal. That would allow Excelsior Energy to consider some portion of biomass, industrial waste, or municipal waste in it fuel mix for the gasifiers or the use of a synthesis gas produced by someone else mixed with its own syngas in its combustion turbines. For example, nearby paper mills may be able someday to produce combustible Dimethyl Ether (DME) by gasifying their pulping-process residue. *See* http://www1.eere.energy.gov/biomass/black_liquor_gasification.html. However, this approach might require a change to the IEP and CET Statutes.

requirements together, only "solid fuel baseload technologies" should then be considered in comparing the Project's emissions to those of "traditional technologies." Only traditional coal-fired plants meet this requirement.

47. SCPC and USC pulverized coal plants meet the definition of "traditional" solid fuel technology because they burn coal in a combustor to create steam that powers a steam turbine that powers a generator. Their technology uses much higher combustion and steam temperatures and pressures that increase efficiency and have other benefits, and they have several add-on technologies as well, but the basic process remains the same.

48. CFB plants burn a wide variety of solid fuels. The newest designs run a combustion turbine off the flue gas from the combustor and may include a gasifier section within the combustor to create additional "fuel gas" (a/k/a "syngas") for the combustion turbine. From the description by DOE quoted in Finding No. 5 above, it appears that an enhanced, second generation CFB plant is actually a form of IGCC and may meet the definition of an "innovative generation technology" under Minn. Stat. § 216B.1694, subd. 1(1). In any event, it would not be a "traditional technology" under that clause.

49. Excelsior, Xcel Energy, and the Minnesota Pollution Control Agency each submitted expert opinions and supporting evidence pertaining to comparative emission reductions. Each of their sets of comparisons compares the projected emissions of Excelsior's Project with other actual or hypothetical plants or projects. But all three of them, for the most part, used different hypothetical plants or projects for comparison and rely on somewhat different emission modeling approaches and parameters. It is therefore not possible to completely reconcile all three results with one another.

50. At Excelsior's request, ICF Consulting modeled the emissions that will likely be produced by the Project. ICF Consulting's emission estimates for the Project were derived from available data for the Wabash River IGCC plant in Terre Haute, Indiana, and from the Louisiana Technology, Inc., facility in Plaquemine, Louisiana. ICF Consulting also modeled emission estimates for a hypothetical Alternative SCPC plant for comparison.[31] Both models were developed using the REMSAD modeling system.[32] ICF Consulting's initial modeling showed the following emission rates (in tons per year for $S0_2$, NO_x, and PM_{10}. and in pounds per year for mercury):

[31] EE 1011 at 2-7.
[32] *Id*. at 2-1 and 2-2.

Emission	Project's IGCC Facility	Hypothetical Alternative SCPC Facility
SO_2	447	1,752
NO_x	1,227	1,538
PM_{10}	174	439
Mercury	17.92 lbs/yr.	24.61 lbs./yr.

51. Excelsior's initial emission modeling was based on a Project with generation capacity of 531 MW. Excelsior subsequently scaled the initial modeling to a Project with 606 MW generation capacity, which is approximately what Excelsior is now proposing. Excelsior has presented the following scaled up emission data in comparison with the emission rates presented in its Air Permit Application and in comparison with its hypothetical Alternative SCPC facility. (The data was presented as maximum long term hourly average rates in terms of pounds per hour):

Emission	Project's IGCC Facility	Air Permit Application	Hypothetical Alt. SCPC Facility
SO_2	123	128	431
NO_x	339	321	377
PM_{10}	48	51	108

52. Excelsior has compared its Project's sulfur dioxide emission rates with the sulfur dioxide emission rates of eight existing large coal-fueled generating plants in Minnesota. (All data is expressed as pounds per gross megawatt hour):[33]

Plant	SO_2 Emission Rate ($lbs./MWh_{gross}$)
Alan S. King (pre-MERP)	16.30
Alan S. King (post-MERP)	1.18
Black Dog	3.70
Boswell Energy Center	5.72
Hoot Lake	7.29
Sherburne County	3.24
Laskin Energy Center	5.15
Taconite Harbor Energy Ctr	7.57
The Project	*0.23*

53. Excelsior has also compared its Project's nitrogen oxides emission rates with the nitrogen oxides emission rates of eight existing large coal-fueled generating

[33] EE 1004 at 29. The source of data for existing plants is the USEPA's Clean Air Market Emission Tracking System.

plants in Minnesota. (Again, all data is expressed as pounds per gross megawatt hour):[34]

Plant	NO_x Emission Rate (lbs./MWh_{gross})
Alan S. King (pre-MERP)	7.65
Alan S. King (post-MERP)	0.99
Black Dog	8.24
Boswell Energy Center	3.73
Hoot Lake	4.76
Sherburne County	3.26
Laskin Energy Center	7.39
Taconite Harbor Energy Ctr	4.64
The Project	*0.54*

54. Excelsior also compared its Project's mercury emission rates with the mercury emission rates of eight existing large coal-fueled generating plants in Minnesota. (All data is expressed as pounds per gross trillion watt hour):[35]

Plant	Mercury Emission Rate (lbs./$TrillionWh_{gross}$)
Alan S. King (pre-MERP)	7.65
Alan S. King (post-MERP)	0.99
Black Dog	8.24
Boswell Energy Center	3.73
Hoot Lake	4.76
Sherburne County	3.26
Laskin Energy Center	7.39
Taconite Harbor Energy Ctr	4.64
The Project	*0.54*

55. No data on particulate matter emissions were available to Excelsior comparison with existing large coal-fueled generating plants in Minnesota.

56. Excelsior has also compared its SO_2, NO_x, and particulate matter emissions with what were, in its opinion, "the nation's cleanest coal plants" for reducing SO_2 emissions.[36] It arrived at the following comparison with the lowest permitted SO_2 emission rates on the RLBC database versus the worst case for the Project (expressed as pounds per million BTUs):

[34] *Id*.
[35] EE 1004 at 30. The source of data for existing plants is the USEPA's 2004 Form R report from its Toxic Release Inventory.
[36] Excelsior indicated that it selected the plants for comparison by conducting a review of the U.S. EPA's RACT/BACT/LAER clearinghouse (RBLC) and other government agency databases. Excelsior explains its methodology in EE 1004 at 30. In other evidence, Excelsior described the plants to which comparisons were made as "recently permitted SCPC facilities." *See* EE 1084 at 3.

Plant	SO_2	NO_x	PM
AES Puerto Rico	0.022	0.100	0.0300
Sevier Power Co. NEVCO	0.022	0.100	0.0154
MDU Gascoyne	0.038	0.090	0.0275
The Project (Worst Case)	*0.025*	*0.057*	*0.0100*[37]

57. Excelsior also compared its SO_2, NO_x, and particulate matter emissions with a different set of what were, in its opinion, "the nation's cleanest coal plants" for reducing NO_x emissions. It arrived at the following comparison of sources with the lowest permitted NO_x emission rates on RLBC versus the worst case for the Project (terms of pounds per million BTUs):

Plant	SO_2	NO_x	PM
Black Hills Corp	0.100	0.0100	0.0120
Bull Mountain	0.100	0.0030	0.0120
Mid-American CBEC4	0.100	0.0036	0.0250
The Project (Worst Case)	*0.025*	*0.0032*	*0.0100*[38]

58. Excelsior also compared its SO_2, NO_x, and particulate matter emissions with yet a third set of what were, in its opinion, "the nation's cleanest coal plants" for reducing PM emissions. It arrived at the following comparison of sources with the lowest permitted PM emission rates on RLBC versus the worst case for the Project (expressed as pounds per million BTUs):[39]

Plant	SO_2	NO_x	PM
JEA Northside	0.150	0.0900	0.0110
Black Hills Corp	0.100	0.0100	0.0120
Bull Mountain	0.100	0.0030	0.0120
The Project (Worst Case)	*0.025*	*0.0032*	*0.0100*

59. Excelsior also compared its SO_2, NO_x, and particulate matter emission rates with the estimated emission rates of the Big Stone Unit II facility. Comparisons were made in terms of pounds per hour:

Plant	SO_2	NO_x	PM
Big Stone II	551	386	165
The Project (Worst Case)	*148*	*324*	*57*[40]

60. Excelsior presented a bar graph comparing the Project's worst case annual mercury emissions compared with those of three recently permitted SCPC

[37] EE 1004 at 31.
[38] EE 1004 at 32.
[39] EE 1005 at 33.
[40] EE 1086 at 19.

plants. Emission rates were compared in terms of pounds per year. The exact quantitative emission rates for each of the facilities were not recorded on the bar graph. The approximate emission rates recorded on the graph were as follows: approximately 30 lbs. per year for the Project; approximately 200 lbs. per year for the NRG Cajun facility; permit limits of approximately 160 lbs. per year for the Mid American facility; and permit limits of approximately 50 lbs. per year for the Elm Road facility.[41]

61. Xcel presented data comparing the Project's SO_2, NO_x, and particulate matter emissions with newly proposed SCPC plants. It arrived at the following comparison of sources with the lowest emission rates versus the worst case for the Project (also expressed as pounds per million BTUs):[42]

Plant	SO_x	NO_x	PM
Calaveras Station	0.060	0.0500	0.0220
Desert Rock	0.060	0.0600	0.0200
Black Hills Corp	0.100	0.0700	0.0120
Bull Mountain	0.100	0.0700	0.0120
Mid-American CBEC4	0.100	0.0700	0.0250
The Project (Worst Case)	*0.025*	*0.0032*	*0.0100*

62. Xcel also presented the following data (also in terms of pounds per million BTUs) comparing the Project's emissions with a "Hypothetical SCPC" plant for purposes of comparison:[43]

Plant	SO_x	NO_x	PM
Hypothetical SCPC Plant	0.080	0.0700	0.0200
The Project (Worst Case)	*0.025*	*0.0032*	*0.0100*

63. It is the opinion of Michael G. Cashin, Minnesota Power's expert witness, that IGCC technology is slightly more favorable than modern pulverized coal plants in terms of reducing mercury, SO_2, and NO_x emission reductions. Mr. Cashin analyzed the data submitted by Excelsior as demonstrating comparisons with conventional coal plants of particulate removal approaching 99.9%, with modern pulverized coal plant demonstrating particulate removal approaching 99.8%. He also analyzed the data submitted by Excelsior as demonstrating NO_x reductions compared with conventional coal uncontrolled emissions at about 91%, with modern pulverized coal plant demonstrating NO_x reductions of 88%. Mr. Cashin further analyzed the Project's SO_2 emission reductions at 98% versus controlled conventional pulverized coal compared to modern pulverized coal at 94%. Finally, Mr. Cashin considered the mercury removal

[41] EE 1004 at 28.
[42] XE 2023 at 14-16.
[43] *Id*.

performance of IGCC as being about equivalent to the performance of conventional pulverized coal technology equipped with emerging mercury control technology.[44]

64. At the request of the Commission and the Department, the Minnesota Pollution Control Agency (MPCA) participated in this proceeding as a non-party consultant on matters relating to the Project's air emissions. Subsequently and at the Department's request, the MPCA prepared a report comparing of the Project's emissions with other IGCC and state-of-the-art coal-fired electric generating technologies.[45]

65. The MPCA report first compared the net thermal efficiency of the Project with that of the Wabash facility (another IGCC facility) and three pulverized coal facilities. Thermal efficiency is the measure of a facility's ability to efficiently extract heat from coal (or oil or gas) and convert it from thermal to mechanical and finally to electric energy. Increasing thermal efficiency means that more electrical power can be generated with the same amount of coal and, depending on the emission control technology, fewer emissions. In other words, a plant with a higher heat efficiency produces fewer emissions for each unit of electricity produced.[46]

66. The MPCA concluded that the thermal efficiency of the Project operating on subbituminous coal would be 36.3%. The Project's thermal efficiency would, therefore, be lower than the thermal efficiency of the Wabash IGCC plant (40% on bituminous coal) but higher than the thermal efficiency of the proposed Desert Rock SCPC plant (34.3%) and the SWEPCO Hempstead Co. plants (35.9%).[47] The MPCA also concluded that the thermal efficiency of the Project's plant was somewhat lower than what the EPA has modeled for the performance of "generic" IGCC plants (40%), SCPC plants (37.9%) and USC plants (41.9%).

67. The MPCA also compared the Project's SO_2, NO_x, and particulate matter emissions with three other existing facilities and with EPA's three types of future "generic" plants. The MPCA presented its comparisons as the percentages by which the other actual or hypothetic facilities varied from the Project's emissions.[48] The MPCA employed pounds per net megawatt hour as the unit of comparison.[49] In response to comments on its initial submission, the MPCA corrected some of its calculations in a December 5, 2006, submission.[50] Those calculations are incorporated here.

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[44] MP 4004 at 4-5.
[45] MPCA 8000.
[46] MPCA 8000 at 2.
[47] *Id*. at 3.
[48] In other words, the Project's emissions represented a baseline of "0," with the emissions of the other facilities expressed in terms of percentages greater or less than that baseline of 0.
[49] In one set of comparisons, Excelsior used pounds per *gross* megawatt hour as the unit of comparison. The MPCA considered pounds per *net* megawatt hour as the unit of comparison to be the better measure. See discussion in MPCA 8001.
[50] MPCA 8001.

Plant	NO_X	SO_2	PM
Wabash	+150%	+265%	+26%
Existing PC with BACT controls	+36%	+284%	+48%
Desert Rock SCPC	+12%	0.0030	+18%
SWEPCO Hempstead USC PC	+24%	+289%	+18%
EPA "generic" subbituminous SC	+1%	+139%	+28%
EPA "generic" subbituminous IGCC	-30%	-58%	-29%
EPA "generic" subbituminous USC	-9%	+233%	+16%

68. The MPCA also compared the Project's mercury emissions with three other existing facilities and with EPA's three types of future "generic" plants. Again, the MPCA presented its comparisons as percentages by which the other actual or hypothetic facilities varied from the Project's emissions. The MPCA employed of pounds per net megawatt hour as the unit of comparison:

Plant	Mercury
Existing PC with BACT controls	+10.918%
Desert Rock SCPC	+302.608%
SWEPCO Hempstead USC PC	-12.168%
EPA "generic" subbituminous SC	-12.952%
EPA "generic" subbituminous IGCC	-23.880%
EPA "generic" subbituminous USC	-20.951%

69. Because of the ease of removing sulfur from syngas prior to its combustion in a combustion turbine generator, IGCC plants, such as the Project, emit far less SO_2 than other traditional solid fuel baseload technologies.[51]

70. With regard to reducing SO_2, the Project is expected to underperform what the EPA estimates will be the future emission reduction performance of IGCC technology, while the Project is expected to significantly outperform EPA's estimates of what will be the future SO_2 emission reduction performance of SC and USC technologies with regard to SO_2. However, the Project is expected to only slightly outperform those technologies in terms of reducing PM emissions, and slightly underperform them in terms of reducing NO_X emissions.

71. Nitrogen oxide (NO_X) emissions are a function of both the nature of the generating technology and the efficiency of add-on control equipment.[52] The Wabash IGCC plant has much higher NO_X levels than the Project (150%) because it lacks specific NO_X controls. Other existing pulverized coal plants have only slightly higher NO_X levels than the Project will have, and EPA generic SC and USC plants have slightly lower levels.

[51] MPCA 8000 at 4.
[52] *Id*.

72. The particulate matter emissions of other traditional solid fuel baseload technologies (ranging from 18% to 73%) are generally higher than the Project's estimated particulate emissions.

73. IGCC technology is not inherently better at controlling mercury emissions than traditional solid fuel baseload technologies. Rather, the rate at which mercury is emitted during combustion depends primarily on the presence or absence of add-on mercury controls, with the state-of-the-art being activated carbon injection. The Project is being designed with activated carbon injection technology that will remove 90% of mercury emissions. Of the comparisons that MPCA made to existing pulverized coal plants, the Desert Rock plant's mercury emissions are expected to exceed those of the Project by over 300% because that plant is only proposing 80% mercury emission control and has not committed to activated carbon injection technology. On the other hand, the mercury controls at the SWEPCO Hempstead USC PC plant enable it to remove slightly more mercury than the Project is expected to remove.[53]

74. In summary, in comparison with traditional solid fuel baseload technologies, the Project's emissions of sulfur dioxide and particulates will be significantly reduced. Its nitrogen oxides and mercury emissions will be significantly reduced in comparison only with older existing coal-fueled plants, but not in comparison with newer, but still "traditional," SCPC coal plants with state-of-the-art controls.

75. Because the Project reduces sulfur dioxide and particulates so well, it can be said that, on an overall basis, it significantly reduces the listed emissions compared to traditional plants. However, the statute appears to require all the listed emission to be reduced. Since the Project does not significantly reduce emissions of two of the four pollutants required to be significantly reduced by Minn. Stat. § 216B.1694, subd. 1(1), it does not meet the requirements of that clause.

Certification as to Hedged, Predictable Cost; subd. 1(2)

76. Minn. Stat. § 216B.1694, subd. 1(2), requires that Excelsior Energy certify that the Project is "capable of offering a long-term supply contract at a hedged, predictable cost." Excelsior Energy has made that certification and claims that nothing more is required.[54] However, Minn. Stat. § 216B.1694, subd. 1(2), requires something different than an "official" designation, such as the one in Minn. Stat. § 216B.1694, subd. 1(3). Subd. 1(2) refers to a "certification" by a private party who is seeking a government benefit in a proceeding that is before the Commission under statutes that require the Commission to examine the terms of that contract and to consider the public interest. The IEP Statute must also be construed in a way that gives effect to all of its provisions.[55] Therefore, the Commission has the authority and duty to look beyond Excelsior's certification that it is "capable of offering a long-term supply contract at a hedged, predictable cost" in order to determine whether or not that is, in fact, the case.

