

## **ELECTRIC ADVISORY COMMITTEE**

**04/08/2009**

The regular meeting of the Electric Advisory Committee was called to order at 6:05pm by Chairman, Ron Beauchamp, in Room 102 of City Hall.

**Present:** Larry Arkens, Pete Baker, Ron Beauchamp, Ann Bissell, Glendon Brown, John Mellinger, Tim Wilson

**Absent:** None

**Also Present:** Mike Furmanski-Electric Superintendent, Jerry Pirkola-Power Plant Superintendent, Gil Cheves-Council Liaison

### **Approval/Corrections to the Minutes:**

Larry Arkens made a *Motion to accept the minutes of the 03/11/2009 regular meeting and the 03/18/2009 special meeting as presented. Motion was seconded by Baker and CARRIED UNANIMOUSLY.*

### **Approval/Adjustments to the Agenda:**

Glendon Brown made a *Motion to adjust the agenda to add agenda item #5 which would show the work the EAC has done to explore other options for the plant. He commented that there has been talk in the community that all options are not being fully explored. The motion was seconded by Arkens and CARRIED UNANIMOUSLY.*

Pete Baker made a *Motion to accept the amended agenda. The motion was seconded by Arkens and CARRIED UNANIMOUSLY.*

### **Conflict of Interest Declarations:**

Ann Bissell removed herself from comments on Agenda Item #4, as she is involved in the League of Women Voters who will be conducting a Power Plant forum on April 30, 2009.

### **OLD BUSINESS:**

None

## **NEW BUSINESS:**

### **Update-Electric Department**

Furmanski offered the following departmental update to the Electrical Advisory Committee.

1. New Development. The following work has been started and/or completed:
  - a. New Service on Landfill Road
  - b. Sheridan Road lights
  - c. Temporary service at Taco Bell
  
2. Distribution System Upgrades/Maintenance. The following upgrades or maintenance needs have been completed on the electrical distribution system:
  - a. Tree Trimming
  - b. Pole numbering
  
3. P.A. 295

Both the Renewable Energy Plan and the Energy Optimization Plan for the City of Escanaba were completed and filed with the MPSC. A public hearing for each plan was held on April 2<sup>nd</sup>, and we are accepting comments for 30 days. The plans are available on the City's website.

Furmanski also went over the NYMEX Look-Alike index for coal prices which members received in their packets.

Bissell asked if he had talked with the coal companies as they had discussed in the last meeting. Furmanski said Atty Ralph Peterson checked over the contracts and found that we would have to pay the companies their expected profits for the year. He said what the City did offer the companies was a 2 year deal where we would sign with them through 2010 lake season and they could possibly give us a break. The break offered was not much. The City has until Friday, 04/10/2009 to give them an answer and through discussions amongst City administration, it looks as if we will be telling them no thanks. Furmanski reported another load coming on the 15<sup>th</sup> of April that is priced at \$95/ton and it will be eastern coal with a 2008 price.

Bissell asked if it was too soon to look at bids for 2010. Furmanski said we have always started the bids in the fall and the fuel procurement agent said if you try at an earlier time, the companies will always add on extra just for their safety if the market goes up. The bids have always been called in in November for the next shipping season.

### **Update-Power Plant**

Pirkola reported that the Unit 1 maintenance outage is complete and was put back on-line on Monday, March 23. Normal maintenance was completed on the boiler. The turbine and generator bearings were inspected and UT'd. The bearings were found in good shape and were put back in with no repairs needed.

Unit #2 major overhaul began on March 23<sup>rd</sup> and is continuing through April into the first week of May. Some minor repairs are required to the turbine rotor and diaphragms. All 3 bearings will be re-babbitted. Most of the generator wedges are loose; re-wedging will be recommended. Normal boiler maintenance is being performed during the major overhaul.

Unit #2 stack is being relined. The gunite was found in bad condition during the inspection. Repairs will be made to the outer shell before being re-insulated. The inspection of Unit 1 stack also indicated the gunite is in bad shape and should be replaced during the major overhaul next year.

Peak time power for the maintenance outages is being purchased in the MISO Day ahead market, which has averaged \$42.10 per MWhr in March. A total of 6,536 MWhrs have been purchased in March in both the Real-Time and Day Ahead markets for a total of \$202,625 which averages to \$31.00 per MWhr.

As of the end of March, approximately 31,1500 tons of coal remained on the dock. Based on the current burn rate, this coal may last through August.

With regards to the O&M budget, O&M costs are not far out of range. Fuel costs are lower than expected because we purchased more economical power than the estimate. Year to date the Plant overall operating costs are currently below budget.

The CT has not operated yet in 2009.

