**MEETING NOTICE**

**STUDY SESSION**

Of The

**TRAVERSE CITY LIGHT AND POWER BOARD**

Will Be Held On

**MONDAY, January 4, 2010**

At

**4:00 p.m.**

In The

**TRAVERSE CITY LIGHT & POWER SERVICE CENTER**
1131 Hastings Street

Traverse City Light and Power will provide necessary reasonable auxiliary aids and services, such as signers for the hearing impaired and audio tapes of printed materials being considered at the meeting, to individuals with disabilities at the meeting/hearing upon notice to Traverse City Light and Power. Individuals with disabilities requiring auxiliary aids or services should contact the Light and Power Department by writing or calling the following.

Jessica Dezelski,
Administrative Assistant
1131 Hastings Street
Traverse City, MI 49686
(231) 932-4543

**AGENDA**

Roll Call

1. Discussion of wood fueled biomass vs. natural gas electric generation (Rice)
2. Discussion of TCL&P Energy Supply Communication Plan (Schneider)
3. Public Comment

Traverse City Light and Power
1131 Hastings Street
Traverse City, MI 49686
(231) 922-4940

Posting Date: 12-30-09
4:00 p.m.

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# Natural Gas vs. Wood Fueled Biomass Electric Generation Plants

Light & Power Board Presentation
Study Session January 4, 2010

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## General

- Staff has been analyzing electric generation asset acquisition per the L&P Board approved Strategic Plan
  - Local Generation
  - Competitively Priced
  - Diversified Generation Portfolio
  - Renewable

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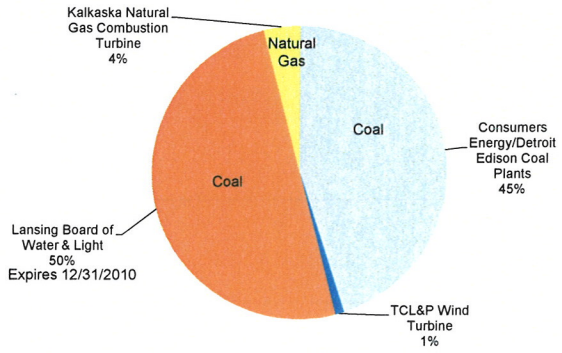
## Electric Energy Mix 2009 (330,000,000 kw hr)

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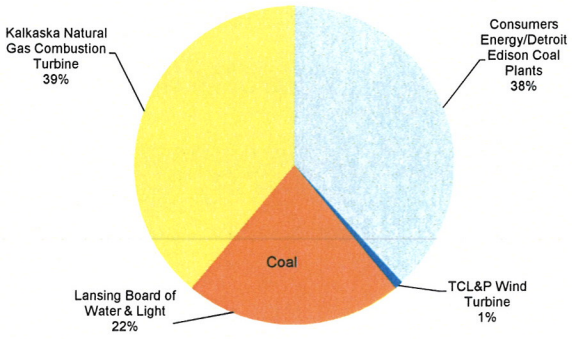
## Electric Generation Capacity 2009



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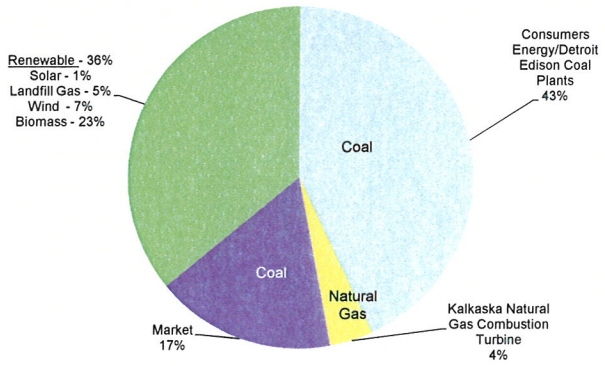
**Electric Energy Mix**
**2015**

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# Natural Gas Assumptions

- Alternatives for natural gas generation would include:
  - Combustion Turbine (peaking)
  - Simple Cycle – (steam turbine)
  - Internal Combustion Engine
  - Combined Cycle most efficient but not available < 50MW
- Internal Combustion Engines would provide the highest efficiency and is applicable to local CHP application
  - 6MW max – use two (2) engines

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# Advantages

| | Wood | Natural Gas |
|---|---|---|
| Pricing ($/MWHr) | 90 (w/o REC) | 70 |
| NOx/SOx Particulate | X | X |
| Renewable Fuel Source | X | |
| Future Federal $CO_2$ Mandates | X | |
| Renewable Energy Credit ($5-$50/MWHr) | X | |
| Supports "Green" Initiatives | X | |

