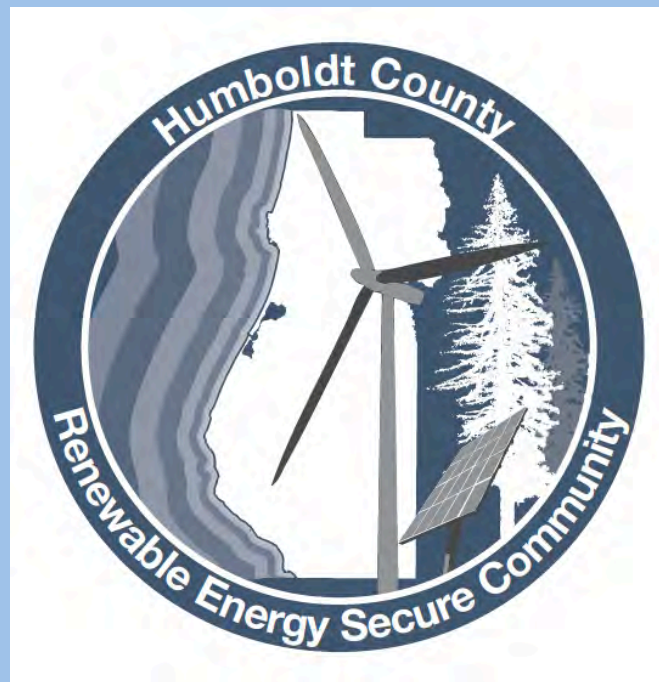


# Planning for Renewable-based Energy Security and Prosperity in Humboldt County

CEC Grant # PIR-08-034



**RESCO Experts Symposium**  
**University of California, Davis**  
**April 13, 2010**

# Project Team

## Redwood Coast Energy Authority

- ◆ Prime contractor
- ◆ Joint Powers Authority serving all of Humboldt County

## Schatz Energy Research Center

- ◆ Sub-contractor
- ◆ Conducting majority of research

## Pacific Gas and Electric Company

- ◆ Project partner providing in-kind cost share



# Problem Statement

- ◆ Humboldt County has great potential to become a renewable energy-based secure community
- ◆ Greatest current barrier is lack of detailed strategic information on opportunities, costs, and benefits



Wind



Biomass



Wave

# Project Goals

- ◆ Develop a strategic plan for Humboldt County to develop its local renewable energy resources to meet 75%-100% of local electric demand and significant fraction of heating and transportation energy needs
- ◆ Assess a full range of renewable energy resources
- ◆ Identify an integrated mix of renewables that can be coupled with demand management and grid-integration technologies to best capture environmental, economic and social benefits for Humboldt County
- ◆ Develop a long-term development strategy and identify near-term next steps
- ◆ Build local support for the RESCO vision



# What makes our project unique?

## Humboldt County ...

1. Is an energy island with a small peak demand (170 MW).
2. Has a large renewable energy resource base.
3. Generates the majority of it's own electricity, greater than 1/3 from renewable biomass.
4. Is severely transmission constrained (70 MW).
5. Has utility scale RE projects already in development.
6. Has a new natural gas power plant that will match well with intermittent renewables.
7. Possesses local energy research and planning expertise.
8. Enjoys great community support for renewable energy development.



# Scope of Work

1. Administration
2. Assess Resource and Technology Options
3. Examine Development Structure, Financing and Ownership Options
4. Conduct Economic Analysis
5. Examine Regulatory and Political Issues
6. Conduct Stakeholder Analysis
7. Develop Strategic Plan and Identify Next Steps
8. Create Community Outreach Plan
9. Develop RESCO Planning Workbook



