National Biomass Power Perspective

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Background on Bill Carlson

- Electric power industry since 1970
- Renewable power industry since 1980’s
- Chairman/Founder – Biomass Power Association
- Board Member/Founder – California Biomass Energy Alliance
- Advisory Role – Western Governors, USDA/USDOE
- State Biomass/Renewable policy development in CA, LA, MT, NV, OR, WA
Current National Perspective

- Biomass power industry stable, but threatened by lower natural gas prices, falling prices of wind/solar
- Substantial growth in south, northwest in 2000-2010 period due to high renewable prices, substantial incentives
- Older biomass fleets in California, New England (including Maine) now off/almost off original contracts and struggling to find adequate replacements
- Long time host states, such as California, Maine, Oregon, recognize environmental, economic value of plants and seek to preserve/expand industry
Comparing California and Maine

- Early adoption of biomass power after passage of PURPA (1978) due to high power rates, adequate fuel, aggressive state action
- Large biomass fleets, primarily standalone plants, built in large scale
- Plants integrated themselves into forest products industry, forest management, agriculture, solid waste management
  - Allowed ban on ag waste burning
  - Largest component of CA landfill diversion
- Original 20-30 year power contracts have now largely run their course
- Despite 30 years of forest fuel removal, both states have more trees now than at the start
Creating an Industry/Preserving an Industry

• Incentives for Creation
  • Federal Production Tax Credit (PTC)
  • Federal Investment Tax Credit (ITC)
  • Federal accelerated depreciation
  • Federal low cost financing
  • Early state property tax exemption
  • State sales tax exemption on equipment
  • State Income Tax Credit
  • State Loan Program
  • Long term fixed price power contract
Creating an Industry/Preserving an Industry

• Incentives for Preserving
  • Fuel credits/payments
  • State support for overmarket cost of power
  • Set aside within Renewable Portfolio Standard (RPS) for biomass
  • Thermal Renewable Energy Credits (REC’s) for CHP
  • Monetary recognition of capacity/baseload feature

Bottom Line: Cheaper to preserve than create as capital already paid for/recovered
If Maine Decides to Preserve, How Big is Task?

- Maine’s average electrical load is 1,370 MW (2014, EIA)
- Maine’s 40% RPS thus requires 550 average MW
- Maine has 6 biomass power facilities with 240 MW total capacity (BPA, 2016)
- Maine biomass plants contribute 200 average MW (36% of needed total)
- Preservation task is large, but not staggering
Existing Applicable Tools in Maine Legislation/Regulation

- State building green power purchasing
  - 100% renewable power to state buildings
- Community-based renewable energy production incentive
  - Max project size of 10 MW
  - Max program size of 50 MW (reached & closed)
  - $0.10/kWh or less if return acceptable
  - Expired at end of 2015
Existing Applicable Tools in Maine Legislation/Regulation - continued

- **State RPS Law**
  - 40% of total sales by 2017
  - Use NEPOOL GIS for accounting
  - 1.5x RECs for community based projects
  - Additional goals for wind

- **Current RFP for 2 year contracts with state overmarket payments**
Why Should Biomass Power Industry in Maine be Sustained?

- Local economic, environmental, forest management benefits described by others
- Could be integral part of State’s Federal Clean Power Plan (CPP) compliance, particularly in subsequent rounds
- Avoid loss of baseload capacity that must be replaced, particularly with high future intermittent renewable penetration
- Could become base for industrial expansion in Maine as supplier of low cost thermal energy
Principles for Sustaining Biomass Power Industry

• Both electric and non-electric benefits accepted as real and documented
• Need to sustain industry at lowest cost to government/ratepayers
• Need to avoid windfalls to existing plants
• Solution(s) needs to be long-term (20 years)
• Solution needs to nudge industry to more sustainable CHP model from standalone
Possible Maine Solutions

- Biomass set aside within Maine’s RPS
- Thermal RECs issued for biomass combined heat and power (CHP) systems
Biomass Set Aside

- Auction mechanism to award 10-20 year contracts with ME utility
- Auction size less than current installed capacity to create competition/avoid windfalls
- Auction rules could prescribe fuels to be used
- RECs to utility as part of bid to allow cost recovery/preserve upside
- Previously done in CA and AZ, with current RFP in CA tied to fuel from high hazard zones
Awarding of Thermal REC’s

• Pushes plants towards CHP model to increase revenue and thermal efficiency
• Would be equivalent to electrical REC and used for RPS compliance
• Any use of plant steam/flue gas for heating/cooling or electrical displacement would qualify
• Initiation of program actually lowers RPS compliance cost for utilities
• Current programs in MA, NC, NH and rules currently being drafted in OR
Maine Conclusion

• Biomass makes up highest percentage of State’s electrical capacity in Maine and New Hampshire, by far, and thus solution needed
• Benefits to ratepayers appear to justify additional cost to ratepayers
• Far cheaper to sustain current industry than to replace later
• Other states dealing with same issues at the same time
Thank you

Questions?

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