Brown asked Pirkola for a projected total maintenance costs for March and April. Pirkola said the overhaul was projected at \$972,000, the re-wedging was approximately \$75,000 but other costs were coming in lower than projected. Brown asked if that included the stack repair, to which Pirkola responded no. The stack relining would be approximately \$150,000 and the metal repair had been approved for \$20,000. Brown responded then that the projected costs would be over \$1,000,000 to which Pirkola responded yes.

Brown had a question on the Plant variable cost of production vs the purchased power cost and made up a slide to show the information that he had derived. He said the total generation costs he came up with were higher than Pirkola had according to his spread sheets. Pirkola advised that his cost did not include the energy sales and purchases which would then put his and Brown's cost about the same. Brown presented the following information on a slide for all to see:

**Escanaba Power Plant Variable Cost of Production  
Versus  
Purchased Power Cost**

**Escanaba Power Plant Generation Cost**  
(July, 2008 – February, 2009)

Total Generation Cost	=	<u>\$7,608,273</u> 89,443 MWH	=	\$85.06 / MWH
Variable Cost (Coal & Ash)	=	<u>\$4,809,467</u> 89,443 MWH	=	\$55.32 / MWH
Fixed Cost (Salaries, Maintenance, Admin)	=		=	\$29.74 / MWH

### **Purchased Power Cost**

March, 2009 Maintenance Shutdown

- Real Time and Day Ahead Price Averaged = \$31.00 / MWH
- Peak Time Day Ahead Price Averaged = \$42.10 / MWH

**During the March, 2009 Maintenance Shutdown,  
it was cheaper to have the boilers shut down and purchase power, while also paying  
the plant fixed costs (Salaries, Maintenance and Administration).**

Pirkola pointed out that these costs are much cheaper now in March, around \$20/MWh less than average. Brown asked if these numbers could be tracked. He said it is important to know if we are taking advantage of maximizing the power and buying when we can and making it when we should. Pirkola said with the cheaper power right now, we have been buying most of our power over the past 2 months.

Baker asked the difference between the Real Time Market and the Day Ahead Market. Pirkola responded by saying the Day Ahead Market is for purchasing certain amounts of power where the marketers put in a bid by 9am or 10am and the suppliers rates go up or down depending on the demand. The Real Time Market is right now, where when you see the price is low, you back off of generation and get the lower price. Baker asked if he was correct in assuming that these decisions are made by humans looking at screens and making judgement calls. Pirkola responded that that was correct.

Baker asked Furmanski with the power costs the rate they are now, why don't we just go ahead and keep buying on the day ahead market and real time market as we are doing now with 1 turbine down. Furmanski said that as Pirkola said, this year the rate per

MWh is much cheaper than last year when we were paying \$75/MWh. He said there has been talk that once the turbine is ready to go again, if the power costs are still cheap, they may not start it up.

Furmanski gave handouts of the City's power purchase history. In discussion, member said they wanted more time to look over it as it contained some good information. It was agreed that an agenda item would be added to the Old Business for the May meeting pertaining to the power purchase history.

### **Presentation Potential Plant Purchasers**

Furmanski reported that the City of Escanaba received 3 (three) proposals to purchase the power plant on January 16, 2009. The 3 (three) parties have been invited to make a presentation to the EAC explaining their planned use for the plant. Only 1 party was able to make it to tonight's meeting due to scheduling conflicts, but they did supply letters to Tom Butz of Power Systems Engineering (PSE) that he will highlight. Traxys will do their presentation and will then be asked to leave so there will be no sharing of confidential material between the parties.

Furmanski reported that Tom Butz will give a brief power point presentation to start the process off and to end it. The power point presentation is added to the minutes as **ATTACHMENT A.**

The TRAXYS power point presentation is added to the minutes as **ATTACHMENT B.** Upon completion of the presentation, the floor was opened up to questions and answers by both the EAC membership and the public

Brown questioned the forecast of the percentage of biomass that would be open loop vs closed loop. They advised that they have a goal of closed loop maximization based on the availability of acreage. If you are basing it on the production tax credits, closed loop definitely carries a significant premium.

Baker commented that in the presentation they commented on the retention of employees. He asked how that could possibly play out with Escanaba. They responded that they hopefully would be able to keep the same number of employees. Current employees would be looked at as they are the most knowledgeable of the plant. Employees would have to go through the company's hiring process as if they were being hired on new, such as a drug screening and training assessment. Baker asked if the current employees would be looked at first, to which they responded yes.

Mellinger asked what rule they used as far as the radius of the land from the plant when dealing with the closed loop. They advised the closer to the plant the better, however the rule of thumb is a 50 mile radius.

