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

BEFORE THE
MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS

100 Washington Square, Suite 1700
Minneapolis, Minnesota 55401-2138

FOR THE
MINNESOTA PUBLIC UTILITIES COMMISSION

127 7th Place East, Suite 350
St. Paul, Minnesota 55101-2147

In the Matter of the Petition of Excelsior Energy Inc.
and Its Wholly-Owned Subsidiary MEP-I, LLC For Approval of Terms and
Conditions For The Sale of Power From Its Innovative Energy Project Using
Clean Energy Technology Under Minn. Stat. § 216B.1694 and a
Determination That the Clean Energy Technology Is Or Is Likely To Be a
Least-Cost Alternative Under Minn. Stat. § 216B.1693

PREPARED SURREBUTTAL TESTIMONY OF EXCELSIOR ENERGY INC. AND MEP-I LLC

RENEE J. SASS

OCTOBER 31, 2006

1   **EXCELSIOR ENERGY, INC.**

2   **BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION**

3   **PREPARED SURREBUTTAL TESTIMONY AND EXHIBITS OF**

4   **RENEE J. SASS**

5   **Q**   **Please state your name, current employment position and business address.**

6   A   Renee J. Sass. I am a Senior Vice President and Chief Financial Officer for

7   Excelsior Energy Inc. My business address is Excelsior Energy Inc., Crescent Ridge

8   Corporate Center, 11100 Wayzata Boulevard, Suite 305, Minnetonka, Minnesota 55305.

9   **Q**   **On whose behalf are you testifying?**

10 A   I am testifying on behalf of MEP-I LLC and Excelsior Energy Inc. (collectively

11   "Excelsior"), the developers of the Mesaba Energy Project (the "Project").

12 **Q**   **Have you previously provided testimony in this proceeding?**

13 A   Yes. I submitted testimony on June 19, 2006, September 5, 2006, and October 10,

14   2006 on behalf of Excelsior.

15 **Q**   **What is the purpose of your surrebuttal testimony in this proceeding?**

16 A   My testimony responds to the suggestion of Department of Commerce witness

17   Dr. Eilon Amit, Minnesota Power witness Margaret L. Hodnik, Chamber of Commerce

18   witness William Blazar, and other parties testifying in this proceeding, relating to the

19   payments under the PPA.

20 **Q**   **Have you read the testimony of Dr. Amit, Ms. Hodnik, Mr. Blazar, and others**

21   **submitted in this docket that relates to the tariff calculation under the PPA?**

22 A   Yes.

1 **Q** **What do the parties conclude about the payments under the PPA?**

2 A   In various ways these parties all assert that the Project could receive payments for

3   the life of the project that far outweigh the value received by NSP. At the extreme, some

4   parties assert that NSP will be required to pay for the plant even if it does not perform at

5   all, or will be required to pay for coal plant capacity and natural gas to run the plant, for

6   the life of the plant. Others characterize the Mesaba Project as an overpriced natural gas

7   plant with no explicit guarantee that the unit will run on solid fuel. This misconception is

8   typified by the statement of Mr. Blazar, that

9   if the IGCC technology does not work, [NSP] ratepayers will be required
10   to purchase natural gas-based power for baseload, which is significantly
11   more volatile. Not only is it more volatile, but it will be paid for along
12   with paying for the cost of the IGCC facility, which would be comparable
13   to, if not higher then [sic.], the infrastructure costs of a coal plant. So
14   [NSP] ratepayers would be paying for the infrastructure of baseload
15   capacity and receiving energy with the fuel costs of peaking facilities.
16   Rebuttal Testimony of William Blazar, at 6.
17
18   Another example is the testimony of Ms. Hodnik, which states that NSP's customers and

19   shareholders would be "forced to shoulder the responsibility for the capital required" by

20   the Mesaba Project. Rebuttal Testimony of Margaret L. Hodnik, at 8.

21 **Q** **Does any of the testimony to this effect refer to the tariff formula under the PPA, or**

22   **provide any analysis or basis for these assertions?**

23 A   No. No party making these suggestions references any provision in the PPA,

24   which governs all payments to the Project.