[53] MPCA 8000
[54] EE1002.
[55] Minn. Stat. § 645.15 (2006).

77. Excelsior Energy claims that its proposed PPA offers a hedged, predictable, and stable price because (1) the capacity price is fixed over the life of the contract; (2) coal prices are stable; and (3) The Project's ability to run on a variety of fuels and its low emissions profile are inherent price hedges.[56]

78. The capacity price is the largest component of the total monthly payment that Xcel Energy will pay, about 68 percent of it.[57] It is based largely on the Engineering, Procurement, and Construction (EPC) contract cost. That is stated as a trade secret, forecasted, target cost in the proposed Final PPA, to be adjusted and fixed when the EPC contract is executed. It is likely to be larger by some unknown amount when it is fixed. The capacity price also includes unreimbursed transmission costs, which are relatively minor, but also not fixed at this point.[58] Overall, the capacity price is not hedged or predictable at this point. Excelsior Energy's position is that its "predictability" should be determined after the capacity price is fixed. Xcel Energy argues that it should be determined now.

79. Subd. 1(2) speaks in terms of being "capable" of offering a contract at a hedged, predictable cost. It does not require that a hedged and predictable cost be offered today. What must be judged today is the capability of doing so under the terms of the PPA. It is more usual for PPAs to include EPC-type costs up front, but Excelsior Energy has chosen to provide an estimate of EPC costs that will be fixed relatively soon. That process leaves some cost issues unresolved now, but does not make it impossible to eventually offer a contract at a hedged, predictable cost at a reasonable point in the future. The arguments of Xcel Energy, MCGP, the Department, and others about the potentially large, unpredictable increases in the EPC contract cost are more relevant to the issue of financial risks to ratepayers discussed below.

80. The monthly capacity payment under the PPA is stated as the capacity price, times the final certified capacity, times the lesser of the Capacity Availability Factor or 1.1. Since the capacity price and certified capacity will be fixed numbers, and 1.1 is a fixed number, this formula states a maximum price for the capacity payments. The CAF is approximately the percentage of the energy produced from syngas compared to total energy produced, subject to various adjustments. As that percentage goes down, the monthly capacity payment goes down.[59] Since the PPA sets a maximum price, the monthly capacity payment may be considered hedged and predictable. It will go down the first four years because of allowances in those early years, then remain flat for the remaining 21 years of the PPA.[60] If any further adjustments are made because of using natural gas, they would be reductions in the capacity payment.

[56] EE 1004 at 16-21.
[57] EE 1006, figs. 1 and 3.
[58] Final PPA, Section 8.1.
[59] Final PPA, Section 8.1.
[60] EE 1006, fig. 3.

81. The PPA also requires variable and fixed operating and maintenance payments. They are stated in fixed trade secret amounts per MWh and are indexed quarterly by the "implicit price deflator" for the gross domestic product (GDPIPD), a statistic published by the U.S. Department of Commerce. They are also subject to review and adjustment every five years by the Operating Committee, but Excelsior Energy has modified the Final PPA so that neither party may unilaterally adjust them. The variable and fixed O&M payments are projected by Excelsior Energy to start out at about 14 percent of Xcel Energy's total monthly payment and likely increase gradually because of the escalator.[61] By definition and from the point of view of a ratepayer, the GDPIPD is not predictable, so neither are the O&M payments. However, the impact of changes in the GDPIPD on the total monthly payment will not likely be very great.

82. The Final PPA provides that all the costs for fuel and fuel delivery during a month must be paid in a monthly fuel payment. The fuel payment also includes all revenues and expenses collected or paid for any "environmental attribute adjustments" and all revenues and expenses associated with the sale or disposal of any byproducts. Excelsior Energy estimates that fuel costs will start at about 18 percent of Xcel Energy's total monthly payment and likely increase gradually over the life of the PPA.[62]

83. There is no dispute that coal prices have historically been more stable than natural gas prices. PRB coal and Illinois Basis coal have generally tracked along similar lines, with PRB coal being somewhat less expensive. Petroleum coke is even lower priced and has trended gradually downward over the last 15 years, but there has been some upward pressure lately.[63] It can reasonably be expected that a generating plant running on coal will have more stable fuel costs than one running on natural gas.

84. Excelsior Energy claims that the monthly fuel payment it charges Xcel Energy will be capable of being offered at a hedged, predictable cost because Excelsior Energy will be able to obtain fuel at a hedged, predictable cost. According to its fuels expert, Ralph Olson, "Excelsior has taken prudent steps to ensure that it can implement an aggressive fuel supply plant and strategy by maximizing its alternatives" for coal and petroleum coke, and for fuel transportation. In addition, Olson notes that the Fuel Subcommittee provisions of the PPA will allow Xcel Energy to direct the optimization of the fuel flexibility of the Project and the alternative transportation options provided by the two railroads serving the Project.[64] Other things being equal, having options available may create opportunities for reduced prices. Having a fuel committee is not a particular advantage for the Project, even with Xcel Energy on it. It is to be expected that any power plant buying that much fuel will have experts on staff and advising it on fuel needs and buying strategies.

[61] EE 1006, figs. 1 and 3; Final PPA, Sections 8.2, 8.4, and 10.9. It is not clear in Section 8.4 whether the multiplier is Contract Energy or Contract Capacity.
[62] Final PPA, Section 8.3; EE 1006, figs. 1 and 3.
[63] EE 1020 at 108, fig. 40; XE 2022, Sched.3.
[64] EE 1161 at 2 and 8-15.

85. As defined by Xcel Energy's fuels expert Thomas C. Canter, "hedging" means insuring against unfavorable changes in price on one side by entering into counterbalancing arrangements on the other side. Simply having options available will not provide price certainty due to uncertainty of coal supply and transportation services that are provided only on the margin or incrementally to The Project.[65]

86. Excelsior Energy has no coal or petroleum coke supply or transportation commitments at this time to hedge against future cost increases, nor does it anticipate beginning to negotiate any for another three to four years. Until it develops a portfolio of fuel and transportation agreements, Excelsior Energy will have no hedge against future coal prices through an assured source for future fuel at a known price.[66]

87. When Excelsior Energy does start negotiating its agreements, it may have problems developing long-term commitments with fuel suppliers if it attempts to threaten switching to another supplier. There is already projected to be increasing demand for coal from all areas and the needs of a new buyer like the Project will add to that increasing demand. Fuel suppliers will need to expand to meet that need and will not rush to provide low prices. Likewise, there is projected to be a continuing shortage of rail capacity for the delivery of coal for the foreseeable future. The large coal producers and railroads have large market power, and consolidation in the PRB and Illinois Basin has increased that power. There is no evidence that there are significant changes in price differentials between PRB and Illinois coal that can be exploited by spot purchases. Thus, Excelsior Energy may have considerable difficulty obtaining fuel at favorable prices.[67]

88. Finally, the ability to operate the Project on natural gas provides no fuel price hedge or predictability because natural gas is more expensive than coal and subject to greater price swings. It will not be a particularly effective negotiating tool with coal suppliers because they will know the use of natural gas will necessarily be temporary and expensive, because of the statutory requirement to use primarily coal, and because of the market power of the coal suppliers.

89. In summary, because of the Project's large need for coal and the current and projected economies of coal production and coal transportation, it cannot be found that Excelsior Energy is capable of obtaining fuel for the Project at a favorable price. However, Excelsior Energy is certainly capable of negotiating a portfolio of agreements of varying terms so that its fuel costs would be hedged, and relatively predictable and stable.

90. Excelsior Energy proposed passing through "environmental attribute adjustments" and the revenues and expenses associated with the sale or disposal of any byproducts because it believes they both will eventually produce significant revenue to the Project. Xcel Energy commented that the cost pass throughs were unusual in

[65] XE 2022 at 4.
[66] EE 1208; XE 2021 at 7; XE 2022 at 3-4; MP 4006 at 12-13; MP 4013 at 12-13.
[67] XE 2021 at 3-8; XE 2022 at 5-10; MP 4006 at 11-13; MP 4013 at 10-17.

their extent and in that they would pass through Xcel Energy's fuel cost adjustment and, thus, be paid directly by its ratepayers. In response, Excelsior Energy has offered to modify the PPA so that it has responsibility for all costs and benefits of byproducts and environmental attributes associated with compliance with laws and regulations in effect on the date of signing of the PPA.[68]

91. Despite the fact that these costs and revenues would be added to the fuel payment and would make it quite variable, they should not be considered as part of the price predictability issue because it is logically a separate issue. If the Project has costs for meeting environmental requirements, they should be considered as part of the cost of the Project. They are included in the cost estimates below. If the Project realizes revenues from environmental credits, they should be applied to reduce the costs. Potential revenues from selling sulfur and other byproducts should be used to reduce costs as well, but it is only fair that any additional costs for such production be included as well. This pass through language should be retained, but with some provision allowing Xcel Energy to review the reasonableness of the expenditures.

92. Overall, about 80 percent of the total monthly payment will be at a fixed price with an escalator that will likely result in a gradual increase. That is not hedged, but it is predictable and roughly stable. About 20 percent of the monthly cost will be for fuel costs that are not likely to be hedged, predictable, or stable under Excelsior Energy's current plan to rely on short-term contracts. However, Excelsior Energy is capable of developing fuel and transportation contracts that will provide for hedged, predictable, and stable fuel costs. Therefore, the Project is capable of offering a long-term supply contract at a hedged, predictable cost as required by Minn. Stat. § 216B.1694, subd. 1(2).

Designation by IRRB Commissioner; subd. 1(3)

93. Minn. Stat. § 216B.1694, subd. 1(3), requires that the Project be designated by the Commissioner of the Iron Range Resources and Rehabilitation Board as a project that is located in the taconite tax relief area on a site that has substantial real property with adequate infrastructure to support new or expanded development and that has received prior financial and other support from the board.

94. The Commissioner has so designated both the East Range and the West Range sites. Therefore, the Project meets the requirements of Minn. Stat. § 216B.1694, subd. 1(3).

Qualification as an Innovative Energy Project

95. Since the Project fails to meet the requirements of Minn. Stat. § 216B.1694, subd. 1(1), it is not an "Innovative Energy Project" for purposes of Minn. Stat. § 216B.1694.

[68] XE 2005 at 22-23, EE 1039 at 27.

96. Minn. Stat. § 216B.1694, subd. 2(a)(4), provides that an Innovative Energy Project shall qualify as a "Clean Energy Technology" as defined in section 216B.1693. That definition is the same as the first requirement for an “Innovative Energy Project” under Minn. Stat. § 216B.1694, subd. 1(1). Therefore, by definition and this statute, if a project meets the requirements to be an “Innovative Energy Project,” it would also fulfill the definitional requirements of a “Clean Energy Technology.” Similarly, if a project does not meet the requirements of Subd. 1(1), it would not fulfill the definitional requirements of a “Clean Energy Technology” either.

97. Since the Project is not an Innovative Energy Project, it does not qualify under Minn. Stat. § 216B.1694, subd. 2(a)(4), as a "Clean Energy Technology" as defined in section 216B.1693. Also, for the same reasons the Project fails to meet the requirements of Minn. Stat. § 216B.1694, subd. 1(1), it fails to meet the definitional requirements of a “Clean Energy Technology” under Minn. Stat. § 216B.1693(c).

Entitlement to PPA, Minn. Stat. § 216B.1694, subd. 2(a)(7)

98. Again, Minn. Stat. § 216B.1694, subd. 2(a)(7), states that an Innovative Energy Project . . .

> shall be entitled to enter into a contract with Xcel to provide 450 megawatts of baseload capacity and energy under a long-term contract, subject to the approval of the terms and conditions of the contract by the commission. The commission may approve, disapprove, amend, or modify the contract *in making its public interest determination*, taking into consideration the project's economic development benefits to the state; the use of abundant domestic fuel sources; the stability of the price of the output from the project; the project's potential to contribute to a transition to hydrogen as a fuel resource; and the emission reductions achieved compared to other solid fuel baseload technologies. [Emphasis added.]

99. Since the Project is not an Innovative Energy Project, it is not entitled under Minn. Stat. § 216B.1694, subd. 2(a)(7), to enter into a contract with Xcel to provide baseload capacity and energy.

Evaluation of the PPA

100. The following findings shall apply if it is found and concluded by the Commission that the Project is entitled to enter into a contract with Xcel to provide baseload capacity and energy under a long-term contract, subject to the approval of the terms and conditions of the contract by the Commission.

101. Senator David J. Tomassoni from Senate District 5, a chief author of the IEP and CET Statutes, submitted comments to provide some background relating to the passage of the IGCC statutes. Senator Tomassoni explained that the statutes were enacted as part of the legislation, supported by Xcel Energy, authorizing additional cask storage at Prairie Island and new casks at the Monticello nuclear plant. The Iron Range delegation supported the proposed legislation authorizing the casks as part of a

package deal that included the IGCC statutes. In 2002-2003, Xcel began talking about a need for new coal base load plants, and the company told the Legislature that it needed 450 megawatts of new baseload in 2010, 450 in 2012, and 900 in 2015. According to Senator Tomassoni, the Legislature exempted the project from a certificate of need to expedite the construction of the plant and directed the PUC not to entertain Xcel's argument that the plant is not needed, which to him is essentially an argument that the growing electric need in Minnesota can be met by natural gas plants. Senator Tomassoni argues that the Legislature has already made the contentious policy decisions about big energy resources after weighing Xcel's arguments along with all other parties involved, and the IGCC statutes do not contemplate the PUC going back over those broad policy decisions that were considered and made by the State's elected officials. According to Senator Tomassoni:

> The IGCC statutes direct the PUC to confirm the benefits of the technology and, on the part of the statute that deals with the Clean Energy Technology, to confirm that the IGCC technology looks cost effective as one of a portfolio of technologies to meet the State's base load needs over the next century. As you can tell by reading the statutes, the Legislature expected that IGCC would look more expensive than conventional coal plants at the outset, but over time, improvements that will happen and changing emission limits would lead to the IGCC technology being more attractive in the long run.

102. Senator Tomassoni also noted that the Legislature was focused on the emissions reductions that could be achieved by the IGCC technology, especially mercury, particulate matter and sulfur emissions, and felt that the ability to capture and sequester carbon dioxide in the future was an added benefit. Senator Thomas Saxhaug from Senate District 3 also praised the Project and the new IGCC technology, as well as the economic benefit it would bring to the area.

103. Minn. Stat. § 216B.01, contains the Legislature's findings with regard to the Commission's regulation of public utilities and provides, in part:

> It is hereby declared to be in the public interest that public utilities be regulated as hereinafter provided in order to provide the retail consumers of natural gas and electric service in this state with adequate and reliable services at reasonable rates, consistent with the financial and economic requirements of public utilities and their need to construct facilities to provide such services or to otherwise obtain energy supplies, to avoid unnecessary duplication of facilities which increase the cost of service to the consumer and to minimize disputes between public utilities which may result in inconvenience or diminish efficiency in service to the consumers

104. Excelsior Energy is not a "public utility" under Chap 216B, so it is not regulated by the Commission and Minn. Stat. § 216B.01 does not apply to it. However, the statute's requirement to judge the public interest does apply to the PPA. Minn. Stat. § 216B.1694, subd. 2(a)(7), expressly invokes the Commission's statutory duty to

consider the impact the PPA will have on the broader public interest. And it does so in addition to listing five specific factors that relate to a contract for the electricity from the Project. To hold otherwise would render the phrase, "in making its public interest determination," in the statute superfluous. The subdivision must be read so as to give effect to all of its provisions.[69] In addition, the Commission's general responsibilities to regulate Xcel, Minnesota Power, and other utilities to the extent they are affected by the PPA, broaden the Commission's public interest determinations under the CET and IEP Statutes because of the very substantial impacts of the PPA upon those utilities and upon their many retail consumers in this state.

105. Moreover, in considering the impact of the PPA upon Xcel Energy's ratepayers, Minn. Stat. § 216B.03, requires the Commission to ensure that the rates are just and reasonable, to set rates to encourage energy conservation and renewable energy use, and to resolve any doubt as to reasonableness in favor of the consumer.

106. Dr. Eilon Amit of the Department analyzed several aspects of the PPA. In addition to the specified considerations listed in Minn. Stat. § 216B.1694, subd. 2(a)(7), he analyzed the public interest by applying the same criteria used by the Department to analyze all other PPAs for the Commission, namely:

a. Ratepayers must be appropriately protected from the operational risk associated with the PPA;

b. Ratepayers must be appropriately protected from the financial risks of the PPA; and

c. The purchase price to be paid by ratepayers for the electric energy and capacity must be reasonable.[70]

Dr. Amit also considered the indirect financial costs to ratepayers caused by the PPA's impacts on Xcel Energy's financial health, specifically, its credit rating, cost of long-term debt, cost of common equity, and overall cost of capital.[71] All these criteria are within the scope of Minn. Stat. §§ 216B.01 and 216B.03 and are applicable in this matter.

107. Xcel Energy witnesses John J. Reed and George E. Tyson, II, presented a similar list of criteria: (1) effect on customer rates, (2) reasonableness of terms in comparison to industry norms, (3) risks imposed on Xcel's customers, (4) effect on credit rating, (5) effects on costs of capital, and (6) resulting effects on costs of service.[72] Again, these criteria relate to providing consumers in this state with adequate and reliable services at reasonable rates, consistent with the financial and economic

[69] Minn. Stat. § 645.15 (2006); *See Owens v. Federated Mut. Implement & Hardware Ins*., 328 N.W.2d 162, 164 (Minn. 1983).
[70] DOC 3000 at 7-9.
[71] DOC 3014 at 15-20.
[72] EX 2017 at 3-4; XE 2010 at 2.

requirements of Xcel Energy. Thus, they are thus within the scope of Minn. Stat. §§ 216B.01 and 216B.03 and are applicable in this matter.