Pirkola asked what kind of environmental remedial measures will take place. They responded that a Baseline Environmental Assessment will have to be done and then a competent 3<sup>rd</sup> party firm will be brought in after that and a plan set up.

The public was then invited to ask questions of the TRAXYS representatives.

Q/ types of biomass that would be used. A display showing the types was available for all to look at and included wood residues such as tree tops and bark, grasses grown locally, building debris, railroad ties, paper mill residue and fuel derived from tires.

Q/what is the output for the L'Anse plant. L'Anse is dispatchable to 17.7Mw.

Q/where did the workforce come from for the Warden Station. The salaried people came off the street, but had previous experience. The remaining workforce came through a hiring process as the plant was not operating with current employees when it started up.

Q/have you considered gasification or wind augmentation. They responded that gasification has been looked at and is very expensive at this time. The wind option is not being looked at as it could only be considered as a supplemental source.

Q/The American Transmission Company (ATC) website shows that the transmission lines are not capable at this time of transferring power efficiently. What would be done to insure we have reliable power. They said that more investigation has to be done on the transfer capabilities, and that any long term outages would be coordinated with ATC to get their approval.

Q/Could you, in broad terms, explain the agricultural impact of the biomass on the area as far as numbers of jobs, and dollars for the area as it was also affected in the Ontonagon area. They said further study would have to be done but for the Ontonagon area some rough numbers were put together by a person but they did not have the information readily available.

Q/According to your proposal, would the power generated here be used exclusively for the City of Escanaba or sold and replenished from your other sources and what effect would this have on the reliability. Representatives responded by saying that the first part of the question would be hard to answer simply. The response to the liability portion was that reliability would not change. He said load and generation will be treated very differently and separately. They will dispatch to the price of the market.

Q/A question was asked on tax credits and why TRAXYS was able to do what they do and not the City. Representatives responded that they were a private corporation and eligible for tax credits where the municipals don't pay taxes and thus are not eligible. TRAXYS also said they have other assets the City does not have.

Q/If you buy the plant, will you be supplying the power to the City. They responded yes, according to the proposal they submitted.

Q/If you get the city contract, what portion of the city load would be declared to ATC. They said all of it.

Q/What are you offering as far as rates. They responded that they have submitted with their proposal a 10 year fixed rate with a fixed escalator to the City.

Q/If you buy the plant, what is the timeline for the conversion. The timeline is approximately 20 months, depending on the purchase and the permitting. Environmental issues and business issues still have to be looked at such as the coal contract.

Committee member Brown commented that the EAC has been in detailed discussions with ATC and some transmission concerns will not be resolved until the City declares a load. That is why he was happy to hear that if TRAXYS was to get the plant, they would declare all of the City's load.

Q/A comment from the audience was that on the ATC website they say they are maxed out right now. She questioned ATC's capability of supplying us through the grid when

we shut down one unit for a time, she feels we are at the mercy of the grid at a time when they are maxed out and will it be reliable. Member Brown answered that in conversations with ATC, the City has been told that they need to declare a load. There is a 3 year time frame to be working in. Only a section needs to be upgraded and ATC says that will be done when the load is declared.

Brown commented that the City has been paying higher electric costs than their other regional competitors, and we have been supplementing for all the others in the region by generating here and supplying and keeping congestion charges lower. An audience member asked if we were making money also by doing this, to which EAC members responded no. Furmanski pointed out that from May 14 – Aug 22, 2007, one unit was down at the plant. We had no problem meeting City load during that time, reliable energy can get here.

Q/Do you do central dispatching? TRAXYS responded that they do do central dispatching with equations for each facility.

TRAXYS presentation was finished and they were asked to go out while the other 2 companies information supplied was presented to committee members by Tom Butz from PSE. This information is part of the power point ATTACHMENT A. Butz commented that he would be giving a summarization of what DTE and TriStar have presented to him. However, he said from tonights meeting so far, it was evident that one on one with the company itself in a Q&A format is very valuable as compared to just asking the questions and forwarding them on to the companies to answer. He thought maybe we should schedule another special meeting and try to get the other 2 parties in to do the other one on one situation. Members discussed that they would like to have the other 2 companies come in, but requested Butz go ahead with his brief presentation as to what the other 2 parties had presented. Butz was given the go ahead to consult with the other 2 parties to try and get them in to a special meeting.

Baker later commented that maybe we need to keep it a level playing field. The other companies had been asked to come in and do a presentation and Q&A session and they did not show, only 1 did. He was unsure if another opportunity should be given.