25 **Q** **What is your reaction to these assertions?**

26 A   They are incorrect. In fact, I will show that following the ramp-up period (a) there

27   is a pro rata adjustment to the tariff whenever the plant is not available, such that the cost

28   per megawatt hour (MWH) stays relatively constant whenever actual availability of the

1   plant is less than the levels specified in the PPA, meaning that ratepayers only pay for

2   available capacity that is provided, (b) for every hour the plant is only available on

3   natural gas, the capacity payment is reduced by 65% so that the tariff for those hours is

4   comparable to, if not less than, what the tariff would be for a combined-cycle natural gas

5   plant, (c) for every hour the plant is available on a blend of natural gas and syngas, the

6   capacity payment is adjusted to reflect the pro rata contributions of coal-derived syngas

7   and natural gas, and (d) there is an implicit guarantee to run on a substantial portion of

8   solid fuel in order to avoid termination of the PPA. The tariff formula as proposed and

9   then corrected by Mr. Osteraas in his October 10 submittal, along with the termination

10   provision of Article 11, ensure that Mesaba One will not run on 100% natural gas; and

11   whenever the unit does run on any portion of natural gas, and even entirely on natural

12   gas, the reduction in the Capacity Payment results in a fair value of the cost of energy to

13   ratepayers.

14 **Q**   **Is the tariff different than the tariff contained in NSP's "standard form" PPA?**

15 A   Yes. NSP's standard form PPA was developed for a dispatchable natural gas

16   facility, so adjustments to the tariff calculation were required in order to capture the

17   operational benefits of the IGCC technology. Specifically, the tariff needs to reflect that

18   in addition to providing base load capacity when the full plant is available on solid fuel,

19   the Project offers a separate product in the form of built in back-up capacity for hours

20   when the gasification facilities are unavailable but the combined-cycle power island is

21   available. The tariff therefore provides for different capacity payments for those two

22   situations, reflecting the different value to ratepayers of coal-derived syngas and natural

23   gas-fired capacity. In addition, the plant can run on a blend of syngas and natural gas,

1   which necessitates weighting of the tariff between a coal-based tariff and a natural gas-

2   based tariff.

3 **Q**   **Where does the tariff appear in the PPA?**

4 A   It appears at Section 8.1. The tariff described in this surrebuttal testimony is

5   attached to my testimony as Exhibit __ (RJS-6).

6 **Q**   **Please explain how the tariff calculation works.**

7 A   The key element to determine the Capacity Payment is the Capacity Availability

8   Factor (CAF), which is then multiplied by the Reference Capacity and the monthly

9   Capacity Payment to determine the total monthly payments to Mesaba for capacity. If the

10   plant is operating at the expected rate on an annual basis(with an average of 5% planned

11   outages and 4% unplanned outage after the ramp up period), then the CAF will calculate

12   out to equal one (1) and the full Capacity Payment will be paid to Mesaba for that year.

13   The formula calls for a reduced level of credit toward the CAF factor for hours

14   where the plant is run on natural gas. This is accomplished through the Natural Gas

15   Factor (NGF) which reduces the payments during periods where the plant is fueled in

16   whole or in part by natural gas. In Excelsior's original filing last December, the tariff did

17   not distinguish between hours where the plant was running solely on syngas versus a

18   syngas/natural gas blend. Mr. Osteraas therefore proposed on behalf of Excelsior in his

19   rebuttal testimony on October 10 an adjustment to the tariff calculation intended to

20   provide for a reduction in the capacity payment in proportion to any use of natural gas at

21   the plant. *See* Rebuttal Testimony of Thomas L. Osteraas, at Exhibit TLO-9. The CAF

22   calculation proposed in Mr. Osteraas's rebuttal testimony was:

23     $$\mathbf{CAF} = [AE* SFP + SME + AE * (1\text{-}SFP) *NGF] / (PE \times RUF)$$

1   In preparing this surrebuttal testimony, I noted one correction required to the tariff

2   formula. In order for the formula to achieve the intended result described in this

3   testimony, the formula should in fact be presented as:

4   **CAF** = [AE* SFP + SME + AE * (1-SFP) * <u>(1-NGF)</u>] / (PE x RUF)

5   The NGF causes a reduction in the capacity payment that phases in during the ramp up

6   period so that by year 4 of the project, the reduction in capacity payment for natural gas

7   utilization is 65%. This reduced tariff payment for all natural gas hours recognizes that

8   Mesaba should only be paid for the value of the capacity that is being delivered. When

9   solid fuel capacity is being provided, the full capacity payment can be achieved; when

10   natural gas capacity is being delivered, Mesaba is only paid for the value of a natural gas

11   unit; this 65% reduction, or to look at it the other way, payment at a 35% level,

12   compensates Mesaba for the value it is providing as a natural gas-fired combined cycle

13   unit, which would have lower capital costs to build and when operated on natural gas vs.