## Task 2. Status

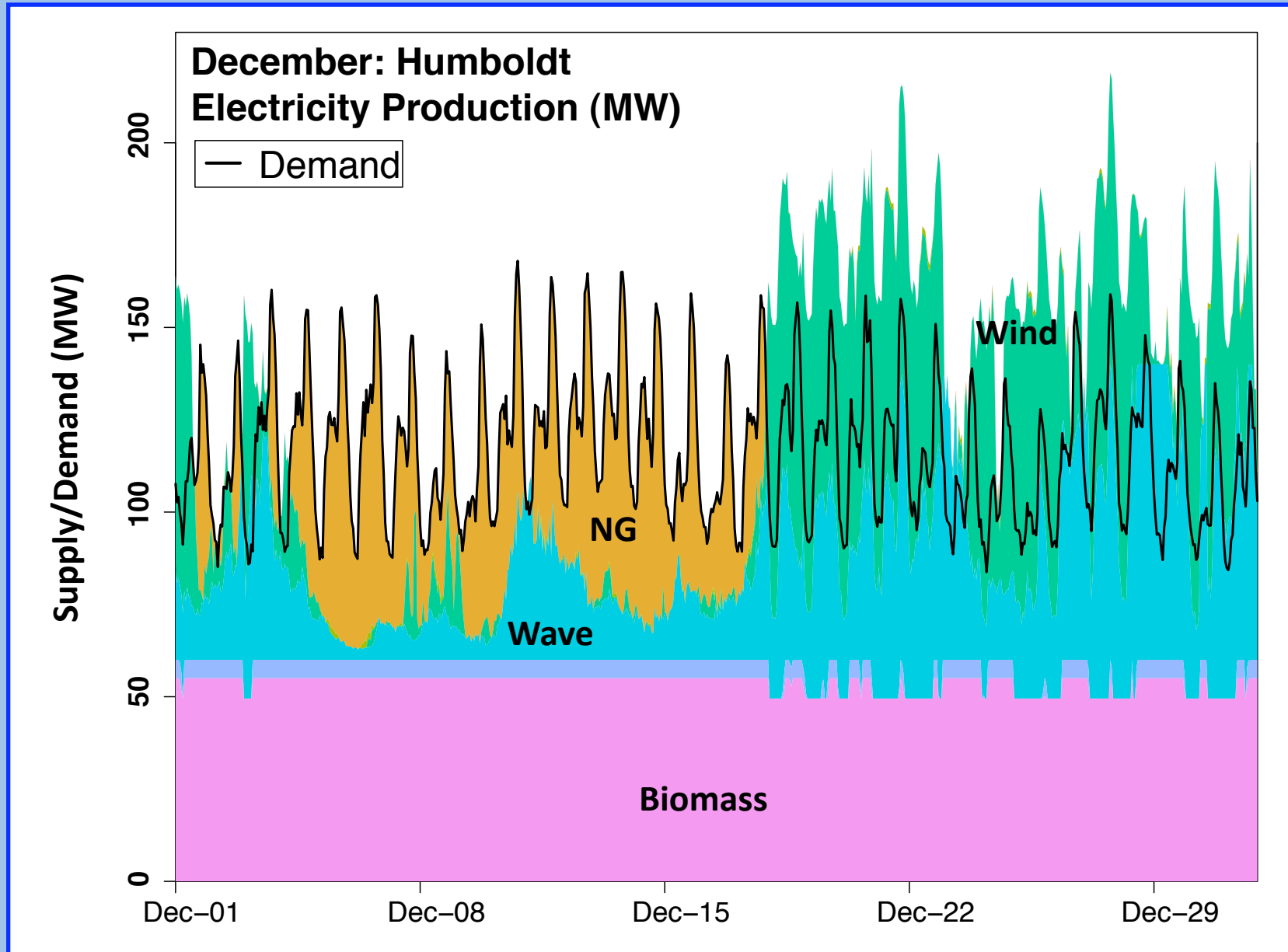
### Resource and Technology Assessment

- ◆ Obtained renewable energy resource data (wind, wave, solar, etc.), and energy consumption data (electricity, natural gas)
- ◆ Developed single-node dispatch model
- ◆ Conducted preliminary analyses
- ◆ Next steps: energy storage, EV's, hydrogen vehicles, heat pumps with energy storage, smart grid and demand response



# Task 2. Preliminary Results

[80 MW Wind, 80 MW Wave, 60 MW Transmission, No fossil export, 2008 Elec. Demand]



# Task 3. Status

## Development/Ownership/Financing Options

- ◆ Developed list of ownership and financing options
- ◆ Next steps: collect information about each option, develop screening criteria and methodology, select options for further analysis



# Task 4. Status

## Economic Analysis

- Conducting economic impact assessment (input-output analysis).
- Collaborated with National Renewable Energy Lab, using NREL Jobs and Economic Development Impact (JEDI) models for various renewable resources. Customizing these models for Humboldt County.
- Collected cost data for many renewable energy resources. Will use these data for JEDI, and also to develop life-cycle cost and levelized cost estimates.

# How will we measure success?

- A realistic strategic plan that garners strong community and stakeholder support and is likely to be implemented.
- Collaborative agreements, MOU's, or partnerships are developed between various stakeholders. Stated purpose to move RESCO forward.
- Local government supports RESCO vision and works to integrate it into gov't planning and policy framework.
- Near-term pilot projects are specified, funding is identified, and partnerships are fostered to move RESCO forward.
- Long-term success: high percentage of RE in Humboldt County.



# Thank You!