108. Because Excelsior Energy is not regulated by the Commission, the PPA is the only vehicle available to ensure performance of the Project and reasonableness of rates paid by Xcel Energy's ratepayers. In the PPA, the only mention of subsequent review by the Commission is a statement in the Fuel Subcommittee provision that the parties "acknowledge and agree that all fuel costs associated with the operation of the Facility will ultimately be subject to prudency review by the MPUC."[73] However, this reference appears to be only to Xcel Energy's Fuel Clause Adjustment and does not create any direct regulation by the Commission of the fuel mix used by the Project. In its latest revisions to the PPA, Excelsior Energy added a one-time Commission review that would be triggered if the final construction costs exceed the target construction cost estimate by a certain percentage.[74] Given the Commission's extremely limited oversight of Excelsior Energy and the PPA, it is necessary that all potential issues be addressed as completely as possible in the PPA before it is approved.

109. In sum, the IEP Statute does, as Senator Tomassoni suggested, direct the Commission to confirm the benefits of the technology and confirm that the PPA will be cost effective. In order to do so, it is necessary to evaluate the Project and the PPA considering:

> The Project's economic development benefits to the state;
>
> The Project's use of abundant domestic fuel sources;
>
> The stability of the price of the Project's output;
>
> The Project's potential to contribute to a transition to hydrogen as a fuel resource;
>
> The Project's emission reductions achieved compared to other solid fuel baseload technologies;
>
> The protection of ratepayers from operational risks associated with the PPA;
>
> The protection of ratepayers from financial risks associated with the PPA;
>
> The protection of ratepayers from indirect financial costs caused by the PPA's impact on Xcel Energy's financial health; and
>
> The reasonableness of the cost of the PPA.

[73] EE 1024, Section 10.5(C).
[74] Final PPA, Schedule I.

Economic Development Benefits to the State

110. James A. Skurla is the Acting Director of the Bureau of Business and Economic Research of the University of Minnesota-Duluth's Labovitz School of Business and Economics (hereafter Labovitz School). In September 2005, the Labovitz School produced a report entitled *The Economic Impact of Constructing and Operating an Integrated Gasification Combined-Cycle Power-Generation Facility on the Iron Range* (Labovitz School Report), at Excelsior's Request and under Mr. Skurla's direction.[75]

111. The Labovitz School Report yielded estimates of the numbers of jobs that the Project would both directly and indirectly create on the Iron Range and statewide, as well as the dollar value of economic activity that the Project would generate on the Iron Range and statewide.[76] It did so by employing the IMPLAN modeling system, using Excelsior's estimates of the values of direct expenditures for construction and operation of the Project, with a net output of 531 MW, as the original modeling inputs.[77] The Labovitz School Report estimated the following impacts of the Project on Minnesota's economically-depressed Iron Range and the state at large:[78]

a. $1.04 billion in direct spending on construction;

b. $300 million in direct spending on operations during a typical plant-year, recurring for the life of the plant;

c. An additional non-recurring $533 million in increased business and household spending across the Arrowhead region, which will ultimately result in a non-recurring $762 million in increased spending throughout the State, driven by spending on construction;

d. An additional recurring $66 million in increased spending across the Arrowhead region, which will ultimately result in a recurring $91 million in increased spending throughout the state, generated by spending on operations;

e. Over the course of the 42-month construction period, full-time, part-time and temporary construction jobs peak at almost 3,000;

f. A total of over 100 full-time, part-time and temporary jobs in operations;

g. An additional 1,682 new full-time, part-time and temporary jobs during the peak year in other sectors across the Arrowhead region, as a result of the creation of construction jobs; and

[75] EE 1107 (Skurla Supplemental Testimony); *see also* EE 1009 (Labovitz School Report).
[76] *Id*.
[77] EE 1009 at 4-5.
[78] *Id*. at iv.

h. An additional 290 new full and part-time jobs in other sectors across the region, caused by the creation of jobs in the typical year of operation.

112. In September 2006, the Bureau prepared an update to the Labovitz School Report (Updated Labovitz School Report) based on updated assumptions that Excelsior provided to the Labovitz School. Those updated assumptions were: (1) $1.6 billion in direct spending on construction; (2) $440 million of indirect spending on operations;[79] and a Project, with a net output of 603 MW. Based on those assumptions, the Updated Labovitz School Report estimated the following impacts of the Project on Minnesota's Iron Range and the state at large:[80]

a. $1.6 billion in direct spending on construction;

b. $440 million in direct spending on operations during a typical plant-year, recurring for the life of the plant;

c. An additional non-recurring $399 million in increased business and household spending across the Arrowhead region, which will ultimately result in a non-recurring $640 million in increased spending throughout the State, driven by spending on construction;

d. An additional recurring $95 million in increased spending across the Arrowhead region, which will ultimately result in a recurring $130 million in increased spending throughout the state, generated by spending on operations;

e. Over the course of the Mesaba One construction period 2008-2011, full-time, part-time and temporary construction jobs peak at almost 1,555;

f. A total of over 107 full-time, part-time and temporary jobs in operations;

g. An additional 1,966 new full-time, part-time and temporary jobs during the peak year in other sectors across the Arrowhead region, as a result of the creation of construction jobs; and

h. An additional 143 new full and part-time jobs in other sectors across the region, caused by the creation of jobs in the typical year of operation.

[79] *Id*.
[80] *The Economic Impact of Constructing and Operating an Integrated Gasification Combined-Cycle Power-Generation Facility on the Iron Range, UPDATE 2006: Mesaba One Impacts (Updated Labovitz School Report).* EE 1110.

113. The Labovitz School prepared estimates of the economic impact of the Project with a 531 MW capacity and with a 603 MW capacity, but did not prepare estimates of the economic impacts of a Project with a 450 MW capacity.[81]

114. It is the expert opinion of Timothy J. Sheesley, an economist employed by Xcel, that the Economic Report prepared by the Labovitz School used a standard model and normal modeling procedures to arrive at direct and indirect positive benefits. It was, however, his further opinion that in order to assess the full development impacts of the Project, a study must take a broader view, assess the impacts over a wider geographic area, and incorporate the effect that higher electric rates would have on the overall Minnesota economy. It was Mr. Sheesley's opinion that in order to do this, the Economic Report would also have to: (1) assess the net impact on Minnesotans by weighing the positive economic impacts to northeastern Minnesota against the negative economic impacts to the rest of the state; (2) compare the impacts of alternative large energy projects; (3) consider the offsetting negative impacts of higher electricity prices; and (4) consider the economic impact of the $2 billion capital investment on the overall economy. Mr. Sheesley did not offer any specific opinions about how those four factors might affect the Project's net economic development benefits.[82]

115. In terms of potential negative economic impact, if Xcel is required to purchase 450 MW from Excelsior under the proposed PPA and make corresponding adjustments to the least-cost mix set forth in its current integrated resource plan, Xcel's rate payers will have to bear rate increases totaling between $250 million to $365 million during the Project's first year of operation, resulting in electric rate increases for Xcel customers in the range of 5.9 to 9.6 percent. The monthly bill for an average residential customer would increase approximately $5.00 to $7.50 per month, and a representative commercial or industrial customer would experience increases ranging from approximately $2,700 to $3,900 per month. However, those estimated rate impacts would decline over time as other energy sources are added.[83]

116. There will be transmission service network upgrade costs that will be required for interconnection of the Project to Xcel's system. The majority of those costs will be borne by Xcel's customers, and Xcel included those costs when it estimated the customer rate increases that would occur if it becomes obligated to purchase 450 MW of power from Excelsior under the proposed PPA.[84]

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[81] The Updated Labovitz School Report also addressed the economic impact of Mesaba Unit II, which is not being considered in this Phase I of this proceeding.

[82] XE 2030 (Sheesley Direct Testimony).

[83] XE 2038 at 6-8.

[84] *See* XE 2038 at 4-5. It appears that Mark Hervey, Xcel's analyst, converts the transmission service network and interconnection costs that Xcel's rate payers will bear into an annual revenue requirement that is built into customer rates beyond the Project's first year of operation. However, it is not completely clear from the evidence whether this is the case or whether Xcel financial analyses recognize all of those transmission service network and interconnection costs during the Project's first year of operation.

117. Minnesota Power's customers will also have to bear a portion of the transmission service network upgrade costs that will be required for interconnection.[85]

118. The payments that Xcel will be making to Excelsior for purchases of capacity and energy during the life of the PPA will be treated by credit agencies as the equivalent of long-term debt and are likely to have a negative impact on Xcel's credit rating. This will, in turn, have a negative impact on Xcel's shareholders and rate payers because it is likely to increase its cost of common equity and cost of long-term debt.[86]

119. Syngas may have other potential industrial uses other than as a fuel for generating electrical power. The Project will include a spare gasifier for increasing output and as a back-up. It is possible that that other industries with potential to use syngas may wish to locate or relocate near the Project, and that Excelsior may be able to use its spare gasifier to produce or co-generate syngas for use as a fuel, such as a transportation fuel, for production of synthetic natural gas (SNG), or as feedstock for other industrial production processes.[87] However, these other potential industrial applications of syngas cannot be relied on to make cost-competitive a project that is not independently a cost-competitive producer of electrical power.[88] In other words, it is reasonable to expect realization of the economic benefits attributable to any excess syngas Excelsior may produce only if the Project can first be established as a cost-competitive producer of electrical power.

120. Citing recent rising natural gas prices and natural gas price instability,[89] Excelsior also claims as an economic benefit that the syngas it will be producing from coal will be a low-cost, fixed price alternative to natural gas for large industrial companies within the state. However, whether syngas will, in fact, be a lower-cost, fixed price alternative to natural gas for general industrial use has yet to be established. Excelsior currently has no plans to produce syngas that will not be used in generating electrical power beyond what might be available from operating its spare, back-up gasifier.

121. In addressing the Project's economic development benefits, Excelsior suggests that by contributing to a cleaner environment, the Project's "clean coal technology" will have a favorable impact on tourism, hunting, fishing, and other outdoor activities.[90] In terms of airborne pollutants, the Project will result in reductions in comparison with older conventional coal generating facilities and, to a lesser extent, in comparison with newer SCPC generating facilities. But the Project will not be replacing any existing such facilities and thereby result in a net reduction of air pollutants emissions. Rather, it will add to existing emissions of pollutants.

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[85] XE 2025 at 12.
[86] DOC 3017 at pp.15-20.
[87] EE 1005 at 3-5.
[88] *See* NAT'L COMM'N ON ENERGY POLICY, ENDING THE ENERGY STALEMATE: A BIPARTISAN STRATEGY TO MEET AMERICA'S ENERGY CHALLENGES, pp. 52-53, cited by Excelsior at EE 1005, n. 5 at 4.
[89] EE 1005 at 7-8.
[90] EE 1005 at 8.

122. The Department assessed whether the proposed Mesaba Project would meet Minnesota's overarching energy policy goal to create and maintain a reliable, low-cost and environmentally superior electricity system. The Department identified areas where the project appeared to have potential to provide benefits to Minnesota. Specifically, the Department noted that the project was proposed to address some reliability issues that could be involved with this kind of technology. The project could also potentially result in job creation in the Iron Range region.[91]

123. In Dr. Amit's opinion, the economic benefits to the Iron Range may largely represent a redistribution of benefits within the State rather than net incremental benefits to the State. Due to the low level of unemployment in Minnesota and the Arrowhead region, it is very likely that the new construction and operation jobs would largely represent a redistribution of labor rather than a significant net increase in jobs. Moreover, to meet the future demand for electricity in Minnesota, absent the Mesaba Project, an alternative baseload proposal sited in Minnesota is likely to produce economic development benefits to the State similar to those of Mesaba. For these reasons, Dr. Amit concluded that these overall economic benefits of the Mesaba Project would be insignificant.

124. The public expressed widely divergent views on the Project at the public hearings and in written comments. Most of those views correspond with either the views of Excelsior Energy or of Xcel Energy. People living and working in northeastern Minnesota are split on whether the Project should be built. Supporters generally emphasize the expected economic benefits to the region and themselves. Opponents generally emphasize the high cost to consumers and the negative environmental impacts on the region and on their enjoyment of their homes and chosen recreation areas. Most of the public relied on evidence of impacts that was largely addressed by the parties, and gave their views of the meanings to be attached to that evidence. A few made arguments about matters not at issue in this proceeding, such as the reasonableness of various statutory provisions. Generally, the comments showed genuine, informed, and well-reasoned opinions among the public.

125. Citizens Against the Mesaba Project (CAMP) is a group of concerned citizens opposing the construction of a coal gasification power plant on the Scenic Highway in Itasca County because: 1) the plant would degrade recreational lake country near the Scenic Highway, exacerbate global warming, and pollute the air and water; 2) huge quantities of diesel fuel will be burned to mine and transport coal, to generate electricity that is not needed and which requires hundreds of miles of new transmission lines to the Twin Cities and beyond; 3) a venture with a financial risk too high for the private sector to assume should not receive in excess of $50 million in public funding and $800 million in federal loan guarantees; 4) there are only 107 permanent jobs planned for this site, many of which require higher education and specialized training, and the few jobs available for local residents do not offset the enormous environmental and financial costs; and 5) electrical transmission lines,

[91] DOC 3011 at 7-10.

railroads, roads, and pipelines for water and natural gas should not be forced on private property owners through eminent domain granted for the benefit of a private corporation. CAMP was formed in approximately June 2005, when Excelsior's preferred site for its power plant changed from an abandoned mine site near Hoyt Lakes to a pine forest and wetland near the Scenic Highway. The group produced extensive, detailed comments in opposition to the Project.

126. Several members of the public from Grand Rapids and other communities in the area expressed concern about the increased railroad traffic through their towns that would result from coal being transported to the proposed plant for processing. Several area residents discussed how train traffic cuts off the access that emergency response teams have to other parts of town or other communities on the other side of the railroad tracks. They argued that the health and safety of their residents would be adversely affected by increased train traffic.

127. Other full-time and part-time residents of the area emphasized the large amount of money taken in by Itasca County due to tourism, and discussed how their property values and communities would be negatively affected by the increased amount of pollution generated by the proposed plant. One individual referred to studies showing a direct correlation between water clarity and lakeshore property values. Many people expressed specific concern for the health and beauty of the Canisteo mine pit lake.

128. Several cities in the vicinity of the proposed plant wrote in support of the PPA. City officials in Taconite, Hoyt Lakes, Calumet, and Nashwauk support the "much-needed economic development in an environmentally friendly manner" that the Project would bring to the area. These cities see a substantial addition to the tax base, 1000 construction jobs, and over 100 permanent jobs resulting from the Mesaba Project. The Grand Rapids Area Chamber of Commerce, the Itasca County Board of Commissioners, the Itasca Economic Development Corporation, Nashwauk Public Utilities, the Range Association of Municipalities and Schools, the Western Mesabi Mine Planning Board, and the St. Louis County Board all voiced similar comments in support of the Project. Several area businesses and business owners also expressed written support for the proposed project.

129. The local trade unions also support the Project for the same reasons stated above, including the Iron Workers Local Union No. 512, Plumbers Local 34, International Brotherhood of Electrical Workers Local No. 31, Building and General Laborers Local 1091, Plumbers and Fitters Local No. 589, International Union of Operating Engineers Local Nos. 49-49E, and Heat and Frost Insulators and Asbestos Workers Local 49.

130. In sum, there are economic development benefits to the State from the Project, especially to the nearby area. There are also negative economic development impacts from the increased costs that will be passed on to business and individual ratepayers and from the negative environmental consequences of the Project. Those impacts have not been quantified. Overall, the economic development benefits weigh in

favor of the Project. But they do not justify an unreasonable price for it electric capacity and energy.

The Use of Abundant Domestic Fuel Sources

131. Minn. Stat. § 216B.1694, subd. 2(a)(7), requires the Commission to consider the use of abundant domestic fuel sources. Coal is abundant in several areas of the United States, but not in Minnesota. The PRB coal Excelsior Energy intends to buy will come from the Powder River Basin in Montana and Wyoming and the Illinois No. 6 coal will come from the Illinois Basin in Illinois, Indiana, and Kentucky.[92]

132. The terms of the proposed PPA do not expressly prevent Excelsior Energy and the Fuel Subcommittee from modifying the feedstock design specifications to use non-domestic coal. That choice would depend upon coal type efficiency and delivered price.

133. Excelsior Energy intends to obtain petroleum coke primarily from Flint Hills Resources' Pine Bend Refinery in Cottage Grove, Minnesota.[93] The crude oil refined at Pine Bend, and from which the petroleum coke is produced, comes largely or entirely from Canada. Excelsior Energy fuels expert Ralph Olson points out that many of the heavy and medium crudes that U.S. cokers are now processing are from Canada.[94] The petroleum coke for the Project is not from an abundant domestic fuel source.

134. Excelsior Energy plans to obtain natural gas from the Great Lakes Pipeline or the Northern Natural Gas Pipeline.[95] Great Lakes Pipeline delivers natural gas from Canada. The natural gas obtained there is not from an abundant domestic fuel source.

135. Thus, the Project is planning to use primarily coal from abundant domestic sources. But, when it begins operation, significant amounts of its fuel will be natural gas that is not a fuel primarily from abundant domestic sources. Moreover, nothing in the PPA expressly requires fuel from abundant domestic sources and price considerations may require changes to other sources in the future.