14   syngas, would provide approximately 5% fewer MW of capacity. The dramatic reduction

15   in payment also provides the Project with ample incentive to maximize the number of

16   hours the plant is running on syngas, as opposed to natural gas.

17 **Q**   **Can you explain how the capacity payment would be determined under various**

18   **operating scenarios?**

19   If there is no capacity available in a given hour, the payment for that period would

20   be zero, because the Available Energy would be zero. If the plant is running in a given

21   period on 100% solid fuel, then the Solid Fuel Percentage (SFP), which is the percentage

22   equal to the total MMBtu of syngas delivered to the Power Island during the period

23   divided by the total MMBtu of all fuel delivered to the Power Island during the period,

24   would be 100% and Mesaba would be compensated at the full value for that period. If the

1   plant is running during a given period on 100% natural gas, then NSP is not getting the

2   value of a solid fuel fired plant, but in fact, is utilizing the benefit of the self contained

3   "backup" capability of the plant. For this capacity, the SFP would be zero percent (0%)

4   and NGF would, after the ramp up period and through the remaining life of the PPA,

5   reduce the capacity payment for that period to 35% of the capacity payment for the plant

6   when it is available on syngas. In earlier years, there is a smaller level of reduction.

7   Finally, in those hours where the plant is running on a blend of syngas and natural gas,

8   the SFP would be less than 100%, and the NGF would come into play to provide a

9   proportional reduction in the capacity payment.

10   **Q**   **Can you provide an example of this last case?**

11   A   Let us assume that for a given month of 720 hours after the ramp up period, the

12   Mesaba plant delivered 603 MW at a 91% availability with a 5% planned outage and a

13   4% unplanned outage; however during this month, the mix of BTU's delivered to the

14   Power Island was a combination of 50% coal-derived syngas and 50% natural gas. In

15   order to calculate the CAF, we would end up with the following calculations.

16   **AE** = (603 MW * 720 hours * 91% availability) = 395,086 MWh

17   **SME** = (603 MW * 720 hours * 5%) = 21,708 MWh

18   **PE** = (603 MW x 720 hours) = 434,160 MWh

19   and

20   **RUF** = .96

21   **CAF** = (AE* SFP + SME + AE * (1-SFP) *(1-NGF)] / (PE x RUF) =

22   395,086 * .5 + 21,708 + 395,086 * (1-.5) * (1-.65) / (434,160 x .96) = 69.2%

23   Under this example, for this given month the plant would achieve expected level of 91%

24   availability, but would be meeting this availability level through the significant use of

1   natural gas (which would be the case if the plant ran the entire month on a 50/50

2   syngas/natural gas blend, or if the plant ran on 100% coal-derived syngas during 50% of

3   the available hours and 100% natural gas for the remaining 50% of the available hours, or

4   other combinations that resulted in the same level of natural gas consumption).

5   The end result demonstrates that this tariff aligns the interests of all parties. First

6   of all, Mesaba would only receive 69.2% of the expected capacity payment during this

7   month, significantly impacting cash flow and profitability. Secondly, the NSP customer

8   would be paying an appropriate payment for the value received, compensating Mesaba

9   for that portion of capacity that was providing electricity fueled by solid-fuel derived

10   syngas and to a much lesser extent, that portion of the capacity that was providing

11   electricity fueled by natural gas.

12 **Q   But what if the plant is unable to run at all on coal-derived syngas once the ramp-up**

13   **period ends?**

14 A   Under clause 11.1.B (2) of the PPA, NSP can terminate the PPA based on:

15   Seller's failure, after the forty-eighth (48th) full month following the
16   Commercial Operation Date, to maintain a CAF, pursuant to Section 8.1,
17   greater than seventy percent (70%) on a twelve month rolling average
18   basis. . . .
19
20 **Q   In order to achieve at least a 70% CAP, how much of the time must the plant**

21   **operate on coal-derived syngas?**

22 A   As the 50-50 syngas-natural gas example above illustrates, if the plant operates on

23   50% syngas and 50% natural gas during a given period, the CAF is 69.2%, so in order to

24   maintain a CAF of at least 70%, the plant must operate, at a minimum, on coal-derived

25   syngas a majority of the time. When combined with the fact, as described above, that the

26   capacity payment is also appropriately reduced based on the amount of natural gas

1   consumed, the tariff structure appropriately penalizes the Project for operating on natural

2   gas while providing a floor on the total amount of time that the plant must operate using

3   solid fuel.