Baker commented that as an EAC member, they see that there are currently 3 firm proposals offered. From his understanding, there were others out there who did not respond because of the fact that they did not see Escanaba getting to this point as it has been under discussion for over 9 years. Baker said he sees nothing in there that if the City did get a “yes” vote, that other companies would be restricted from coming back in with an offer. Butz commented that was so, the RFP left room for others to come in. He said the plant sale is not the money maker in the issue. He said the City would look to purchase full power requirements and still have the desire to keep the plant running. Basically, look at finding a “good home for the plant.” Baker felt this was the issue that was not getting out there. He said he want to sell the plant, keep the tax base, and buy cheaper power and generate new industry, it is like having the best of both worlds. Butz commented that this is a decision the City would have to make. Baker again said that after the vote, putting these proposals out there on display, other companies will now see them and have something to shoot for.

Beauchamp asked again if they felt the special meeting should be held for the 2 companies that did not make it. Mellinger felt that at this point, they should be allowed

to come in. Baker felt that they should not be pressured and made to feel it was mandatory. Members felt that it should be before April 29<sup>th</sup>, 2009.

### **Announcement-Power Plant Forum**

Furmanski made the announcement that the League of Women Voters will be sponsoring a voter's forum on April 30<sup>th</sup>. No time has been set yet, however they have asked Charter to televise it and gave the timeframe between 6pm and 9pm. Announcements will be forthcoming when specific times have been set.

### **EAC Activity on Biomass and Efficiency Upgrades**

Brown commented that there have been questions in the community as to how thorough a job the EAC has done in looking at biomass and efficiency upgrades for the plant. He presented his findings to the public on why and how the EAC came up with the recommendation that they did. His findings are **ATTACHMENT C** to the minutes.

Brown concluded his presentation by saying that the EAC concluded it was not smart to continue on in studies as the plant is inefficient and that is why the EAC made the recommendation that they did.

### **Public Comment**

Bill Gasman comment that the committee did an outrageous job with all the facts and just wanted to say he did not quite understand how 3 private proposals could come in buy the plant, convert it, and make money and we the City, who already own it cannot retain it and convert it. Beauchamp asked him what he would hope to achieve by having the City pay to convert it. Gasman responded that he wished we could continue on with what we have done for the last 50 years and protect our assets.

John Anthony approached the podium and commented that he just wants what is best for Escanaba and Delta County. He said right now, as a citizen and a business owner, he is being faced with a 20% hike in electrical rates. As he sees it, his understanding is that right now, there is no other option out there and those rate hikes will be there. He was told that this was true. He said he supports a "yes" vote and heads up a committee of people to get a "yes" vote. He went on to say that he fully recognizes that the committee did do their homework and there is a need to remove the handcuffs we are in to get flexibility to review other options. He said the conviction of the committee was important and he felt for the citizens, there is the need to get the other 2 parties here so the citizens have an opportunity to talk one on one with them.

Brad Mantela stepped to the podium and said he too was a member of the Energize Escanaba-Vote Yes committee and asked about the Voters Forum on April 30<sup>th</sup>. He asked who would be involved in it, if it included EAC and Council. Furmanski told him it would be run by the League of Women Voters. Speaking on their behalf, but not going to be involved in this matter, Bissell said that typically in the past their forums have worked in this manner but this could change:

- Unbiased moderator
- Opening statements made by both sides; sometimes rebuttals
- Q&A

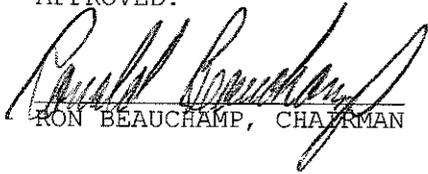
- Closing statements
- Equal number of speakers for both sides
- There must be a consensus

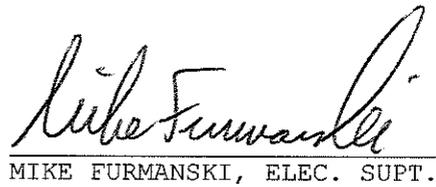
**Announcements-Committee Members/Administration**

Baker told members of the committee that during the past week, he and a City Council person attended a session with senior citizens to answer their questions as well as making a public service announcement.

Meeting adjourned: 8:38pm

APPROVED:

  
RON BEAUCHAMP, CHAIRMAN

  
MIKE FURMANSKI, ELEC. SUPT.