The Stability of the Price of the Output from the Project

136. The issues here are addressed in the Findings regarding a hedged, predictable cost beginning at Finding No. 77 above. The PPA price provisions result in a price that is subject to some adjustments and variations. While the capacity payment, once set, and O&M payments are fairly stable, the monthly fuel payment will only be so if Excelsior Energy is able to develop a portfolio of fuel and transportation agreements that provide the necessary hedges to provide that stability. The Project has more fuel

[92] EE 1020 at 110-114 and figs. 41-43.
[93] EE 1020 at 114-115 and fig. 44.
[94] EE 1161 at 4-5.
[95] EE 1020 at 56.

flexibility than traditional coal plants, but that advantage is not particularly significant in light of the large market power possessed by the coal producers and railroads and the current and projected demand for coal and transportation. The Project and the PPA do not provide a significant price stability advantage that justifies a higher PPA price.

Potential to Contribute to Hydrogen as a Fuel

137. Minn. Stat. § 216B.1694, subd. 2(a)(7), directs the Commission to consider "the project's potential to contribute to a transition to hydrogen as a fuel resource" in making its public interest determination in connection with the PPA approval process.

138. Using hydrogen as a source of energy, particularly as a transportation fuel, is both a national and a state priority.[96]

139. According to Excelsior Energy witness Douglas Cortez, the Project's gasification technology is the only available process for converting coal to syngas, which then can be used as the primary raw material in a proven commercial technology for hydrogen production. Several gasification plants are under construction in China that will only produce hydrogen. Excelsior has no current plans to produce hydrogen, but it is technologically possible to modify its process to do so. As Mr. Cortez states,

> Although Mesaba Unit I is being designed for power generation, it is my understanding that the larger Mesaba Energy Project will encompass subsequent units that certainly could produce a large quantity of hydrogen that could potentially be the basis for a broader transition within society to using hydrogen as a fuel source.[97]

140. The hydrogen economy envisions storing energy in the form of hydrogen and then converting that hydrogen into electricity or mechanical energy when needed. That storage and conversion directly to electricity can be done by fuel cells. Fuel cells produce electricity chemically from hydrogen and the only byproduct is oxygen. Engines for vehicles and other uses can be designed to run on hydrogen and the exhaust is water vapor. Producing hydrogen is explained at one fuel cell industry site as follows:

> Almost all of the 40 million tons of hydrogen used worldwide today comes from natural gas though a process called reforming. Natural gas is made to react with steam, producing hydrogen and carbon dioxide. The hydrogen is then used to make ammonia for fertilizer, in refineries to make reformulated gasoline, and in the chemical, food and metals industries.

[96] NAT'L COMM'N ON ENERGY POLICY, ENDING THE ENERGY STALEMATE: A BIPARTISAN STRATEGY TO MEET AMERICA'S ENERGY CHALLENGES, pp. 51, cited by Excelsior at EE 1005, Section 1, n. 5 at 4.
[97] EE 1091 at 24-25

> This is the cheapest way to make hydrogen today and is likely the way we will make hydrogen for fuel cell vehicles in the near future. Hydrogen also can be made from coal in a similar process where the coal is reacted with steam. Either way, though, the process releases carbon dioxide, a gas tied to global warming.
>
> Carbon-free methods involve splitting water into its component parts of hydrogen (H2) and oxygen (O).
>
> Electrolysis uses an electric current to separate water into hydrogen and oxygen. The electric current has to itself be produced, and the easiest but least efficient way is via some fossil fuel. The holy grail of hydrogen is to use a renewable source like solar, wind, hydro, geothermal or biomass power to create the current, making the process pollution free and sustainable.[98]

141. Mr. Cortez says that if our country is to transition to a "hydrogen economy," fossil fuels, primarily coal, will need to be used.[99] Nonetheless, the goal of producing hydrogen without producing CO_2 is in Minnesota law. Minn. Stat. § 216B.1691, sets Renewable Energy Objectives for utilities to generate or procure electricity generated from the following renewable energy sources: solar, wind, small hydroelectric, hydrogen, or biomass. Under the statute, after January 1, 2010, hydrogen used to generate electricity will only count toward a utility's Renewable Energy Objectives if it is generated from solar, wind, small hydroelectric, hydrogen, or biomass.

142. The costs and possible revenues of producing hydrogen have not been given, but the Project has the capability to be modified to produce a large quantity of hydrogen directly from coal. Thus, the Project has the potential to contribute to a transition to hydrogen as a fuel resource. But that potential will only be consistent with State goals if the Project reduces its CO_2 emissions to an acceptable level.

Comparative Emission Reductions, Including CO_2

143. In evaluating the PPA, Minn. Stat. § 216B.1694, subd. 2(7)(a), requires the Commission to consider emission reductions compared to other solid fuel baseload technologies. The comparison to be made is not restricted to the four criteria emissions Minn. Stat. § 216B.1694, subd. 1(1). The net result is to broaden the comparison to include CO_2 emissions, which all parties agree should be considered to some extent.

144. As summarized at Finding 74 above, in comparison with traditional solid fuel baseload technologies, the Project's emissions of sulfur dioxide and particulates will be significantly reduced. Its nitrogen oxides and mercury emissions will be significantly

[98] www.fuelcellsworks.com/JustthebasicsonHydrogen.
[99] EE 1091 at 24.

reduced in comparison only with older existing coal-fueled plants, but not in comparison with newer, but still "traditional," SCPC coal plants with state-of-the-art controls.

145. The MPCA compared the Project's carbon dioxide emissions with three other existing facilities and with EPA's three types of future "generic" plants. Again, the MPCA presented its comparisons as percentages by which the other actual or hypothetic facilities varied from the Project's emissions. The MPCA employed pounds of CO_2 per million BTUs as the unit of comparison:[100]

Plant	CO_2
Wabash	-9.5%
Existing PC with BACT controls	+10.3%
Desert Rock SCPC	+2.8%
SWEPCO Hempstead USC PC	+0.5%
EPA "generic" subbituminous SC	-4.2%
EPA "generic" subbituminous IGCC	-17.0%
EPA "generic" subbituminous USC	-13.3%

146. The MPCA's analysis establishes that carbon dioxide emissions from other technologies are expected to be lower than the expected carbon dioxide emissions from the Project.

147. In its Reply Brief, Excelsior Energy added three representations and warranties to Section 14.1 of the Final PPA regarding CO_2. They are:

> (H) Seller agrees to allocate the final $2 million of its Renewable Development Fund award in 2009 exclusively to fund expenditures made to refine the Mesaba Energy Project Plan for Carbon Capture and Sequestration.
>
> (I) Seller shall make a good faith effort to use the Plan for Carbon Capture and Sequestration to create a competitive proposal in response to the Department of Energy's planned Phase III solicitation for a carbon capture and sequestration demonstration project at Unit 1 of the Mesaba Energy Project.
>
> (J) Seller agrees to continue to participate as a partner in the Plains CO_2 Reduction Partnership's Phase II study in an effort to identify the optimal CCS program for the Mesaba Energy Project.[101]

148. Clean Water Action, a citizen-based environmental group with a membership of 60,000 Minnesotans, submitted public comments in opposition to the PPA agreement. Clean Water Action works for transition away from coal and nuclear

[100] MPCA 8001, at 4-5.
[101] Ex. B (Final Proposed PPA), Section 14.1 (H)-(J).

generation toward cleaner, non-polluting sources of energy. Specifically, the group is disturbed by the fact that Excelsior is exempted from the Certificate of Need process and argues that the PPA should not be approved for a number of reasons. First, the group asserts that an increase in mercury emissions and other pollutants such as nitrogen oxide, particulate matter, and sulfur oxide are not in the public interest, and, in fact, cause acid rain, asthma, lung cancer, and cardiovascular issues, among other health conditions. Next, Clean Water Action asserts that there are other energy alternatives that are better for the environment and more reliable than coal. The group cites the Minnesota Wind Integration Study performed by and for the Minnesota Public Utilities Commission in December 2006, which concludes that "[t]he addition of wind generation to supply 15, 20, and 25% of Minnesota retail electric energy sales can be reliably accommodated by the electric power system." In addition, the Study concluded that "[t]he total integration operating cost for up to 25% wind energy delivered to Minnesota customers is less than $4.50 per MWh of wind generation." Finally, Clean Water Action contends that the PPA is not in the economic interest of the state because Xcel's rates are expected to increase 8-12% in the first year if the PPA is approved.

149. A group of 38 healthcare providers from Itasca County submitted an editorial piece to the Grand Rapids *Herald-Review* in opposition to the proposed PPA and representatives of the group testified at the public hearings.[102] The healthcare providers objected to the PPA based on the adverse health effects that would be caused by the environmental pollutants released from the Project's plants. Specifically, the group asserted that the Mesaba Energy Project would annually emit more than 440 tons of particulate matter, 1300 tons of sulfur, 2700 tons of nitrous oxides, 150 tons of volatile organic compounds, and up to 54 pounds of mercury. The group pointed to Excelsior's own data, which reveals a "measurable effect on air quality" up to 70-80 kilometers from the proposed plant. They claim the plant, by Excelsior's own data, would be responsible for 10.7 premature deaths in the United States each year with 24% of those in Minnesota, 100 people with asthma exacerbations, 791 "minor restricted activity days," and 18,313 lost work days due to illness attributed to the proposed power plant. As for the mercury emitted from the proposed plant, the group claims that the "mercury deposition impact zone" of the Project will increase the mercury levels in over 720 local lakes, affecting those eating fish caught in local lakes, particularly women of childbearing age and children. Finally, the group points to Excelsior's data predicting the cost of mortality attributable to the Project at $8.7 million per year in Minnesota and $84.9 million per year nationally. In conclusion, the Itasca County healthcare providers asked that the local business leaders and elected officials carefully consider the public health and environmental costs associated with the Mesaba Project.

150. Barry J. Hanson, author of *Energy Power Shift-Benefiting From Today's New Technologies*, raised the issue of "carbon taxes." He sites a recent survey of utility executives indicating that 85% of them think that within five years a serious penalty will be imposed by the government for putting fossil carbon into the atmosphere. Mr.

[102] Public Ex. 20 from the St. Paul public hearings on December 18, 2006.

Hanson argues that it would not be fair to push this expense onto ratepayers when cleaner alternative forms of energy are available.

151. The North Star Chapter of the Sierra Club, consisting of 24,000 members in Minnesota, also strongly objects to the proposed PPA. The Chapter is particularly concerned about Excelsior's failure to guarantee the use of carbon sequestration technology, the Project's unrealistic energy demand projections, the Project's failure to adopt the lower cost option of wind power, and the Project's environmental and economical siting costs. The North Star Chapter is most concerned that the Project is not required by the Legislature to obtain a Certificate of Need, which would require the Minnesota Public Utilities Commission to quantify the environmental costs of all means of power production while also reviewing "other external factors, including socioeconomic costs" of any proposed resource under Minn. Stat. § 216B.2422, subd. 3.

152. In summary, there is some evidence that CO_2 capture will be more possible with the IGCC technology used by the Project. The capture will theoretically be less difficult because it can be done in the syngas coming from the combustion of the coal in a gasifier. But there is some evidence that a similar process can be used on the flue gas coming from a CFB combustor, so, IGCC may have no great advantage in this regard. More importantly, Excelsior Energy does not plan to install the technology on the Project until it is required by law to do so. If and when it is, Excelsior Energy plans to install a system that removes 30% of the CO_2, and, if it is ever feasible, one that removes 90%. It is not known how those reduction levels will compare to retrofitted or other new coal-fired plants. Thus, the Project has little or no quantifiable advantage at this time over other coal burning plants and no advantage over baseload generators operating on renewables.

Ratepayer Protection from Operational Risks

153. As described by Dr. Amit, operational risks include a complete or partial shutdown of the Project or underperformance of the Project due to technical problems. Ratepayers must be assured that their payments will not be increased to pay for replacement energy and capacity in the event of a partial or complete shutdown, and ratepayers must be protected from the consequences if Xcel Energy does not meet its reserve requirements by relying on capacity that is not delivered.[103]

154. There are no limits in the PPA on the cost of fuel. The PPA requires Xcel Energy to pay for all fuel and fuel delivery costs. Excelsior Energy proposes recovering these costs directly from Xcel Energy customers through a Commission-approved variance to the fuel clause adjustment rules. Even if these costs are paid through the fuel clause and thus subject to prudence review, the PPA provides that Xcel Energy

[103] DOC 3000 at 9.

must pay all of Excelsior's fuel costs regardless of whether the Commission disallows of any of those costs.[104]

155. All risks associated with the availability and cost of fuel are shifted away from Excelsior. This arrangement might be reasonable with regard to solid fuel if it passed only prudent fuel costs on to Xcel Energy. But that is not the case here.

156. With regard to the use of natural gas, the Final PPA now places a penalty upon Excelsior Energy to give it an incentive to avoid using natural gas and reduce the cost to Xcel Energy. But Xcel Energy and its ratepayers would also pay significantly increased costs from the use of natural gas. Xcel Energy calculated that a 65% reduction of the current estimated Capacity Price would still result in a capacity payment roughly double what the capacity price is for typical gas-fired combined cycle plants.[105] That excess in the capacity payment may also be viewed as further increase to the already higher price of natural gas compared to solid fuel.

157. Under Section 8.1 of the Final PPA, the Ramp-Up Factor (RUF) is used to increase the Capacity Availability Factor, and, thus, the monthly capacity payment, particularly during the first three years of operation. The RUF is 65% during the first year of operation, 75% during the second, 85% during the third, and 96% thereafter. The RUF is divided into the preliminary availability factor that is determined by adding the proportion of total energy produced from syngas to a reduced proportion of the energy produced from natural gas. Dividing by 65% would be equivalent to a 54% bonus during the first year, 33% the second, 18% the third, and 4% thereafter. The RUF is applied regardless of actual availability. Excelsior Energy also modified the capacity payment formula in the Final PPA so that the Capacity Availability Factor can never exceed 110% of capacity, which was previously possible. After the third year, if the Project was running 100 % on solid fuel, the ongoing 96% RUF would compensate Excelsior Energy for a forecasted average of 4% in unplanned outages.[106]

158. No particular objection was made to the concept of four year ramp up period for the Project or to the numbers used for the factor, except as related to the use of natural gas. The capacity payment is the vehicle that Excelsior Energy has chosen for the downward adjustment for use of natural gas instead of solid fuel. As discussed in Findings No. 39 to 45, there is likely to be little, if any, penalty for use of natural gas for the first two or three years because of the RUF in the capacity price. The Natural Gas Factor, which is already "ramped-up" over the same time period, is diluted by the RUF. This is not consistent with Excelsior Energy's stated intent and shifts too much of the risk that the Project will not run on solid fuel to Xcel Energy and ratepayers.

159. The PPA provides for four types of Events of Default: non-curable under Section 11.1(A), 30-day curable under Section 11.1(B), one-year curable under Section 11.1(C), and 60/30-day curable under Section 11.1(D). The 30-day curable defaults

[104] Final PPA, Sections 8.3 and 10.5(C).
[105] XE 2006 at 17.
[106] Final PPA, Section 8.1; EE 1039 at 32; EE 1041 at 3; EE 1062 at 4; XE 2009 at 7.

require the payment of damages within 30 days or cure by performance that must be commenced within 30 days and diligently pursued for as long as it takes to cure the default. The one-year curable default, which is failure to achieve commercial operation within a year, allows one year to cure, plus an additional year if an independent engineer gives an opinion that commercial operation is reasonably achievable. The 60/30-day curable defaults require the payment of damages within 60 days or cure by performance that must be commenced within 30 days and diligently pursued for as long as it takes to cure the default. Section 11.2 allows the Facility Lender to step in and cure an Event of Default.

160. Section 11.5 allows the non-defaulting party to terminate the PPA if an Event of Default is not cured within the applicable cure period. Section 11.6 sets a limitation on Excelsior Energy's responsibility to pay damages upon such termination of $125/kW times the reference capacity. If the reference capacity ends up being 603 MW, damages would be limited to $75,375,000. No security is provided to ensure that this amount will be available to cover any damages that are incurred.

161. In Dr. Amit's opinion, the cure provisions are too general. There are no specific cures listed and they do not appropriately protect Xcel's ratepayers from operational risks.[107] He is correct. Moreover, the ability to commence and "diligently pursue" a cure is too open-ended and difficult to enforce. The default cures provide very limited protection to Xcel Energy and ratepayers.

162. Dr. Amit estimated if the PPA was terminated, replacement capacity and energy could cost $15/MWh more than under the PPA. For a year that would total about $71,505,000, almost as much as the damages limit.[108] Xcel Energy witness John J. Reed called the damages limit "far below an acceptable level and well outside the bounds of commercial reasonableness or industry norms."[109] The damages limitation is unreasonably low and is an unreasonable allocation of operational risks to Xcel Energy's ratepayers.

163. The default provisions of the PPA do not appropriately allocate operational risks of the PPA between Excelsior Energy and Xcel Energy and its ratepayers.

164. Under the Final PPA, the variable and fixed O&M costs will both be adjusted annually by the implicit price deflator for the gross domestic product and are also subject to change every five years. Therefore, Xcel Energy's ratepayers bear full responsibility for the inflation risk and for the risk of increased O&M costs every five years. This risk allocation is unreasonable because such open-ended provisions lack any financial incentive or discipline for Excelsior Energy to minimize variable and fixed

[107] DOC 3000 at 14.
[108] DOC 3010 at 14.
[109] XE 2017 at 16.