4   **Q   Would you expect the plant to be operated in this 50-50 fuel blend manner?**

5   A   Of course not. I have used this operational scenario to demonstrate a key point for

6   NSP and ratepayers—that the plant must operate above 50% availability on solid fuel

7   after the 4th year of the contract in order to avoid termination. So in addition to the severe

8   economic penalty that Mesaba experiences when natural gas is used at the plant, the

9   ultimate incentive is the goal of keeping the contract from being terminated. In order to

10   achieve this, the plant must operate on solid fuel at least 50% of the time. Given that the

11   facility would still be providing cost-effective combined-cycle capacity in this downside

12   scenario, it is arguable that the termination provision gives NSP the right to decide

13   whether to terminate the PPA or continue to purchase cost-effective natural gas capacity

14   under the PPA.

15   **Q   Does this conclude your prepared surrebuttal testimony?**

16   A   Yes.

Exhibit ___ (RJS-6)

Indicates changes made in Surrebuttal Testimony of Renee J. Sass

Indicates changes made to Rebuttal Testimony of Thomas L. Osterass

~~Indicates deletion of from original Article 8.1~~

Article 8 - Payment Calculations

8.1   <u>Payment for Contract Capacity</u>. Commencing on the Commercial Operation Date and throughout the Term of this Agreement, NSP shall pay Seller a monthly Capacity Payment for Contract Capacity based on the following formula:

Monthly Capacity Payment = RC x CP x the lesser of CAF or 1.1, where:

   RC =   Reference Capacity = as certified in the Final EPC Certification.

   CP =   Capacity Price, stated in \$/kW-month, as calculated and set forth on Schedule I to this Agreement.

   CAF =   Capacity Availability Factor, calculated for the billing month
=   ~~[(AE + SME – (AENG)(NGF)] / (PE x RUF), where:~~
[(AE* SFP + SME + AE * (1-SFP) * <u>(1-NGF)</u>)] / (PE x RUF), where:

     AE = Available Energy, stated in megawatt hours (MWh), is the amount of energy associated with the Contract Capacity that is available from the Facility for scheduling and receipt by NSP, regardless of whether NSP schedules Contract Energy for receipt at that level, in the monthly billing period, taking into account all planned and unplanned deratings/outages of the Facility and regardless of the fuel source being used at the Facility.   The Contract Capacity which is unavailable for scheduling and receipt by NSP will be considered to be available for the purposes of determining Available Energy when, and only when: (i) the Contract Capacity is unavailable due to testing as described in Section 4.8(B); or (ii) the Contract Capacity is equal to or greater than 95% of Net Capability for such billing month; or (iii) the Contract Capacity and associated energy cannot be delivered by Seller or received by NSP due to an Excused Outage. Available Energy shall be calculated as the sum, for all hours in the billing period, of the amount of energy associated with the Contract Capacity available (as defined in this paragraph) during each individual hour. Notwithstanding the definition above, Contract Capacity may not exceed Net Capability in any monthly billing period;

3585671.1

SFP = the percentage equal to the total MMBtu of syngas delivered to the Power Island during the period divided by the total MMBtu of all fuel delivered to the Power Island during the period.

SME = Scheduled Maintenance Energy, stated in megawatt hours (MWh), is the amount of energy associated with the Contract Capacity that is **not** available from the Facility for scheduling and receipt by NSP, in the monthly billing period, due to Scheduled Outages/Deratings that meet the requirements for credited Scheduled Maintenance Energy specified in Section 10.1. Scheduled Maintenance Energy shall be calculated as the sum, for all hours in the billing period, of the amount of energy associated with the Contract Capacity that is unavailable during each individual hour due to a Scheduled Outage/Derating that meets the specified requirements for credited Scheduled Maintenance Energy;

AENG = ~~Available Energy on Natural Gas, stated in megawatt hours (MWh), is the amount of energy associated with the Contract Capacity that is available from the Facility for scheduling and receipt by NSP when the Facility is only able to operate using 100% natural gas as the fuel source, regardless of whether NSP schedules Contract Energy for receipt at that level, in the monthly billing period. During any time period that the Contract Capacity and associated energy cannot be delivered by Seller or received by NSP due to an Excused Outage, AENG shall be deemed to be zero. Available Energy on Natural Gas shall be calculated as the sum, for all hours in the billing period, of the amount of energy associated with Contract Capacity available (as defined in this paragraph) during each individual hour;~~