## Escanaba Plant Sale Evaluation Plant Purchase Presentations

Tom Butz  
Power System Engineering  
April 8, 2009

1

## Agenda Item 2

### Escanaba Power Plant Variable Cost of Production Versus Purchased Power Cost

#### Escanaba Power Plant Generation Cost (July, 2008 - February, 2009)

Total Generation Cost	=	\$7,608,273 89,443 MWH	=	\$85.06 / MWH
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2

## Agenda Item 2 (Cont)

### Purchased Power Cost

March, 2009 Maintenance Shutdown

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## Areas to Discuss

- Presentations Approach
- Traxys Presentation
- DTE Presentation and Discussion
- Tri-Star Summary and Discussion
- Outline of Options

4

## Parties Providing Plant Purchase Proposal

- White Pine/ Traxys
- DTE Energy Services
- TriStar Energy

5

## Presentations Approach

- Date Chosen Based on Regularly Scheduled EAC Meeting
- After Disclosing Intent of Having Parties Present Information – Only Traxys had the Date Open
- Decided to Have Non-Present Parties Write Information in Document Form
  - Tom Butz to Provide Powerpoint Summary
    - Have Traxys Representatives Out of Room During Presentation

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### **Presentations Approach (Cont)**

- Traxys will Present Information
  - Traxys Will Present First
- Presentation Format
  - 10 Min Presentation
  - 10-15 Questions and Answers
    - DTE and Tri-Star – Gather Any Questions And Get Response

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### **TRAXYS PRESENTATION**

8

### **Summary of DTEES Write-up**

- Standing With Initial Terms Proposed
- DTEES – Ownership Interests in Two Plants
  - One Regional Plant – Older Coal Unit Converted to Biomass
- Intent to Convert Plant to Biomass
- Initial Discussions with Two parties Interested in Purchasing Power
  - Need Exclusivity to Definitively Nail Down Terms
  - 9-12 month timeframe

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### **Summary of DTEES (Cont)**

- Accepts June 2011 Closing Date
- Capital Funds from Internal Sources

10

### **Questions for DTEES?**

11

### **Summary of Tri-Star Write-up**

- New Company Forming with Focus on Renewable Energy
- Working with Large Scale Investor
  - Solid infrastructure
  - Long History
  - Capital Resources
- Power Sales – Seeking Sales of Renewable Energy
  - Starting with Short-term Seeking Long-term

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## TriStar Write-up (Continued)

- Capital Funds will be needed to convert plant to biomass fuel
  - Seek Federal Funds
- Diverse Fuel Mix Expected
  - Transition from 90% Coal to Range of Fuels
    - Biomass, Tire Derived Fuel, Switchgrass, and Paper Sludge
- Escanaba will be Center of Operations
  - Committed to Continued Operation of Plant
  - Employees from Escanaba Area – (Mgr 30 yrs Exp)

13

## Questions for TriStar?

14

## Outline of Options

- Vote is "Yes"
  - Choose Best Plant Sale Proposal-
  - Choose Best Power Purchase Proposal -
  - Commitment needed to know more information
  - Finalize Terms of Proposals
  - IF Finalized Terms of Agreements are Acceptable, Draft Agreements
    - No Obligation to Sell Plant and Purchase Power
  - If Acceptable Terms, Decide on Transmission Approach
- Vote is "No"
  - Determine O&M Provider
  - Consider Other Plant Alternatives
    - Business as Usual
    - Purchase Power and Sell Plant energy to Market
    - Biomass repowering
    - Other

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## Questions

16

## STUDY Activities (2008 – 2009):

- Regional Biomass Fuel Cost and Availability Assessment
- Preliminary engineering evaluation of plant conversion to biomass fuel while minimizing production capacity losses:
  - Utilized Biomass Boiler expert
  - Defined likely plant necessary upgrades
  - Estimated plant capacity and efficiencies utilizing biomass fuels.

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## STUDY Activities (2008 – 2009): (Cont)

- Issued RFP for Biomass conversion study
- RFP response evaluation (6 proposals)
- Based on projected investment and generation costs, and the tax credits which are only available for private developers, the EAC recommended tabling further City funded studies.
- The EAC also recommended an RFP process to evaluate selling the power plant to private investors for biomass conversion.
- PSE issued RFPs and evaluated the responses.

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### Private versus Municipal Conversion Of Power Plant to Biomass Fuel

1. Private ownership of the power plant is eligible for the Federal Renewable Electricity Production Tax Credit. The federal law was revised in February, 2009 providing:

- \$21/MWH tax credit for closed loop biomass fuels (e.g., crop based fuels such as grasses) which is approximately 25% of the current Escanaba power plant generation costs.
- \$10/MWH tax credit for open loop biomass fuels (e.g., tree harvesting residues from pulpwood and sawlog harvesting) which is approximately 12% of the current Escanaba power plant generation costs.

What biomass business can successfully compete long term with a competitor that has a 12 to 25% cost advantage?

- In service deadline for eligibility is 12/31/13 which is less than 4 years from today.
- Duration of credit eligibility is 10 years.