O&M costs and do not protect Xcel Energy's ratepayers from inappropriate expenditures. Excelsior Energy should bear an equal or greater share of this risk.[110]

165. The Final PPA shifts significant operational risks onto Xcel Energy and its ratepayers that should be borne by Excelsior Energy.

Ratepayer Protection from Financial Risks

166. Typically, the developer of a plant to be built for the sale of energy under a contract bears the risks for the successful completion of the project on time and on budget. The project developer bears these risks because it is the party that controls the activities related to the completion of the project on time and on budget, and therefore is in the best position to mitigate the risks through contracts with the EPC contractor, investors, equipment vendors, and other participants.[111]

167. In this case, Excelsior Energy is seeking approval of the Final PPA before the EPC cost for the Project is determined. The Final PPA states an estimated trade secret target EPC contract cost (TECC). The Final EPC Contract Cost (FECC) will be determined in negotiations with contractors. Neither the TECC nor the FECC were or are subject to any requirement for competitive bidding, price caps, or any prudency review by Xcel Energy, the Commission, or any other entity.[112]

168. Excelsior Energy added a provision to Schedule I of the Final PPA giving the Commission conditional limited power to review a cost increase in the FECC over the TECC. It states:

> [If the FECC exceeds the TECC by a certain percentage], then the MPUC must separately approve the adjustment to the Capacity Price, based on a determination that the adjustment is reasonable taking into account price escalations that have occurred in the construction markets since December 18, 2005, and taking into account the relative price increases that would have also impacted other solid-fuel baseload resources.

This is only a review of the increase in the cost from the TECC to the FECC to see if it is consistent with cost increases in the construction market over the same time period. It does not provide for any type of review of the cost of the Final EPC Contract or the reasonableness of cost increases in the construction market. It does not provide for any meaningful opportunity to halt the Project if the costs or cost increases are excessive. It does not provide any meaningful ratepayer protection from the risk of increases in the EPC contract price or the Capacity Payment.

[110] DOC 3014 at 12-13.
[111] XE 2017 at 7-8.
[112] Final PPA, Section 6.2, Ex. G, and Schedule I.

169. Excelsior's cost estimates for the TECC were made using third-quarter 2005 data. The costs for coal power plants have risen since that time. Big Stone II updated their third-quarter 2005 cost estimate for plant construction based on 2006 data and found an increased plant cost of approximately 25% per MWh.[113] It is likely that the Project's EPC cost will increase significantly.

170. The EPC contract is projected to be finalized by February 2008, but it could extend to February 2010 or 2012. The PPA provides that at that time, the final Capacity Price will be adjusted to include any increase in the cost of capital as reflected by the U.S. Treasury Index. Thus, the financing cost risk is shifted to ratepayers by making the interest rate component a flow through in the PPA.

171. As with any large development of this nature, there is a risk that Excelsior Energy may run into financial difficulties during the construction period or early years of operation leading to reorganization or liquidation. The proposed PPA does not have the protections typical in other PPAs for the protection of the buyer under these circumstances: Such protections include a security fund to allow the buyer a ready source of funds if such a default occurs; a subordinated lien on the facility to assist the buyer if the project becomes financially distressed; and step-in rights allowing the buyer to take over the plant if the developer fails to keep construction on track.[114] The risk of the Project's financial failure should be borne by Excelsior Energy, not Xcel Energy's ratepayers.

172. The Final PPA does not reasonably protect Xcel Energy's ratepayers from the financial risks of the PPA.

Impacts on Xcel Energy's Financial Health

173. The PPA will also create indirect costs for Xcel Energy. The indirect costs include costs that Xcel Energy will incur outside of the PPA and impacts upon Xcel Energy's financial health.[115]

174. The proposed PPA requires Xcel Energy to make monthly capacity payments for a 25-year period. Credit rating agencies consider such payments to be equivalent to long-term debt and adjust the company's credit rating to reflect such obligations. Investors adjust their risk valuation of the Company accordingly. For example, Standard and Poor's applies a 30 percent adjustment factor to Xcel Energy (i.e., 30 percent of Xcel Energy's Net Present Value obligations are converted into long-term debt). The PPA debt equivalent based on the S&P methodology is approximately $1.9 billion. Based on Xcel Energy's last rate case (Docket No. E002/GR-05-1428), its projected 2006 long-term debt is approximately $1.19 billion. Therefore, the imputed long-term debt from the PPA would double Xcel Energy's long-term debt obligations. In Dr. Amit's opinion, Xcel Energy's capital structure including the proposed PPA's

[113] DOC 3010 at 25.
[114] XE 2006 at 28; DOC 3010 at 17-18.
[115] DOC 3014 at 16.

imputed debt and resulting financial ratios, may result in a credit rating of BB for Xcel Energy. That is considered speculative and would have serious financial effects on Xcel Energy and its ratepayers. The lower credit rating and higher financial risk would also significantly increase Xcel Energy's cost of long-term debt, cost of common equity, and overall cost of capital.[116]

175. In the Department's analysis of Xcel Energy's 2004 resource plan, Docket No. E002/RP-04-1752, the Department concluded that Xcel Energy will need additional baseload of 375 MW in 2015 and 2017, respectively. For the years 2011 through 2014, the average price of the PPA is $110.80/MWh.[117] This price is significantly higher than the projected price of energy and capacity that may be displaced by the PPA's contracted energy and capacity according to Xcel Energy's IRP information. Therefore, for the years 2011 through 2014, the PPA would impose extra costs on Xcel's ratepayers as they will start paying for energy at a high price even though they do not need the energy until 2015. This cost would be at least an additional $30.80/MWh over the period 2011-2014.[118]

176. A significant number of retired Minnesota natives residing all around the state and living on fixed incomes objected to the proposed PPA. Many of these individuals are Xcel Energy shareholders who count on dividends from these holdings to pay their monthly bills. They expressed concern that the proposed PPA between Excelsior and Xcel would decrease the dividends from their Xcel stock holdings and increase the rates on their energy bills. Many of these individuals did not think it was fair to force Xcel to sign an agreement for power that the company claims it does not need.

177. The Minnesota Utility Investors (MUI), a grassroots organization of almost 27,000 utility shareholders, submitted materials in opposition to the proposed PPA. MUI members have two roles in Minnesota's energy market, as investors in utilities and as consumers of electricity and natural gas. Many of the members are retirees living on a fixed income and relying upon the utility dividends to supplement their livelihood, as discussed above. MUI argues that Xcel does not need the amount of power required by the proposed PPA and that Xcel recently announced their plan to backup their baseload need of 375 MW by 2015 with wind energy and hydro power from Manitoba Hydro. MUI also contends that any positive economic impact that the proposed PPA has on the Iron Range will be outweighed by the negative effect (increased power rates) on the rest of the state. The group further claims that any environmental benefits of the IGCC technology are negligible when compared to modern super critical pulverized coal performance; the group also points out that the Project does not include a plan to capture carbon dioxide. Another concern of MUI is the transmission of the power generated by the Project from the Range to the place it will be utilized. MUI members are concerned that they, as shareholders in local power companies, will be responsible

[116] DOC 3014 at 18-19.
[117] DOC 3010 at 29-30.
[118] DOC 3000 at 30.

for the cost of the upgrades necessary to facilitate the transmission of the power from one place to another. In addition, MUI is concerned about the size of the proposed plant and that a 600 MW plant has never been built in the United States. MUI members worry that Xcel's credit rating will be damaged by the scope and size of the proposed Project, thereby reducing the value of the company.

178. The PPA would have significant negative affect upon Xcel Energy's financial health.

Reasonableness of the Cost of the PPA

179. The reasonableness of the cost of the PPA can be ascertained by comparing the PPA costs to alternative baseload facilities of similar sizes. If the prices of the PPA are lower or similar to the prices of energy and capacity of the alternative baseload facilities one can conclude that the PPA's prices are reasonable.[119]

180. Department witness Eilon Amit compared the prices the PPA with those of Big Stone II, Comanche Unit 3 (an Xcel Energy plant in Colorado), and Sherco 4.[120] Dr. Amit calculated the average annual and levelized prices of the PPA for Excelsior's two alternative sites.

Table 1: Cost (Price) Comparison Including Emission Costs, Excluding Transmission Costs

Alternative	Average Annual Price ($/MWh)	Levelized Price ($/MWh)
Excelsior		
West Site (603 MW)	$104.33	$ 96.04
East Site (598 MW)	$114.25	$104.91
Big Stone II Supercritical	$ 81.91	$ 73.02
Sherco 4 Supercritical	$ 74.90	$ 72.54[121]

Dr. Amit also calculated the prices for a 450 MW PPA at both sites in case the Commission determines that value in the IEP Statute is mandatory and cannot be modified by the Commission. Those prices are about 25 percent higher than the prices shown for full capacity PPAs at the two possible sites.

181. Before the MISO had determined what transmission upgrades would be required to connect the Project to the transmission grid, Dr. Amit made following estimates of the PPA's costs including transmission:

[119] DOC 3000 at 21.
[120] DOC 3000 at 21-27; DOC 3018 at 3; DOC 3020.
[121] DOC 3023 at 3. The Comanche 3 estimated price is trade secret and has not been restated here. It is available in the nonpublic versions of the cited exhibits. It is not greater than the Big Stone II price.

Table 1: Cost (Price) Comparison Including Emission and Transmission Costs

Alternatives	Levelized Price With Emissions, No Transmission Cost $/MWh	Levelized Transmission $/MWh	Total Levelized Costs $/MWh
Excelsior Energy			
West Site (603 MW)	96.04	9.21	105.25
East Site (598 MW)	104.91	9.21	114.12
Big Stone II	73.02	2.74	75.76
Sherco 4	72.54	2.79	75.33[122]

182. Subsequently, Excelsior Energy was allowed to file a determination from the MISO that fewer transmission upgrades would be necessary to connect either site to the transmission grid than originally anticipated, reducing the estimated cost from $180 million to $50 million, in 2006 dollars. Based upon this new information, Dr. Amit revised his levelized transmission cost figures from $9.21/MWh down to $2.58/MWh.[123] That change reduces his total levelized cost estimates for the West and East Sites. It would cause Table 1 to be revised as follows:

Table 2: Cost (Price) Comparison Including Emission and Transmission Costs

Alternatives	Levelized Price With Emissions, No Transmission Cost $/MWh	Levelized Transmission $/MWh	Total Levelized Costs $/MWh
Excelsior Energy			
West Site (603 MW)	96.04	2.58	98.62
East Site (598 MW)	104.91	2.58	107.49
Big Stone II	73.02	2.74	75.76
Sherco 4	72.54	2.79	75.33[124]

183. The levelized costs calculated by Dr. Amit provide a reasonable basis for comparison. They demonstrate that a PPA for the Project's preferred West Site would cost Xcel Energy and its ratepayers about 30 percent more than capacity and electricity from other comparable sources.

184. Excelsior Energy plans to configure Units I and II to allow for the installation of additional equipment that can capture up to 30% of the potential carbon in its selected feedstock possibly as early as 2014, with the possibility of adding a longer term option later for up to 90% removal, if and when DOE demonstrates such the feasibility of such removal. However, it would install the additional equipment only if it is required by law. Excelsior Energy would expect the Final PPA to be amended to allow it to be compensated at a reasonable cost of capital for its investments and to be made whole on all other costs associated with the its carbon capture and sequestration plan (CCS Plan).[125]

185. Based on information provided by Excelsior and analyzed by the Department, the cost of equipment needed to capture some CO_2 at the Project is

[122] DOC 3018 at 3, corrected in DOC 3024 at 1.
[123] DOC Reply Brief at 23-24.
[124] The DOC Reply Brief computed different numbers than shown in this table.
[125] EE 1067 at 1-2.

approximately $472.3 million in 2011 dollars. The cost of a pipeline necessary to transport captured CO_2 from the plant to depleted petroleum wells in Alberta, Canada, where it could possibly be used to enhance additional oil production and be stored, is approximately $635.4 million in 2011 dollars. Therefore, the total estimated cost to capture and sequester CO_2 would be $1.1077 billion in 2011 dollars.[126] From that data, Dr. Amit estimated the levelized cost of the additional equipment needed to capture CO_2 and the pipeline to transport it to the nearest site for geological storage at an additional $50.02 MWh for either of the proposed sites.

186. As Dr. Amit states, "After accounting for transmission costs, AFUDC costs and sequestration costs, the least cost of Excelsior plants (West Site 603 MW) is significantly more expensive than any of the alternative baseload plants."[127] If anything, the cost estimates for the Project are low; they will quite likely exceed the cost of comparable sources by even more than 30 percent.

187. An additional cost associated with carbon capture is the reduced operational efficiency of the Project. Excelsior Energy suggests that capture of 30% of the carbon produced by the Project will result in at least a ten percent loss of plant efficiency.[128] Thus, the revised cost of the Project with carbon capture ability would be divided over significantly lower capacity and output, resulting in significantly greater payments by Xcel Energy and its ratepayers for the energy provided.

188. In light of the foregoing, the Final PPA is not in the public interest as required by Minn. Stat. § 216B.1694, subd. 2(a)(7). Because the major defect in the PPA is the unreasonableness of the price charged to Xcel Energy, it is not possible to amend the PPA to make it reasonable. It is very unlikely that Excelsior Energy can agree to a lower price.

The CET Statute, Minn. Stat. § 216B.1693

189. Again, Minn. Stat. § 216B.1693, provides that if the Commission finds that a Clean Energy Technology is or is likely to be a least-cost resource, Xcel Energy must supply at least two percent of the electric energy it provides to retail customers from Clean Energy Technology. It also provides that such electric energy must be supplied by the Innovative Energy Project defined in Minn. Stat. § 216B.1694, subd. 1, unless the Commission finds doing so contrary to the public interest.

190. Two percent of the electric energy Xcel Energy provides to retail customers today may be about 180 MW.[129]

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[126] DOC 3014 at 21.
[127] DOC 3018 at 3.
[128] EE 1091 at 20; MCGP 5000 at 8.
[129] Xcel Energy's Proposed Findings of Fact, Finding No. 13. There appears to have been no evidence tendered as to what two percent of Xcel's retail load is. Xcel Energy's Proposed Findings state that it is 180 MW, without citation. Administrative notice has been taken that the Monticello Generating Plant has a capacity of 600 MW, which is about ten percent of Xcel's retail load. See Finding No. 18. If that is
(Footnote Continued on Next Page)

191. Minn. Stat. § 216B.1693 expires January 1, 2012. That would be about the time the Project comes on line. No party has raised an issue regarding the expiration of the statute and we do not address it here.

192. "Clean Energy Technology" is defined in Minn. Stat. § 216B.1693(c). As found in Finding No. 96, the three-part test in Minn. Stat. § 216B.1693(c) is identical to the three-part test in Minn. Stat. § 216B.1694, subd. 1(1), which comprises one of the three requirements to be an Innovative Energy Project.

193. As found in Findings Nos. 33 to 75 and 97, the Project does not, in comparison to traditional coal technologies, significantly reduce emissions of two of the four pollutants required to be significantly reduced by Minn. Stat. § 216B.1693(c). Therefore, the Project and the technology it uses do not meet the requirements of Stat. § 216B.1693(c) to be considered a "Clean Energy Technology."

194. If it is determined that the Project and the technology it uses meet the requirements of Stat. § 216B.1693(c) to be considered a "Clean Energy Technology," the following Findings apply.

195. Excelsior is only proposing that 450 MW of its proposed PPA be reviewed under Minn. Stat.§ 216B.1694. It proposes that the proposed PPA's other 153 MW (West Range Site) or 148 MW (East Range Site) be reviewed and approved pursuant to Minn. Stat. § 216B.1693, the Clean Energy Technology statute.[130] It is most appropriate to determine cost and pricing on a per Megawatt-hour basis. In order to do so, the costs of the Project should be determined on the total cost and total output of the Project.

196. As found above beginning at Finding No. 179, the costs of the PPA for either proposed site are much higher than the costs for comparable alternatives. Therefore, the Project and its technology are not a least-cost resource within the meaning of Minn. Stat. § 216B.1693.

197. Based on its analyses and the entire record, the Department concluded that the PPA as proposed is not likely to be a least-cost resource and is not in the best interests of the public as required by Minn. Stat. § 216B.1693. The Department is correct.

198. All findings of fact more appropriately construed as conclusions of law are adopted as such and all conclusions of law more appropriately construed as findings of fact are adopted as such.

(Footnote Continued From Previous Page)

correct, two percent would be about 120 MW. Excelsior Energy is seeking approximately 153 MW under the CET Statute, apparently because that is its design capacity, 603 MW, less the 450 MW it is seeking under the IEP statute.

[130] Order on Motion for Summary Disposition of Xcel Industrial Intervenors at 7.

Based on these Findings of Fact, and for reasons set forth in the following Memorandum, the Administrative Law Judges make the following:

CONCLUSIONS OF LAW

1. The Minnesota Public Utilities Commission and the Administrative Law Judges have jurisdiction over this matter pursuant to Minn. Stat. §§ 216B.08, 216B.1693, 216B.1694, and 14.50, Minn. R. 1400.5100-.8400, and to the extent not superseded by those rules, Minn. R. 7829.0100-.3200.

2. The Commission gave proper notice of the hearing in this matter, has fulfilled all relevant substantive and procedural requirements of law or rule, and has the authority to take the action proposed.

3. The IEP Statute permits the Commission to amend or modify the initial PPA to raise or lower the amount of the Project's statutory power sale entitlement.

