

# **North Carolina Energy Policy Council**

## **Baseload Committee Report**

**November 5, 2010**

- » “Baseload plants are facilities that operate almost continuously, generally at annual utilization rates of 70 percent or higher. Intermediate load plants are facilities that operate less frequently than baseload plants, generally at annual utilization rates between 25 and 70 percent. Peaking plants are facilities that only run when the demand for electricity is very high, generally at annual utilization rates less than 25 percent.”

# Typical Baseload Plants

- ▶ Large
- ▶ Centralized
- ▶ Nuclear
- ▶ Coal
- ▶ Recently – natural gas

# Relationships & Decisions

Need for new baseload generation?

Projections of consumer demand

Capital and operating costs

Reliability

Commercial feasibility

Generation source diversity

# “How much” and “When”

- ▶ Utilities and Utilities Commission
- ▶ Integrated Resource Planning (IRP)
- ▶ Long planning horizon
  - » Impacted by economy, efficiency, prices, renewables
- ▶ Large capital costs

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# Questions Covered

- ▶ **Do we need additional baseload generation in NC?**
- ▶ **If so, what are the sources of low-carbon baseload that are feasible in NC and what are the pros and cons of each?**
- ▶ **What policies incent these forms of generation and what policies form barriers?**

# Observations by Chair

- ▶ Baseload decisions driven by expected demand
- ▶ Population growth, efficiency of use, and electrification
- ▶ Age and retirement schedule of existing generation

# Observations by Chair

- ▶ Proliferation of renewables and efficiency
- ▶ Deployment of “Smart Grid” increases efficiency of delivery system
- ▶ Relationship between adoption of renewables and efficiency

# Committee Responses

- ▶ Do we need new baseload? Not answered
  - » Complex and uncertain projections
  - » Beyond technical ability of the committee. Rely on Utilities Commission and Public Staff, with public comments
  - » Impact of new technologies increase complexity
  - » Need for baseload is not determinative of the type, policies, incentives or barriers

# Committee Responses

- ▶ Sources of low-carbon baseload and pros and cons of each
  - » Rely on efficiency committee
  - » Biomass is both “finite” and “not-finite”

# Committee Responses

- ▶ **Biomass – Crops, grains, switchgrass, manure, refuse derived fuel**
- ▶ **Biomass – Wood**
- ▶ **Biomass – Landfill Gas**

# Committee Responses

Coal Technologies with carbon capture and storage

Natural Gas

Nuclear

Wind and solar linked with storage capability or backup

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# Committee Responses

**Policies that provide incentives and barriers**

**Renewables**

**State and federal tax credits**

**REEPS (SB 3)**

**Efficiency**

**REEPS (SB 3)**

**Cost recovery mechanism**

**PURPA**

**Utility Sponsored Programs**

**NCGreenPower**

**Expedited permitting and regulatory approval**

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# Committee Responses

- ▶ **Barriers**
  - » SB 3 provisions on CWIP
  - » Omission from SB 3 of authorization for the recapture of investment costs during construction

# Conclusion

- ▶ Actually, a starting point
  - » Reliability and affordability
  - » Carbon
  - » Plug-loads
  - » Aging fleet
  - » Population growth
  - » Renewables
  - » Ratepayers and shareholders