### Private versus Municipal Conversion Of Power Plant to Biomass Fuel (Cont)

1. If the City used municipal bonds to finance a portion of biomass conversion, no more than 10% of the power plant output could be sold in the renewable energy market.
2. Potential increase in the City tax base, or payments in Lieu of Taxes.
3. The City has no expertise in:
  - a. Biomass fuel purchases
  - b. Plant operations or maintenance
4. Either Biomass conversion option can retain plant jobs and add regional fuel procurement jobs.

### Efficiency Upgrade Comments

#### Efficiency Upgrade of Existing Power Plant

- Dominant factor in overall steam plant efficiency is the steam pressure and temperature design for safe operation.
- 3 to 5% efficiency upgrades may be possible with major multi-million dollar upgrades to improve combustion and heat transfer efficiency.
- 3 to 5% efficiency upgrades still result in an inefficient and non-competitive power plant.
- Compare Escanaba power plant with other regional power plants:

### Summary of Plant Efficiency

Power Plant	Boiler Steam Pressure, PSIG	Heat Rate, BTU's fuel/k-WH	% higher fuel usage in Escanaba plant
Escanaba 25 MW	640	14,500	
L'Anse Warden Plant sold by IUPCO to White Pine Electric for biomass conversion	900	13,900	4
WE Presque Isle in		11,090	31
300 MW design evaluated by Sargeant & Lundy study for Escanaba and WPP	2,535	10,284	41
New Supercritical Coal Fired Plants in • WPS Weston 500 MW 2008 startup • WE twin 615 MW (2009 and 2010 startups)	3,500+	8,600	69

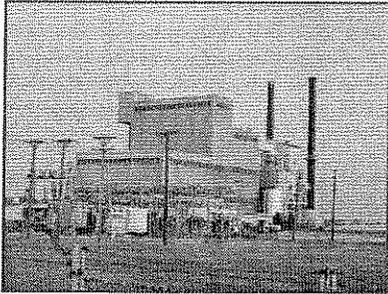
### Efficiency Summary

The Escanaba power plant requires 69% more fuel BTU's to produce a kilowatt hour of electric energy than the new large scale base load power plants being built in Wisconsin.

Overall efficiency of a steam power plant is determined by the following factors:

1. Fuel combustion efficiency
  - a. Coal combustion process:
    - i. Minimize excess air usage and heat losses out the smoke stack
    - ii. Reduce unburned coal in ash from the boiler
2. Heat transfer efficiency (hot combustion gases to steam)
  - a. Combustion gas path through boiler that minimizes short circuiting
3. Design of boiler, steam turbine and steam condenser
  - a. Steam pressure and temperature

### Escanaba Power Plant Purchase Proposal



TRAXYS

Presented to Electrical Advisory Committee on 4/8/2009

### Locations



### Traxys-Facts & Figures

- > In FY 2008 Traxys had \$4.5 billion turnover
- > 250 employees world wide
- > 25 global offices
- > 50 employees in the U.P., Michigan



TRAXYS

### Traxys - Investments & Shareholder Partners



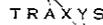
> Pegasus Capital Advisors – over \$1.5 billion under management



> Kelso & Company - \$4.5 billion under management



> Resource Capital Funds - \$1 billion under management



> Traxys Management - the Traxys Management Team is made up of seasoned industry experts from around the globe.

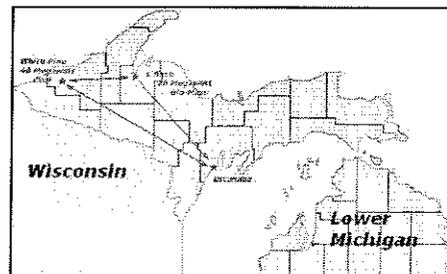
TRAXYS

### Traxys – Energy & Power

- > U.S. operating facilities that have annual capacity in excess of 40 million tons for trans loading, blending and storage of coal and other commodities
- > Energy generation capabilities of 60 Megawatts in Upper Peninsula, Michigan
- > U.P. Power Marketing – a fully licensed AES (Alternative Electric Supplier) brokering wholesale and retail power

TRAXYS

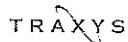
### Traxys – Energy Distribution



TRAXYS

### Traxys – Energy Assets

- > White Pine Electric Power, LLC.
  - ✓ 40 Megawatt coal generation
  - ✓ Serving a wholesale contract since 2004
  - ✓ Plant availability well above utility grade standards
  - ✓ 5 years without Lost Time Injury