4. The Project does not satisfy the first prong of the definition of an Innovative Energy Project under Minn. Stat. § 216B.1694, subd. 1(1), because the Final PPA does not assure that coal will be used as the primary fuel and because it has not been established that the Project significantly reduces all of the statutorily identified emissions in comparison to traditional technologies.

5. The Project satisfies the second prong of definition of an Innovative Energy Project under Minn. Stat. § 216B.1694, subd. 1(2), because it is capable of offering a long-term supply contract at a hedged, predictable cost.

6. Since the Project fails to meet the requirements of Minn. Stat. § 216B.1694, subd. 1(1), it is not an "Innovative Energy Project" for purposes of Minn. Stat. § 216B.1694.

7. Since the Project is not an Innovative Energy Project, it does not qualify under Minn. Stat. § 216B.1694, subd. 2(a)(4), as a "Clean Energy Technology" as defined in section 216B.1693.

8. The Final PPA is not in the public interest as required by Minn. Stat. § 216B.1694, subd. 2(a)(7).

9. The Final PPA should not be approved, primarily because of its unreasonable cost to Xcel Energy and its ratepayers, the likelihood that its cost will increase, not decrease over time, and because of the other deficiencies identified in the Findings. While Excelsior Energy and its witnesses have claimed that the PPA cost will become more reasonable in the future, particularly in light of the Project's environmental benefits, there is not sufficient evidence of that value to overcome the very significant cost difference that exists today.

10. The Project and its technology do not meet the definition of a Clean Energy Technology under Minn. Stat. §216B.1693(c) because they do not significantly reduce all the statutorily identified emissions in comparison to traditional technologies.

11. The Project and its technology do not satisfy the requirements of Minn. Stat. § 216B.1693(a) because the Final PPA is not, and is not likely to be, a least cost resource including the costs of ancillary services and other necessary generation and transmission upgrades.

12. It would be contrary to the public interest for the Project to supply at least two percent of Xcel Energy's retail load starting in 2012.

Based on the foregoing Conclusions, and for reasons set forth in the following Memorandum, the Administrative Law Judges make the following:

RECOMMENDATION

IT IS HEREBY RESPECTFULLY RECOMMENDED that the Public Utilities Commission order:

1. That Excelsior Energy's Petition asking the Commission to approve, amend, or modify the terms and conditions of the Final PPA under Minn. Stat. § 216B.1694 be **DENIED** and that the Final PPA be **DISAPPROVED**.

2. That if the Commission approves the Final PPA, that it first be amended through negotiations among Excelsior Energy, Xcel Energy, and the Department to address the deficiencies identified in this Report, then returned to the Commission for final approval.

3. That Excelsior Energy's Petition asking the Commission to determine under Minn. Stat. § 216B.1693 that the Project and its IGCC technology is, or is likely to be, a least-cost resource, thus obligating Xcel Energy to use the plant's generation for at least two percent of the energy supplied to its retail customers, be **DENIED**.

4. That Excelsior Energy's Petition asking the Commission to determine that, under the terms of Minn. Stat. § 216B.1693, at least 13 percent of the energy supplied to Xcel Energy's retail customers should come from the Units I and II of the Mesaba Energy Project by 2013 be considered in Phase 2 of this matter.

Dated: April 12, 2007

/s/ Steve M. Mihalchick
STEVE M. MIHALCHICK
Administrative Law Judge

/s/ Bruce H. Johnson
BRUCE H. JOHNSON
Administrative Law Judge

MEMORANDUM

Applicable Law and General Legislative Intent

The Legislature enacted both the Clean Energy Technology Statute, Minn. Stat. § 216B.1693, (sometimes CET Statute) and the Innovative Energy Statute, Minn. Stat. § 216B.1694, (sometimes IEP Statute) in its 2003 Special Legislative Session as part of what is commonly referred to as the 2003 Omnibus Energy Bill. Other provisions of that Act dealt with radioactive waste management, renewable energy development, disconnection of residential customers, and various other topics related only by their connection with the general topic of energy.[131]

Construction of a statute is a question of law, which must be determined in the first instance by the decision-making administrative tribunal but which may be determined *de novo* by a reviewing court.[132] Therefore, legal opinions that offer legal analysis of a statute or an analysis of how a statute should be applied to the facts are not considered evidence because they serve no useful purpose in the fact-finding process.[133] Rather, any legal opinions about how the CET and IEP statutes should be construed that parties have offered in this proceeding will be considered as legal argument and not as evidence.

"[I]f the words of the statute are 'clear and free from all ambiguity,' further construction is neither necessary nor permitted."[134] One simply gives it effect according to the meaning of its plain language.[135] When it becomes necessary to construe an ambiguous statute, the goal "is to ascertain and effectuate the intention of the Legislature."[136] One "may ascertain the Legislature's intent by considering a number of matters, including the legislative history, the necessity for the law, and the consequences of various interpretations."[137] One can also apply one or more of the traditional canons of statutory construction.[138]

However, apart from language of the bill that resulted in the enactment of the Minn. Stat. §§ 216B.1693 and 1694,[139] the language of the Act that was passed and signed into law,[140] and the language of the statutes, as codified in Minnesota Statutes,

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[131] Act of May 29, 2003, ch. 11; 2003 Minn. Laws 1st Spec. Sess. 1661.
[132] *Hibbing Education Association v. Public Employment Relations Board*, 369 N.W.2d 527, 529 (Minn. 1985).
[133] *Conover v. Northern States Power Co.*, 313 N.W.2d 397, 402-03 (Minn. 1981), citing the Committee Comment to Minn. R. Evid. 704.
[134] *Owens v. Water Gremlin Co*., 605 N.W.2d 733, 736; (Minn. 2000)
[135] *In the Matter of Detailing Criteria and Standards for Measuring an Electric Utility's Good Faith Efforts in Meeting the Renewable Energy Objectives Under Minn. Stat. § 216B.1691*, 700 N.W.2d 533, 536 (Minn. App. 2005).
[136] Minn. Stat. § 645.16 (2006).
[137] *Burkstrand v. Burkstrand*, 632 N.W.2d 206, 210 (Minn. 2001).
[138] *Gomon v. Northland Family Physicians, Ltd*., 645 N.W.2d 413, 416 (Minn. 2002)
[139] H.F. 9, 83rd Leg., 1st Spec. Sess. (2003).
[140] Act of May 29, 2003, ch. 11, art. 4, 2003 Minn. Laws 1st Spec. Sess. 1661.

the record of this proceeding contains no legislative history.[141] The record does contain some more recent statements by legislators, including some bill authors, as to what the Legislature intended. However, comments and statements of legislators, including authors, *made after a statute has been passed* "are inadmissible for the purpose of construing a statute."[142] That does not mean that more recent statements by legislators are irrelevant. But it means that, as a matter of law, those more current statements are more in the nature of public comments than evidence of legislative intent. In any event, even if those more recent legislative statements were admissible to ascertain the meaning of ambiguous provisions of the CET and IEP statutes, statements of legislative intent "may not be used to create an ambiguity"[143] nor "to impeach the text of an enrolled bill."[144]

The necessity or purpose of a statute may be considered in determining the meaning of an ambiguous provision.[145] One readily apparent legislative purpose in enacting Minn. Stat. §§ 216B.1693 and 1694 was to encourage the development of highly efficient combined-cycle generation technology using coal as a primary fuel (IGCC technology) as a goal for the State of Minnesota. Thus, the terms of some provisions in the two statutes may be so closely related "as to require they be interpreted in light of one another"— in other words, be read in *pari materia*.[146] However, to some extent the two statutes accomplish the same legislative policy in different ways. Therefore, it may not be appropriate to construe some provisions of the two statutes *in pari materia*.

On the other hand, statutory provisions set in other articles of the 2003 Omnibus Energy Bill cannot be read *pari material* with Minn. Stat. §§ 216B.1693 and 216B.1694 because those other statutory provisions have distinctly different statutory purposes and their subjects are prima facie unrelated to the subject of the CET and IEP statutes.[147]

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[141] The substantive provisions of the bill, the Act, and the statutes, as codified, are all identical and provide no further insight into legislative intent.

[142] *Krueth v. Independent School District No. 38*, 496 N.W.2d 829, 834 (Minn. App. 1993). The logic behind the principle is that the political environment changes from session to session and from year to year. What the Legislature's current intent with regard to the meaning of a statute can be materially different from what the Legislature's intent may have been in 2003 at the time the statutes were enacted.

[143] *Nevels v. State of Minnesota Department of Human Services*, 590 N.W.2d 798, 802 (Minn. App. 1999).

[144] *Washington County v. AFSCME, Council No. 91*, 262 N.W.2d 163, 167 (Minn. 1978).

[145] *Burkstrand v. Burkstrand*, *supra*, 632 N.W.2d at 210.

[146] *State v. McKown*, 475 N.W.2d 63, 66 (Minn. 1991).

[147] Excelsior suggests that the potential obligations placed on Xcel in the CET and IEP statutes were the legislative price that Xcel had to pay for passage of radioactive waste management provisions in art. 1 that were favorable to Xcel. There is no evidence in the record of legislative history establishing that, and the fact that the two sets of provisions were in the same ominibus bill does not require that they be read *in pari materia*. Under Minn. Const. art. IV, §17, "the common thread" that connects the subject matter of provisions in an omnibus bill may be, at most, "a mere filament." *Associated Builders and Contractors v. Ventura*, 610 N.W.2d 293,302 (Minn. 2000). On their face, the CET and IEP provisions in art. 4 of the act are no more connected with the radioactive waste management provisions in art. 1 than are the disconnection of residential customers provisions in art. 3.

Interpreting the IEP Statute, Minn. Stat. § 216B.1694

The IEP statute generally requires the Commission to make two separate, but related determinations: (1) whether Excelsior's Project qualifies as an "Innovative Energy Project," within the meaning of Minn. Stat. § 216B.1694, subd. 1; and (2) if so, what are the appropriate terms under which Excelsior is entitled to enter into a PPA pursuant to Minn. Stat. § 216B.1694, subd. 2(a)(7). There is ambiguous language in both statutory provisions that requires interpretation.

Interpreting Minn. Stat. § 216B.1694, subd. 1

Excelsior suggest that the Legislature has already made a legislative finding of fact that Excelsior's Mesaba Project is an "Innovative Energy Technology" within the meaning of the IEP and CET statutes, and that it is therefore unnecessary for the Commission to make any findings or conclusions in that regard. But if that were the case, it would have been unnecessary for the Legislature even to have set forth the criteria for an Innovative Energy Project in Minn. Stat. § 216B.1694, subd. 1. It could simply have enacted a legislative finding of fact in the statute determine that the Mesaba Project is an Innovative Energy Project, thereby eliminating the need to include a subdivision 1 in the statute.

Excelsior suggests that the fact that the Notice of Hearing failed to specifically identify as an issue whether Excelsior meets the statutory qualifications for an "Innovative Energy Project" that are set forth in Minn. Stat. § 216B.1694 represents a prior finding by the Commission that Excelsior does meet those qualifications. Excelsior therefore argues that its status as an innovative technology project need not be considered in this proceeding.[148] The first issue that the Commission set forth in the Notice of Hearing is whether the Commission should "approve, amend, or modify the terms and conditions of a proposed power purchase agreement." Answering that question necessarily involves an inquiry into whether Excelsior's Project qualifies as an Innovative Energy Project (hereafter sometimes IEP) and is therefore entitled to enter into a PPA, and the Commission recognized that the issues it specifically addressed in the Notice of Hearing involved "numerous sub-issues." Second, the Commission referred "all issues" to the Office of Administrative Hearings. Finally, the Notice of Hearing also specifically states that parties "may also raise and address other issues relevant to the petition." Therefore, whether Excelsior's Project qualifies as an Innovative Energy Project, within the meaning of Minn. Stat. § 216B.1694, subd. 1, is an issue to be addressed in this proceeding.

Interpreting Minn. Stat. § 216B.1694, subd. 1(1)

Minn. Stat. § 216B.1694, subd. 1(1), requires that the Project result in "significantly reduced sulfur dioxide, nitrogen oxide, particulate, and mercury emissions from those of traditional technologies." That language contains three ambiguities. First,

[148] Initial Brief of Excelsior Energy, Inc. (hereafter Initial Excelsior Brief) at 10.

the Commission must determine whether use of the Project's technology results in "*significantly* reduced sulfur dioxide, nitrogen oxide, particulate, and mercury emissions from those of *traditional* technologies." The statute itself neither defines "significant" nor refers to any objective standards for determining whether potential emissions reductions will be "significant." In a situation like this, where the statute lacks objective standards for arriving at a highly technical conclusion, one presumes that the Legislature intended the Commission to establish the criteria and standards for implementing the statutory test. Where the Legislature has committed that function to agency discretion,[149] the law simply requires that the criteria and standards the agency fashions be "reasonable and further the purpose of the statute."[150]

Second, what the Legislature meant by the term "traditional technologies" in Minn. Stat. § 216B.1694, subd. 1(1), is not completely clear. The specific question that must be addressed here is whether the Project's emissions should be compared to those of SCPC plants. The intervenors generally argue that Minn. Stat. §§ 216B.1693 and 1694 both require an emissions comparison between the Project's proposed IGCC plant and SCPC plants. However, such a comparison is required only if SCPC technology meets the definition of "traditional." Again, the Legislature did not enact any criteria or standards for determining which solid fuel technologies are "traditional" and which are not. Thus, it must be presumed that the Legislature intended for the Commission to employ its expertise in fashioning the appropriate criteria or standards for determining whether SCPC technologies are "traditional."[151]

As used in this context, the word "traditional" means a practice that has been in effect over an extended period of time.[152] Creating power by burning coal to create steam to drive turbine generators is a process that has been in existence for many years and therefore represents a "traditional" way of producing power. Pulverizing coal and burning it to create steam at "supercritical" temperatures is a technology that has been in existence since the 1950s. That technology does not fundamentally alter the process by which the power is produced; it merely makes the process more efficient and results in the production of fewer pollutants. On the other hand, IGCC technology does fundamentally alter the process by which the power was produced. Thus, SCPC technology does meet the definition of a "traditional" solid fuel technology and the Project's emissions should be compared to those of SCPC plants. This reading is most consistent with the IEP and CET Statutes' promotion of a less polluting use of coal to generate electricity.

The final potential ambiguity in involves the language "… significantly reduced sulfur dioxide, nitrogen oxide, particulate, and mercury emission from those of traditional technologies." The question is whether the Legislature intended the phrase "significantly reduced" to apply to each of the four subsequently specified emissions—

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[149] *Id.* at 726.
[150] *Id*.
[151] *See In re Application of Northwestern Bell Telephone Co.*, *supra*, 386 N.W.2d at 726.
[152] As used in this statutory context, "traditional" means pertaining to "[a] time-honored practice or set of practices." AMERICAN HERITAGE DICTIONARY (2nd College Ed. 1985).

i.e., sulfur dioxide, nitrogen oxide, particulate, and mercury"—or to the combination of them in the aggregate. The rule of last antecedent provides that when a series of words is followed by a modifier, the modifier only applies to the last item in the list.[153] A necessary corollary is that when a series of words is preceded by a modifier, the modifier applies to all words in the list. In other words, the Legislature intended there to be a demonstration that each of the specified emissions be significantly reduced.

Interpreting Minn. Stat. § 216B.1694, subd. 1(2)

Minn. Stat. § 216B.1694, subd. 1(2) contains yet another requirement for an Innovative Energy Project that is somewhat similar to the requirement in Minn. Stat. § 216B.1694, subd. 1(3)—namely, "that the project developer or owner [certify that the project be] capable of offering a long-term supply contract at a hedged, predictable cost." Excelsior first argues that, like the Commissioner's designation in Minn. Stat. § 216B.1694, subd. 1(3), the Legislature is not requiring that Excelsior establish that its Project actually be "capable of offering a long-term supply contract at a hedged, predictable cost." Rather, Excelsior contends that the Legislature is only requiring "that an IEP have a *certification* by the Project owner or developer – albeit, a certification to that effect."[154] Thus, Excelsior argues that the question presented in determining whether the Mesaba Project meets the definition of an IEP is only whether or not it has made the required certification. Excelsior has, in fact, made that certification.[155] However, the Legislature intended there to be material differences in the relative status of the IRR Commissioner's designation under subdivision 1(3) and Excelsior's certification under subdivision 1(2).

First of all, the nature of the act required by Minn. Stat. § 216B.1694, subd. 1, paragraphs (2) is fundamentally different from the act required by paragraph (3). "Certify" involves the act of formally confirming in writing that something is true or accurate;[156] in other words, the act of certification necessarily involves an assertion about the truth value of what is being certified. On the other hand, "designation" means pointing out the location of something for a specific purpose.[157] In other words, a designation does not necessarily involve an assertion about the truth value of what is being designated. Second, the nature of the actors identified in paragraphs (2) and (3) is also fundamentally different. Paragraph (3) involves an official determination by the head of a coordinate state agency for the purpose of carrying out a statutory duty. As noted above, the Commission lacks the requisite statutory authority to conduct an administrative review of its sufficiency. On the other hand, Minn. Stat. § 216B.1694, subd. 1(2) requires something other than an official designation, it requires a "certification" by a private party who is seeking a government benefit in a proceeding

[153] REVISOR OF STATUTES, MINNESOTA REVISOR'S MANUAL (2002) at § 10.13(b).
[154] Excelsior's proposed Findings of Fact, Conclusions of Law, and Recommendation at ¶¶ 99 through 102.
[155] EE1002.
[156] In the sense germane to this context, "certify" means "to confirm formally as true, accurate, or genuine, esp. in writing." AMERICAN HERITAGE DICTIONARY (2nd College Ed. 1985).
[157] *Id*.

that is properly before the Commission. Moreover, one of the Legislature's primary purposes in creating the Commission was to create an agency that would assess the impact of actions taken by public utilities on the citizens of Minnesota, including rate payers.[158] To conclude that the Commission lacks the authority to look beneath Excelsior's certification to determine the truth value of what Excelsior is asserting would ignore one of the Commission's primary statutory purposes and essentially convert Minn. Stat. § 216B.1694, subd. 1(2) into a meaningless formality. To the extent provisions regarding the Commission's duties under Minn. Stat. § 216B.1694, subd. 1(2) are ambiguous, they must be read *in pari materia* with Minn. Stat. § 216B.01, which set forth the purposes for which the Commission was created and its more general duties with regard to the regulation of public utilities.[159] The IEP statute must also be construed in a way that gives effect to all of its provisions.[160] Therefore, the Commission has the authority and duty to look beyond Excelsior's certification that it is "capable of offering a long-term supply contract at a hedged, predictable cost" in order to determine whether or not that is, in fact, the case.