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# Advantages

| | Wood | Natural Gas |
|---|---|---|
| Dependency on Foreign Oil | X | X |
| CREB Financing | X | |
| Renewable Grants | X | |
| Forestry Industry Jobs | X | |
| DEQ/EPA Permitting | X | |
| Electric Generation Diversity | X | |

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# Advantages

| | Wood | Natural Gas |
|---|---|---|
| Back-up Fuel | X | |
| Healthier Forests | X | |
| Fuel Truck Traffic | | X |
| Ash Handling/Disposal | | X |
| On/Off Site Fuel Storage | | X |
| O&M Costs | | X |

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# Advantages

| | Wood | Natural Gas |
|---|---|---|
| Capital Costs | | X |
| Plant Footprint Size | | X |
| Seasonal Fuel Availability | | X |
| Particulate Emission Control | X | X |
| Fuel Price Volatility (NYMEX) | X | |
| Noise Abatement | X | |
| Pipeline Tariff | X | |

# Draft TCL&P Strategy and Plan:

## Achieving 30% Renewable Generation By 2020

*Results of December 2, 2009 meeting*

Following a nearly 3-hour facilitated strategy and planning session, conducted in public with citizen participation in the final 30 minutes, TCL&P board and staff agreed to the following:

## I. Priority Action Steps to Achieve 30% Renewable Generation by 2020

1. Choose appropriate renewable generation source – 14 votes (4 board, 10 staff)

2. Establish and execute credible public information program – 10 votes (5 board, 5 staff)

3. Explore biomass plant – 7 votes (3 board, 4 staff)

4a. Establish Institutional expertise – 5 votes (2 board, 3 staff)

4b. Establish economic impact – 5 votes (2 board, 3 staff)

**Action steps with lower priority:**
Ensure reliability – 2 staff
Explore wind – 1 board, 1 staff
Establish outreach program -1 board
Complete project study feasibility – 1 board
Finish Integrated Resource Plan – 1 board
Enhance and implement efficiency and conservation program for ratepayers – no votes
Explore solar – no votes
Explore landfill gas – no votes
Explore hydro – no votes
Explore other viable renewable – no votes
Improve system operational efficiency and reduce losses – no votes

## II. Brainstorming

Much of the December 2, 2009 session focused on asking the board and staff to answer this question: What steps do you think are needed to achieve the goal of generating 30 percent of the utility's power with renewable sources by 2020?

The priority actions were chosen from this full menu of steps:

| | |
|---|---|
| Understand consequences in lost opportunities | Determine how big and economies of scale |
| Develop timeline with public knowledge | Finish Integrated Resource Plan |
| Establish 100% board support | Understand value of State REC |
| Inform community of existing energy efficiency/conservation program | Perform feasibility studies |
| Reduce consumption | Choose right biomass technology |

| | |
|---|---|
| Choose right technologies | Determine right technology(s) to fit load profile needs |
| Hire renewable energy consultant | Hire biomass consultant |
| Develop public communications plan | Establish supply-demand model for renewable plan |
| Establish sites: | Build partnerships: |
| -suppliers | -siting |
| -construction | Investigate what is happening with excess capacity |
| Ensure reliability | Establish reliability standards: |
| Understand affect economically for community | -ratepayers |
| -jobs | Project staff requirements |
| Educate/learn | Deliverable/feasibility |
| Harness community support | Two-way communication: |
| Investigate owning vs. power purchase agreement | -understand long-term affordability |
| Provide assured infrastructure for plant | Build biomass plant |
| Construct wind capacity | Access wind capacity |
| Develop a publicly credible business model | Build a solar program |
| Build a feed-in tariff and net metering program | Establish landfill gas provider to assure supply |
| Buy into hydro generation | Add hydro power mix |
| Evaluate how much diversification is needed | Improve system operation efficiency reduce losses |
| Seek City Commission support | Galvanize support: |
| Involve City Commission | -joint meetings |
| Keep close watch on rates | Let people know TCL&P in market for renewable |
| Secure/gain fuel supply for biomass | Develop rate study |
| Hands on education and board expertise | Understand the urgency |

## III. Deliverables

The December 2, 2009 session also produced a preliminary list of deliverables for public education and establishing institutional expertise. They include developing a fact base that includes:

Understanding the price of electricity to customers
Pros and cons of various forms of energy generation:

- Economic impact
- Environmental
- Cost
- Community buy-in
- Operational impacts
- Process
- Transportation
- Particulates
- History of performance
- New technology frontiers
- Sustainability
- Fuel supply