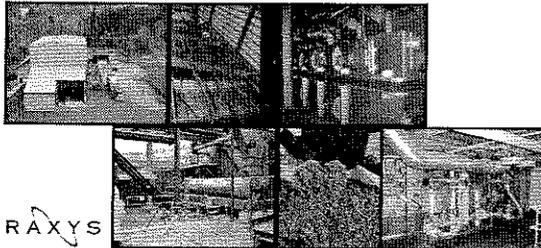
### Traxys – Energy Assets

- > L'Anse Warden Electric Power, LLC.
  - ✓ 20 Megawatt biomass generation
  - ✓ 40,000 lbs per hour "green" process & heating steam
  - ✓ Commercial operation since November 2008
  - ✓ First green plant to come on-line in Michigan since Governor Granholm and the House passed Senate Bill # 213 (the "RENEWABLE ENERGY PORTFOLIO AND ENERGY EFFICIENCY ACT").
  - ✓ LWEC has been nominated for an innovation award by the State of Michigan



### Traxys – Power Plant Conversion Expertise

- > \$48 million Capital Expenditure in the U.P. to convert 2 formerly idle coal plants to dispatchable assets
- > Strong team of management, engineering, permitting and environmental staff working closely with State and Federal Agencies to promote economically viable renewable energy



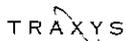
### Traxys – Environmental Issues & Concerns

- > White Pine Power Plant is located on a previously active mining site and has over 40 years of operation history
- > With Traxys expertise and consultants, the transfer and purchase was done with mitigation of risks to both parties
- > J.H. Warden site (L'Anse, Michigan) operated as a coal facility starting in the late 1950s until the 1990s with coal deliveries and ash containment on site. Through the BEA (Baseline Environmental Assessment) process, both the selling utility and Traxys had full confidence in the process to mitigate environmental liabilities.
- > The entire clean up of the site activities was completed within 4 months

Traxys, if the successful purchaser of the plant, envisions a similar process, giving assurance to the City of Escanaba that all pre-existing contamination and post purchase activities will be handled in a ~~efficient~~ **efficient** manner and adhering to all MDEQ, State, Federal and local concerns.

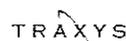
### Traxys – Long Term Vision of the Plant

- > Run unit # 1 on coal
- > Convert unit # 2 to biomass
- > While converting to biomass, the balance of the city load will be served by U.P. Power Marketing
- > Run unit # 2 on biomass and convert unit # 1 to biomass



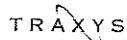
### Traxys – Escanaba Investment

- > Retention existing power plant jobs
- > About 75 direct and indirect jobs are created for every 10,000 acres of willow crops
- > Local land owners farming and harvest opportunities
- > 100 construction jobs for 20 months locally
- > Traxys Capital Expenditures of \$25 million locally
- > Increased Tax Revenue for the City of Escanaba



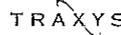
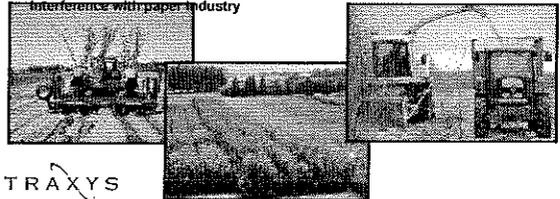
### Traxys – Existing Power Plant

- > The entire city load will be supplied from the plant after conversion of both units to biomass has been completed
- > The city's excess loads will be supplied by U.P. Power Marketing
- > Combustion turbine unit will remain as back up capacity
- > Existing work force will be offered employment with Traxys
- > Since the load will be served from the plant, limited transmission upgrades are needed



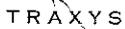
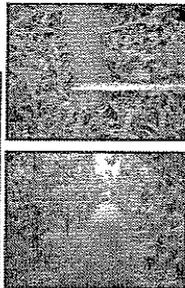
### Traxys – Fuel for Plant

- > While generating on coal, Traxys' Carbon Division will supply coal to the plant
- > Major portion of the biomass fuel needed for the plant will be grown on leased acreage in close proximity to the plant
- > The balance of wood is low grade wood residues, bark, diseased wood, pallets, building debris, tree tops and trimmings
- > High grade wood chips are not in the mix, so will cause no interference with paper industry



### Traxys – Closed Loop Biomass

Working with Michigan State University professor Ray Miller, testing with hybrid willow and poplar has been proven to be successful in both the White Pine and

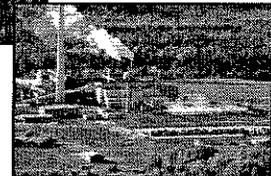


### Traxys – Questions



White Pine Electric Power, LLC.

L'Anse Warden Electric Company, LLC.