Interpreting Minn. Stat. § 216B.1694, subd. 1(3)

Minn. Stat. § 216B.1694, subd. 1(3) contains another requirement that the Project must meet in order to qualify as an Innovative Energy Project—namely, the Project must have been:

> …designated by the commissioner of the Iron Range Resources and Rehabilitation Board as a project that is located in the taconite tax relief area on a site that has substantial real property with adequate infrastructure to support new or expanded development and that has received prior financial and other support from the board.

The statute does not require that an IEP be located "on a site that has substantial real property with adequate infrastructure to support new or expanded development." Rather it requires that an IEP *have a designation* by the IRR Commissioner—albeit, a designation to that effect. Thus, the question in determining whether a proposed project by Excelsior on the West Range Site meets the definition of an IEP is whether that site has the Commissioner's designation. All of the parties agree that the Commissioner has, in fact, designated both the East Range and the West Range site as having adequate infrastructure. However, in a motion for partial summary disposition filed on September 25, 2006, MCGP argued that it was undisputed that the West Range Site, in fact, lacks "adequate infrastructure" within the meaning of Minn. Stat. § 216B.1694, subd. 1(3), that the IRR Commissioner's designation of that site was erroneous or fraudulent, and, therefore, as a matter of law, Excelsior cannot construct its project on

[158] *See* Minn. Stat. § 216B.01 and discussion in Part IV-B-5, *infra*.
[159] Minn. Stat. § 216B.01, which sets forth the Legislature's general expectations concerning the Commission's function, and Minn. Stat. §216B,1694, which sets forth the Commission's specific functions with respect to this matter, are clearly so closely related "as to require they be interpreted in light of one another"— in other words, be read in *pari materia*. *See State v. McKown*, *supra*, 475 N.W.2d at 66.
[160] Minn. Stat. § 645.15 (2006).

that site. The question of statutory interpretation is whether the Legislature intended to grant the Commission the authority to review the IRR Commissioner's designation and set it aside if the Commission were to find it to be clearly erroneous or fraudulent.

Reviewing any factual determinations the IRR Commissioner may have made in making the required designation is clearly either a judicial or a quasi-judicial, function. State agencies have no inherent quasi-judicial powers. Accordingly, "[a]gencies are not permitted to act outside the jurisdictional boundaries of their enabling acts."[161] The decision of an agency that lies outside its statutory authority and jurisdiction is subject to reversal by a reviewing court.[162] Here, the Legislature did not give the Commission statutory authority to review the IRR Commissioner's designation. Absent such a grant of quasi-judicial jurisdiction, the Commission has no authority to inquire into the validity of the IRR Commissioner's designation and adjudicate whether the West Range Site, in fact, "has substantial real property with adequate infrastructure to support new or expanded development,". The authority to review the IRR Commissioner's designation of the West Range Site must reside, if at all, in some court of competent jurisdiction.

Interpreting the Provisions of Minn. Stat. § 216B.1694, Subd. 2(a)

Minn. Stat. § 216B.1694, subd. 2(a) provides in part that "An Innovative Energy Project … (4) shall qualify as a "Clean Energy Technology" as defined in section 216B.1693." The phrase "shall qualify" as used in that paragraph is ambiguous. Since "shall" can mean either the imperative form or the future tense of the verb "to be," "shall qualify" could refer either to a requirement—"must qualify"—or to a finding of fact—"is qualified." The latter interpretation is correct because the criteria for defining "Clean Energy Technology" in Minn. Stat. § 216B.1693(c), to which subdivision 2(a)(4) refers, are essentially the same as the first criterion for qualification as an "Innovative Energy Project" in Minn. Stat. § 216B.1694, subd. 1(1). Thus, subdivision 2(a)(4) is merely a recognition that if a project meets all the requirements to be an Innovative Energy Project, it also meets the more limited requirements to constitute a Clean Energy Technology. The subdivision is not an indication that the Legislature has already concluded that the Mesaba Project meets the criteria for a clean energy project.

Interpreting Minn. Stat. § 216B.1694, subd. 2(a)(7)

Minn. Stat. § 216B.1694, subd. 2(a)(7), provides that an Innovative Energy Project "shall be entitled to enter into a contract with a public utility that owns a nuclear generation facility in the state to provide 450 megawatts of baseload capacity and energy under a long-term contract, subject to the approval of the terms and conditions of the contract by the commission."

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[161] *Cable Communications Bd. v. Nor-West Cable Communications Partnership*, 356 N.W.2d 658, 668 (Minn. 1984).

[162] Minn. Stat. § 14.69(b) (2006); *see also Hiawatha Aviation of Rochester, Inc. v. Minnesota Dep't of Health*, 375 N.W.2d 496, 501 (Minn. App. 1985)

Amount of Energy under Minn. Stat. § 216B.1694, subd. 2(a)(7)

Xcel Industrial Intervenors (XII) and Xcel have contended that the PPA must be for 450 MW, no more and no less. They argue that the Legislature intended to give the Commission the authority to alter or amend any provision of the PPA, *except* the statutory amount—i.e., 450 MW— of baseload capacity that can be sold. On the other hand, Excelsior argues that the statute authorizes the Commission to alter or amend *any* provision of the PPA, *including* the amount of baseload capacity that can be sold.

The arguments of XII and Xcel are based on the assumption that if the Legislature had intended the Commission to have the authority to alter or amend the amount of baseload capacity in the PPA, it would not have specified an amount certain (i.e., "450 megawatts") or would have established a floor rather than an amount certain for that entitlement (*e.g.*, "at least 450 megawatts"). But that argument requires assumptions about legislative intent that involve speculating about *why* the legislature used the words it chose rather than addressing the plain meaning of the words that the legislature did choose to use. Minn. Stat. § 645.16 provides in part that:

> When the words of a law in their application to an existing situation are clear and free from all ambiguity, the letter of the law shall not be disregarded under the pretext of pursuing the spirit.

There is nothing ambiguous about Minn. Stat. § 216B.1694, subd. 2(a)(7), with respect to the Commission's authority to alter or amend a PPA that an Innovative Energy Project submits for its approval. The statute contains no explicit limitation or qualification on that authority. None of the parties have offered legislative history that explains why the legislature chose 450 megawatts as the baseload capacity amount for a power sale under the PPA. Why the legislature chose that amount is therefore a matter of speculation.[163] However, speculating about why the legislature specified 450 MW sheds no light on the question of statutory interpretation that is really germane here—that is, whether the legislature intended to give the Commission authority to alter or amend that specified amount of baseload capacity. In that regard, the language of the statute speaks for itself. As previously noted, there is no explicit limitation on the Commission's authority to amend that portion of the PPA. Instead, XLI and Xcel Energy argue that the legislature's use of the 450 MW figure for the amount of baseload capacity is, in effect, an *implicit* limitation on the Commission's authority to change that amount during the approval process. But Minn. Stat. § 645.16 and relevant case law

[163] Excelsior suggests that 450 MW was the level of Xcel's projected need at the time the legislation was enacted. Although that would seem to make some sense, there is no admissible evidence that was the Legislature's motivation for specifying that amount. Excelsior also has stated, in its response to DOC IR 102, that at the time the IEP Statute was passed, it appeared that 450 MW of baseload capacity was an optimal size for the Project. However, after further efforts to optimize plant design to reduce costs and improve reliability, ConocoPhillips and Fluor determined that the optimal design would yield 603 MW. DOC 3031 at 1-2. This explanation invites speculation that the Project's entire output of 450 MW would have been what Excelsior Energy's lobbyists requested from the Legislature at the time. But that is speculation, not proof of legislative intent.

permits consideration of implicit legislative intent only when the language of the statute is not explicit and free from ambiguity, and that is simply not the case here.

Public Interest Determination under Minn. Stat. § 216B.1494, subd. 2(a)(7)

If the Project did qualify as an IEP as defined by Minn. Stat. § 216B.1694, subd. 1, the Commission must then make a determination, pursuant to Minn. Stat. § 216B.1694, subd. 2(a)(7), whether to approve, disapprove, amend, or modify the terms and conditions of a proposed power purchase agreement that Excelsior has submitted to Xcel Energy. When the Commission makes that "public interest determination," the Legislature instructed the Commission to consider:

> …the project's economic development benefits to the state; the use of abundant domestic fuel sources; the stability of the price of the output from the project; the project's potential to contribute to a transition to hydrogen as a fuel resource; and the emission reductions achieved compared to other solid fuel baseload technologies

How broad the Legislature intended the scope of that public interest determination to be has emerged as one of the major legal issues in this proceeding. Excelsior takes the position that in making its public interest determination, the Commission may only consider the five factors expressly listed in Minn. Stat. § 216B.1694, subd. 2(a)(7). Excelsior also argues that if the Commission were to conclude that the scope of its public interest determination should is broader than that, Minn. Stat. § 216B.1694, subd. 2(a)(1), which exempt Excelsior from obtaining a certificate of need, precludes the Commission from considering anything it would normally consider in a certificate of need proceeding under Minn. Stat. § 216B.243. On the other hand, all of the intervenors argue for a much broader view of the Commission's public interest determination than the view offered by Excelsior. Xcel expresses that broader view advanced by arguing that the Commission has "full authority to utilize the traditional public interest standard, supplemented by additional factors identified by the Legislature."[164] The question therefore is: To what extent, if at all, did the Legislature intend for the Commission to consider aspects of the public interest that are not enumerated in Minn. Stat. § 216B.1494, subd. 2(a)(7)?

One view that nearly all of the intervenors advocate is that all of the provisions of Minn. Stat. §§ 216B.1693 and 1694 should be read *in pari material*; therefore, the least-cost resource requirement in Minn. Stat. § 216B.1693(1) applies with equal force to the Commission's public interest determination in Minn. Stat. § 216B.1494, subd. 2(a)(7). However, nothing in the IEP statute specifically incorporates the least-cost resource criterion in the CET statute or otherwise specifically requires the Commission to

[164] Xcel Energy's Initial Brief at 6; *see also* Minnesota Chamber of Commerce's Initial Brief (hereafter Minnesota Chamber's Initial Brief) at. p. 11 and Initial Brief of Manitoba Hydro at 4.

determine whether IGCC is a least-cost resource when considering whether or not to approve the proposed PPA between Excelsior and Xcel Energy.[165]

Minn. Stat. § 216B.1694, subd. 2(a)(7), should not be read in pari materia with Minn. Stat. § 216B.2422

Most intervenors argue that the Commission should consider whether or not Xcel will need the power that Excelsior proposes to supply under the PPA. Many simply argue that the Commission has a broad mandate to consider anything that bears on the public interest, and that Xcel's future need for power is one of those public interest factors.[166] What argues strongly against that view is the Legislature's exemption of Excelsior from having to obtain a certificate of need under Minn. Stat. § 216B.243.[167] Some, however, attempt to take a narrow view of what that exemption means by arguing that Minn. Stat. § 216B.1694, subd. 2(a)(7), must be read *in pari materia* with the resource planning statute, Minn. Stat. § 216B.2422.[168] They argue that the two statutes, when read together, establish that it is appropriate for the Commission to take into account Xcel's need for power as evidenced in its most recent resource plan in determining whether to approve the PPA. More specifically, they contend that the Legislature intended that the Commission's consideration the 2004 integrated resource plan that Xcel prepared pursuant to Minn. Stat. § 216B.2422 to be the exclusive process for prospective power suppliers, including Excelsior, to submit proposals to meet Xcel's future needs. They claim that since Excelsior did not propose to supply Xcel with power in the course of that process and since the Commission has already approved Xcel's 2004 resource plan, the Commission must now disapprove the PPA as being contrary to the public interest because compelling Xcel to purchase 450 MW of power from Excelsior would result in not giving effect to that earlier resource planning process and the resultant resource plan.

Xcel's 2004 integrated resource plan indicates that Xcel does have a future need for baseload power, but the extent of Xcel's future needs is not the issue here. The issue is whether the Legislature intended some or all of those needs to be met by Excelsior, if it meets the requirements of Minn. Stat. § 216B.1694 rather than by other power suppliers who may have submitted proposals in the course of Xcel's 2004 resource planning process. In other words, it appears that a conflict may exist between the results of Xcel's resource planning pursuant to Minn. Stat. § 216B.2422 and the Legislature's directive in Minn. Stat. § 216B.1694 for Xcel to purchase power from an IEP. Where the intervenors' argument misses the mark is how they have reconciled that conflict. In effect, they have read an additional requirement into Minn. Stat. §

[165] Xcel and other parties may argue that the statutory requirement in Minn. Stat. § 216B.1694, subd. 2(a)(7), that the Commission make a "public interest determination" implicitly requires the Commission to consider the project's costs. That may well be the case, but consideration of project costs in general falls short of a specific determination that IGCC is a "least-cost resource."

[166] See Xcel Energy's Initial Brief at 22-23 and Reply Brief at 11-12; Initial Brief of Izaak Walton League of America, Fresh Energy and Minnesota Center for Environmental Advocacy at 3-7.

[167] See Minn. Stat. § 216B.1694, subd. 2(1).

[168] *See* Minnesota Power's Initial Brief at 22-26.

216B.1694 for an IEP to meet—namely, that to be entitled to a PPA, the sponsor of the IEP must first have submitted a proposal to Xcel to provide it with power during Xcel's most recent resource planning process. Again, one cannot read into a statute what the Legislature has left out."[169] Additionally, the more specific IEP statutory provisions relating to how Xcel must obtain the power it will need must prevail over the results of the resource planning process set forth in the more general provisions of Minn. Stat. § 216B.2422. It is the rule that specific provisions in a statute control general provisions; that provisions of a complete and specific act will prevail over general language of another, prior provision, and if there is conflict between different statutes as to the same matter, the later statute prevails.[170]

Minn. Stat. § 216B.1494, subd. 2(a)(7), should be read in pari materia with Minn. Stat. §§ 216B.01 and 216B.03

The Commission has no inherent powers to consider aspects of the public interest. Rather, the Commission is a creation of statute and may only exercise the powers that the Legislature has expressly granted to it. If the Commission has the authority to consider public interest factors other than those enumerated in subd. 2(a)(7) of the IEP statute, then that authority must be firmly grounded in some other provision of the IEP statute or other section of Chapter 216B. Neither Minn. Stat. § 216b.1693(a) nor Minn. Stat. § 216B.2422 operates to broaden the scope of the Commission's public interest determination under Minn. Stat. § 216B.1494, subd. 2(a)(7). However, the language of the IEP statute— "in making *its* public interest determination"—suggests that the Legislature was referring to some pre-existing statutory basis for the Commission's consideration of some public interest factors that the succeeding five factors were to supplement. To hold otherwise would render the phrase, "in making its public interest determination," in the statute superfluous. If the Legislature had intended that the inquiry be limited to the five factors, it could have left the phrase out entirely or changed it to read, "The commission may approve, disapprove, amend, or modify the contract in making its public interest determination, taking into consideration only the project's . . ." It did not do so. The statute must be read so as to give effect to all of its provisions.[171]

There are additional reasons to apply the broader public interest standard. Minnesota Statutes, Chapter 216B, is entitled and expressly pertains to "Public Utilities." Thus, two threshold questions are whether Excelsior is a "public utility" within the meaning of Chapter 216B and, if so, whether that operates to broaden the Commission's public interest determination beyond the five factors listed in Minn. Stat. § 216B.1494, subd. 2(a)(7). "Public utility" is defined in Minn. Stat. § 216B.02, subd. 4, which provides in part:

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[169] *Koes v. Advanced Design, Inc.*, 636 N.W.2d 352, 359 (Minn. 2001).
[170] *Fink v. Cold Spring Granite Co.*, 115 N.W.2d 22, 26 (Minn. 1962), citing *Beck v. Groe*, 70 N.W. (2d) 886, 895 (Minn. 1955).
[171] Minn. Stat. § 645.15 (2006); *See Owens v. Federated Mut. Implement & Hardware Ins*., 328 N.W.2d 162, 164 (Minn. 1983).

> "Public utility" means persons, corporations, or other legal entities, their lessees, trustees, and receivers, now or hereafter operating, maintaining, or controlling in this state equipment or facilities for *furnishing at retail* natural, manufactured, or mixed gas or electric service to or for the public or engaged in the production *and retail sale* thereof … [Emphasis supplied.]

Reading Minn. Stat. § 216B.02, subd. 4, it first appears that the Legislature was only concerned with regulation by the Commission of *retail sales* of electrical power by public utilities. However, Minn. Stat. § 216B.02, subd. 4, goes on to indicate that some wholesale sales of electrical power might also be subject to regulation:

> *Except as otherwise provided*, the provisions of this chapter shall not be applicable to any sale of natural, manufactured, or mixed gas or electricity by a public utility to another public utility for resale. [Emphasis supplied.]

Although Excelsior might not precisely meet the definition of a public utility, the Legislature clearly understood that Xcel and Minnesota Power, the potential wholesale purchaser of power from Excelsior and the power provider that will be financially responsible for transmission lines connecting the Project to the grid, are public utilities.[172] Put another way, even though Excelsior might not meet the definition a "public utility" within the meaning of Chapter 216B and be subject to regulation by the Commission as such, Xcel and Minnesota Power are clearly subject to regulation by the Commission as a public utilities, as are Xcel's potential obligations to purchase power from Excelsior. The question, then, is whether the Commission's jurisdiction over Xcel and Minnesota Power, and the power purchases that the CET and IEP statutes potentially require Xcel to make from Excelsior, operate to broaden the Commission's public interest determination under Minn. Stat. § 216B.1694, subd. 2(a)(7), beyond the five factors that the Legislature specifically lists in that statute.

The Commission's general responsibilities to regulate Minnesota Power and Xcel do broaden the Commission's public interest determinations under the CET and IEP statutes. Minn. Stat. § 216B.01, which contains the Legislature's findings with regard to the Commission's regulation of public utilities, provides, in part:

> It is hereby declared to be in the public interest that public utilities be regulated as hereinafter provided in order to provide the retail consumers of natural gas and electric service in this state with adequate and reliable services at reasonable rates, consistent with the financial and economic requirements of public utilities and their need to construct facilities to provide such services or to otherwise obtain energy supplies, to avoid unnecessary duplication of facilities which increase the cost of service to

[172] Minn. Stat.§ 216B.1694, subd. 2(a)(7), gives the Commission jurisdiction over a Innovative Energy Project's "contract with a public utility that owns a nuclear generation facility in the state …:

> the consumer and to minimize disputes between public utilities which may result in inconvenience or diminish efficiency in service to the consumers

The Department argues that the Commission must also consider its responsibilities under Minn. Stat. § 216B.03, Reasonable Rates, which states, in part:

> Every rate made, demanded, or received by any public utility, or by any two or more public utilities jointly, shall be just and reasonable. Rates shall not be unreasonably preferential, unreasonably prejudicial, or discriminatory, but shall be sufficient, equitable, and consistent in application to a class of consumers. To the maximum reasonable extent, the commission shall set rates to encourage energy conservation and renewable energy use and to further the goals of sections 216B.164, 216B.241, and 216C.05. Any doubt as to reasonableness should be resolved in favor of the consumer.

The Department goes on to argue that Minn. Stat. §§ 216B.1693 and1694 did not revoke this provision of law, so it is clear that the reasonableness of the rate (cost) must be included as a main factor in determination of the public interest in this proceeding.[173]

By exempting the Project from the certificate of need statute, the Legislature has indicated that neither need to construct facilities nor unnecessary duplication of facilities are matters that the Commission should consider in this proceeding. But the Legislature has said nothing to prevent the Commission from considering how the Project might impact providing "retail consumers of … electric service in this state with adequate and reliable services at reasonable rates." As Dr. Amit puts it, despite exemption from the CON process, the issue of Xcel Energy's need is closely tied to the issue of the Project being a least cost resource for Xcel Energy. Because all the capacity and electricity will not be needed by Xcel for at least the first four years of the PPA, Xcel's ratepayers would have to pay, under the PPA, much higher prices than they would have to pay otherwise over the period 2011 through 2014.[174] In short, in addition to the five factors set forth in Minn. Stat. § 216B.1494, subd. 2(a)(7), the Commission still has a statutory duty to consider the impact the Project will have on ratepayers and the financial and economic requirements of Xcel Energy.

Excelsior Energy also suggests that the Legislature already largely balanced the interests of rate payers and other stakeholders when it enacted the CET and IEP statutes, and that the Legislature concluded that Excelsior should be allowed to proceed with the Project unless it simply could not meet the statutory conditions set forth in the two statutes. The view of the intervenors is essentially that the Legislature intended the Commission to balance all aspects of the public *de novo*. The intervenors contend that upon completion of a *de novo* balancing of interests, the Commission should postpone development of an IGCC baseload energy source in Minnesota indefinitely until the reliability of the technology is better established, until its potential to use carbon capture

[173] Department's Reply Brief at 6.
[174] EE 3018 at 36.

and sequestration can be realized, and until Xcel Energy has a clear need for the baseload capacity that the Project will create.

Reading Minn. Stat. §§ 216B.1693 and 216B.1694 together with Minn. Stat. §§ 216B.01 and 216B.03, there is nothing in those statutes that manifests a legislative intent for the Commission's review of the Project to be as perfunctory as Excelsior argues, nor did the Legislature intend to empower the Commission to postpone the Project indefinitely until all of the concerns the intervenors raise are completely satisfied. Both of those views of legislative intent are incorrect. Rather, it appears the Legislature intended to balance some of the relevant interests during the process of enactment, but leave some degree of balancing of interests for the Commission to complete. In short, the legislative intent that emerges from the relevant legislation is that the Commission should allow Excelsior to proceed with the Project and create in the near future the additional baseload capacity that the Project represents unless Excelsior cannot meet the statutory conditions that the Legislature has established and unless there is likely to be such an adverse impact on rate payers and Xcel Energy that proceeding with the Project by approving the PPA will result in more long-term harm than good.

Interpreting the Five Factors in Minn. Stat. § 216B.1494, subd. 2(a)(7)

There appear to be two additional significant interpretation issues relating to the five public interest factors listed in Minn. Stat. § 216B.1494, subd. 2(a)(7). The first of those factors is "the project's economic development benefits to the state." The intervenors argue that the Legislature intended the Commission to consider the Project's "net" economic development benefits to the state—that is, both the positive and negative impacts that the Project will have on economic development within the state. On the other had, Excelsior contends that the Legislature intended the Commission to consider only the Project's economic development "advantages" but not any "disadvantages" it may produce. Excelsior argues that if the Legislature intended to delegate to the Commission the question of an IEP's economic development "impacts" or "net impacts," or "net benefits," or even "costs and benefits" in making its public interest determination, it would have so stated. To support that construction, Excelsior relies on the proposition that an administrative agency does not have the "authority to determine what the law should be or to supply a substantive provision of law which [it] thinks the legislature should have enacted in the first place."[175] But contrary to Excelsior's contention, this is not a situation where intervenors are attempting to supply a word that is absent from the statute. Rather it is a situation where the Legislature has not clearly and unambiguously defined what it intends the scope of the Commission's assessment of the Project's effect on the state's economic development to be. The sense of the term "benefit" that is most apposite to its context here is "[s]omething that promotes or enhances well-being."[176] Accordingly, the Commission's inquiry into economic development is an inquiry to the extent to which the Project will contribute to the state's economic development and economic well-being. Assessing that

[175] *Citing Wallace v. Comm'r of Taxation,* 289 Minn. 200, 184 N.W.2d 588, 594 (1971).
[176] AMERICAN HERITAGE DICTIONARY (2nd College Ed. 1985) at 171.

contribution necessarily involves analysis of how the Project will both positively and negatively affect economical development. Another settled canon of statutory construction is that "the legislature does not intend a result that is absurd, impossible of execution, or unreasonable."[177] It is unreasonable to presume that if the Project would, in the aggregate, do more harm than good for the state's economic development efforts, the Commission may only consider the good and not the harm.

The intervenors go on to argue that Minn. R. 1400.7300, subp. 5, then requires Excelsior to produce evidence of the Project's economic development disadvantages, as well of its economic development advantages. They argue that since Excelsior did not produce evidence of potential disadvantages, it did not meet its burden of proof with respect to that issue. The intervenors are misinterpreting the "burden" that Minn. R. 1400.7300, subp. 5, establishes. The "burden" that the rule defines is the burden of *persuasion*—that is, the burden of persuading the fact finder of the truth of the facts asserted and the reasonableness of proposals advanced.[178] It is not the burden of going forward with evidence, which the rules do not specifically address. The burden of going forward with evidence may "shift back and forth among the parties during the presentation of evidence in a case."[179] A contested case, such as this, is an adversary proceeding in which the burden of going forward with evidence can shift. In short, unless it would amount to misleading the ALJs and the Commission, Excelsior's obligation here is only to provide evidence supporting its position. Excelsior has been explicit about the fact that it has only produced evidence of positive economic development benefit, and there is no evidence of any intent to mislead anyone about that.

The fifth public interest factor that the Legislature specifically listed in Minn. Stat. § 216B.1494, subd. 2(a)(7), is "the emission reductions achieved compared to other solid fuel baseload technologies." This is similar t o, but not identical to requiring the Project to be an IGCC and have significantly reduced sulfur dioxide, nitrogen oxide, particulate, and mercury emissions when compared to traditional technologies under Minn. Stat. § 216B.1694, subd. 1(1). The comparison to be made is not restricted to the four criteria emissions and there is no expressed requirement that emissions be "significantly reduced." Further, the comparison must be between the Project and "other solid fuel baseload technologies," rather than to "traditional technologies." The net result is to broaden the comparison to include CO_2 emissions, which all parties agree should be considered to some extent. It also means that CFB plants could be considered, but no substantial evidence has been presented in this matter regarding the enhanced, second generation CFB plants.

Current concern over the issue of climate change and the extent to which carbon dioxide may be contributing to global warming has generated considerable interest in carbon capture and sequestration. In a hearing conducted by the Commission on July

[177] Minn. Stat. § 645.17(1).
[178] *In re Minnesota Public Utilities Commission*, *supra*, 365 N.W.2d at 343.
[179] GEORGE W. BECK, ET AL., MINNESOTA ADMINISTRATIVE PROCEDURE § 10.3.1 (2nd ed. 1998); *see also Peterson v. Minneapolis Street Ry.*, 31 N.W.2d 905, 909 (Minn. 1948).

27, 2006, several members of the Commission indicated interest in the Project's potential to capture and sequester carbon and requested Excelsior to provide the Commission with information concerning that possibility.[180] First, it should be noted that that Commission meeting occurred three months *after* the Commission had issued its Notice of Hearing in this matter and referred it to the Office of Administrative Hearings. There is no mention of carbon capture and sequestration in the Notice of Hearing. In other words, the fact that Commission members may be interested in the Project's potential to capture and sequester carbon does not necessarily mean that the Commission has concluded that that potential and any associated costs are factors that the Commission had to consider in determining whether to approve the proposed PPA.[181]

Nevertheless, nearly all of the parties appear to assume that the issue of carbon capture and sequestration is relevant to the issues of whether the PPA should be approved, whether the Project is, or is likely to be, a least-cost resource, or both. Excelsior suggests that its Project's potential to incorporate carbon sequestration technology as a *potential* benefit, which the Commission should consider in determining whether to approve the PPA.[182] Other parties either argue that it is not a benefit the Commission should consider or suggest that if it is, then the cost of carbon capture and sequestration should be considered in determining the Project's cost.[183]

First, the Legislature specifically addressed the Project's potential for carbon capture and sequestration in Minn. Stat. § 216B.1694, subd. 2(a)(6):

> [The Innovative Energy Project] shall make a good faith effort to secure funding from the United States Department of Energy and the United States Department of Agriculture to conduct a demonstration project at the facility for either geologic or terrestrial carbon sequestration projects to achieve reductions in facility emissions or carbon dioxide;

Thus, the Legislature was aware of the carbon capture issue and specifically authorized and required Excelsior Energy to seek available government funding. It likely did it so because such funding would help reduce the cost of the capacity and electricity provided under the PPA.

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[180] EE 1177 at 12-14.

[181] In fact, it appears that the Commission did not bring up the issue of carbon management *sua sponte* at its July 27, 2006, meeting as something it should consider in determining whether to approve the PPA. Rather, it appears that the Commission's request for information responded to statements by Excelsior that carbon management would be a *potential benefit* of the Project. *Id*. at 14.

[182] Excelsior Energy Inc.'s Findings of Fact, Conclusions and Recommendation at ¶¶ 335-391. The ALJs note that Excelsior apparent argument that the Commission should consider the Project's potential for carbon capture and sequestration as a benefit to be considered in determining whether to approve the PPA appears somewhat inconsistent with its more general argument that the Commission is limited to considering the five factors expressly set forth in the subdivision 2(a)(7).

[183] *For examples, see* Xcel Energy's Initial Brief at 14; Minnesota Power's Initial Brief at 18; Initial Brief of the Minnesota Department of Commerce (hereafter "Department's Initial Brief) at 40-42.

The evidence establishes that "experts agree that extensive research and large-scale demonstration projects are needed on sequestration before a commercial IGCC or other coal powered plant would be in a position to sequester its CO_2."[184] In other words, the potential benefits and costs of carbon sequestration are still largely speculative. However, there is little doubt today that there will be future legislation on both the state and federal levels that will impose requirements on fossil-fuel burning power plants either to reduce greenhouse gas emissions or to pay for other methods of reducing those gases. We can also speculate that such legislation could possibly result in both financial benefits and costs for the Project. For example, it is possible that the Project might someday be able to achieve significant reductions of greenhouse gases through carbon capture and sequestration, but offset that cost to some degree by selling the sequestered CO_2 or carbon credits. At this point, prudent practice requires that utility planners consider the possible costs of carbon regulation.

Interpreting the CET Statute, Minn. Stat. § 216B.1693

In Minn. Stat. § 216B.1693, the Legislature required the Commission to make several separate, but related determinations. In logical sequence, the Commission must first determine whether Excelsior's Mesaba Project employs "Clean Energy Technology" within the meaning of Minn. Stat. § 216B.1693(c). The statutory definition of "Clean Energy Technology," in turn, requires application of a three part test: (1) whether the Mesaba Project is based on a "technology utilizing coal as a primary fuel"; (2) whether it uses that coal "in a highly efficient combined-cycle configuration"; and (3) whether use of that technology results in "significantly reduced sulfur dioxide, nitrogen oxide, particulate, and mercury emissions from those of traditional technologies." This three-part test in Minn. Stat. § 216B.1693(c) is identical to the three-part test in Minn. Stat. § 216B.1694, subd. 1(1), which comprises part of the definition of "Innovative Energy Project." Both of the provisions have the same meaning. In other words, if Excelsior's project qualifies as an Innovative Energy Project under Minn. Stat. § 216B.1694, subd. 1, it also necessarily qualifies as a Clean Energy Technology under Minn. Stat. § 216B.1693(c).

The Term "Least-Cost Resource" Must Be Interpreted With Reference to the Resource Planning Statute, Minn. Stat. § 216B.2422

Being a "least-cost resource" is an express requirement for Excelsior to be eligible to supply two percent of Xcel's retail load in addition to whatever sale the Commission may approve under the PPA. The Legislature did not define "least-cost resource" in Minn. Stat. § 216B.1693 or elsewhere in Minn. Stat. Ch. 216B. However, Minn. Stat. § 216B.2422, subd. 2, does refer to "least cost plan":

> As a part of its resource plan filing, a utility shall include *the least cost plan* for meeting 50 and 75 percent of all new and refurbished capacity needs

[184] EE 1028.5 at 6.

through a combination of conservation and renewable energy resources. [Emphasis supplied.]

In the resource planning process, a public utility, such as Xcel, evaluates a variety of potential resource options for supplying its projected need for electric energy. The various options are analyzed to determine their cost effectiveness, and alternatives are modeled and compared with one another under a variety of scenarios to find the least cost resource mix. In other words, the term "least cost resource" appears to be a technical term used within the energy industry to describe a potential electric energy supply resource that is reasonable for a public utility to include in its integrated resource plan. Although there appear to be no objective standards to determine reasonableness in that context, the cost impact on Xcel's rate payers of including power supplied by Excelsior in an amount equal to two percent of Xcel's retail load would appear to be the primary consideration. In other words, since it is the least-cost mix in Xcel's integrated resource plan that will be affected by an obligation to purchase energy from Excelsior in an amount equal to two percent of Xcel's retail load, "a least-cost resource" means a least-cost resource for Xcel.

As previously noted, Minn. Stat. § 216B.01, which must be read in pari material with Minn. Stat. § 216B.1693, declares it "to be in the public interest that public utilities be regulated as hereinafter provided in order to provide the retail consumers of natural gas and electric service in this state with adequate and reliable services at reasonable rates." So the question presented is whether requiring Xcel to purchase 153 MW of power supplied by Excelsior at the projected rate will result in adequate and reliable services for Xcel's retail customers at reasonable rates.

The Public Interest Determination under the CET Statute is Similar to the Public Interest Determination under the IEP Statute.

Minn. Stat. § 216B.1694, subd. 2(a)(7), requires the Commission to make a public interest determination in deciding whether to approve, disapprove, amend, or modify the PPA. The Legislature did not intend the public interest determined required by that statute to be all-encompassing. Rather, that public interest determination has relatively well-defined boundaries. First, the IEP statute expressly lists five factors that the Commission must consider in making that public interest determination. Moreover, by operation of Minn. Stat. §§ 216B.01 and 216B.03, the Commission must also consider the impact that the PPA will have on Xcel and its rate payers, including an inquiry into the reasonableness of rates paid by Xcel Energy under the PPA. The intervenors in this proceeding either argue or assume that the Commission's public interest determinations in the IEP and CET statutes are coterminous. That is not entirely correct. It is possible to imagine that a rate charged under the PPA might be "reasonable," but not be "a least cost resource." But the difference between the two is not great. A rate cannot be found to be reasonable if it is significantly greater than rates for identical service from other providers, absent some other justification.

SMM/BHJ