**Escanaba Power Plant Variable Cost of Production  
Versus  
Purchased Power Cost**

**Escanaba Power Plant Generation Cost**  
(July, 2008 – February, 2009)

Total Generation Cost	=	<u>\$7,608,273</u> 89,443 MWH	=	\$85.06 / MWH
Variable Cost (Coal & Ash)	=	<u>\$4,809,467</u> 89,443 MWH	=	\$55.32 / MWH
Fixed Cost (Salaries, Maintenance, Admin)	=		=	\$29.74 / MWH

**Purchased Power Cost**

March, 2009 Maintenance Shutdown

- Real Time and Day Ahead Price Averaged = \$31.00 / MWH
- Peak Time Day Ahead Price Averaged = \$42.10 / MWH

**During the March, 2009 Maintenance Shutdown,  
it was cheaper to have the boilers shut down and  
purchase power, while also paying the plant fixed costs  
(Salaries, Maintenance and Administration).**

## Conversion of Power Plant to Biomass Fuel

### STUDY Activities (2008 – 2009):

- Regional Biomass Fuel Cost and Availability Assessment
- Preliminary engineering evaluation of plant conversion to biomass fuel while minimizing production capacity losses:
  - Utilized Biomass Boiler expert
  - Defined likely plant necessary upgrades
  - Estimated plant capacity and efficiencies utilizing biomass fuels.
- Issued RFP for Biomass conversion study
- RFP response evaluation (6 proposals)
- Based on projected investment and generation costs, and the tax credits which are only available for private developers the EAC recommended tabling further City funded studies.
- The EAC also recommended an RFP process to evaluate selling the power plant to private investors for biomass conversion.
- PSE issued RFPs and evaluated the responses.

## **Private versus Municipal Conversion Of Power Plant to Biomass Fuel**

1. Private ownership of the power plant is eligible for the Federal Renewable Electricity Production Tax Credit. The federal law was revised in February, 2009 providing:
    - \$21/MWH tax credit for closed loop biomass fuels (e.g., crop based fuels such as grasses) which is approximately 25% of the current Escanaba power plant generation costs.
    - \$10/MWH tax credit for open loop biomass fuels (e.g., tree harvesting residues from pulpwood and sawlog harvesting) which is approximately 12% of the current Escanaba power plant generation costs.
- What biomass business can successfully compete long term with a competitor that has a 12 to 25% cost advantage?**
- In service deadline for eligibility is 12/31/13 which is less than 4 years from today.
  - Duration of credit eligibility is 10 years.
2. If the City used municipal bonds to finance a portion of biomass conversion, no more than 10% of the power plant output could be sold in the renewable energy market.
  3. Potential increase in the City tax base, or payments in Lieu of Taxes.
  4. The City has no expertise in:
    - a. Biomass fuel purchases
    - b. Plant operations or maintenance
  5. Either Biomass conversion option can retain plant jobs and add regional fuel procurement jobs.

## Efficiency Upgrade of Existing Power Plant

- Dominant factor in overall steam plant efficiency is the steam pressure and temperature design for safe operation.
- 3 to 5% efficiency upgrades may be possible with major multi-million dollar upgrades to improve combustion and heat transfer efficiency.
- 3 to 5% efficiency upgrades still result in an inefficient and non-competitive power plant.
- Compare Escanaba power plant with other regional power plants:

Power Plant	Boiler Steam Pressure, psig	Heat Rate, BTU's fuel/kWH	% higher fuel usage in Escanaba plant
Escanaba 25 MW	600	14,500	
L'Anse Warden Plant sold by UPPCO to White Pine Electric for biomass conversion	900	13,900	4
WE Presque Isle in Marquette	-	11,090	31
300 MW design evaluated by Sargeant & Lundy study for Escanaba and WPPI	2,535	10,284	41
New Supercritical Coal Fired Plants in Wisconsin <ul style="list-style-type: none"> <li>• WPS Weston 500 MW 2008 startup</li> <li>• WE Oak Creek twin 615 MW (2009 and 2010 startups)</li> </ul>	3,500+	8,600	69

**The Escanaba power plant requires 69% more fuel BTU's to produce a kilowatt hour of electric energy than the new large scale base load power plants being built in Wisconsin.**

Overall efficiency of a steam power plant is determined by the following factors:

1. Fuel combustion efficiency
  - a. Coal combustion process:
    - i. Minimize excess air usage and heat losses out the smoke stack
    - ii. Reduce unburned coal in ash form the boiler
2. Heat transfer efficiency (hot combustion gases to steam)
  - a. Combustion gas path through boiler that minimizes short circuiting
3. Design of boiler, steam turbine and steam condenser
  - a. Steam pressure and temperature