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Maine Legislature, Committee on Energy, Utilities and Technology

Testimony of Charles R. Niebling, Innovative Natural Resource Solutions LLC November 14, 2013

I am Charles Niebling, a partner in the consulting firm Innovative Natural Resource Solutions LLC, with offices in Concord NH, Antrim NH and Portland ME. Previously I served as general manager of New England Wood Pellet LLC, the largest manufacturer of wood pellet fuel in the northeast U.S. with plants in Jaffrey NH, Schuylers NY and Deposit NY. During this time I served as founding board chair of the Biomass Thermal Energy Council, a trade organization headquartered in Washington DC. I have also served as vice president of the Society for the Protection of NH Forests, a non-profit conservation/forestry organization, and executive director of the NH Timberland Owners Association, the forest industry/landowner trade organization in NH. I am a licensed professional forester and received forestry degrees from the University of Vermont and the Pennsylvania State University.

Brief history of New Hampshire Renewable Portfolio Standard, and adoption of the renewable thermal provision

- NH RSA 362-F (<http://www.gencourt.state.nh.us/rsa/html/XXXIV/362-F/362-F-mrg.htm>)
 - Enacted 2007, effective 2008 (House Bill 873)
 - Considerable testimony at time about including thermal provision
 - Should strive for fuel/technology neutral policy
 - Incentives for biomass electric, but not biomass thermal creates market distortions
 - RPS should promote CHP – electric only incentive does not
- HB873 included four components pertinent to thermal
 - Solar thermal provision
 - Fuel/technology neutral renewable energy fund (can be used for thermal efficiency/renewable)
 - NH Office of Energy and Planning mandate to study of incentives for renewable thermal
 - Requirement of NH PUC to study adding thermal after 3 full years of RPS (2011)
- Solar thermal (displacing electricity) was included in bill but never utilized by a single applicant
- OEP completed study 2009
- PUC study completed 2011 (LINK: <http://www.puc.state.nh.us/Sustainable%20Energy/Review%20RPS%20Law.html>)
- Renewable Energy Fund used to provide incentives for thermal; administered by NH PUC
 - Residential wood pellet rebate program (2012-present)
 - Commercial/industrial competitive RFP (2012-present)
 - Solar thermal rebates – both commercial and residential (2011-present)
 - Commercial/industrial wood pellet rebate program (Approved, in development)

Growing state recognition for need to address thermal energy in policy

- Governor John Lynch endorsed 25x’25 (2006) as non-binding policy objective – cannot achieve objective without strong focus on thermal. Electric only will not do it.
- Governor Lynch Climate Action Plan (2009) – 80% by 2050 vs. 1990 level – cannot achieve objective without strong focus on thermal
- 2008 – Special session of legislature to appropriate emergency fuel assistance following dramatic increase in heating fuel costs
- 2009 NHOEP study of thermal incentives, endorsed RPS concept
- 2011 NH PUC study of RPS – analyzed thermal RPS concept but did not recommend

Legislative support began to build for adding thermal component

- 2012 – Senate Bill 218, amendments to RPS based on 2011 PUC study, included comprehensive fuel/technology neutral thermal provision. Introduced by Senator Jeb Bradley (LINK: <http://www.gencourt.state.nh.us/legislation/2012/SB0218.html>)
- No significant interest group opposition to thermal carve-out
- Major selling points for retail service providers:
 - carve-out at lower ACP, thus lower ratepayer cost to meet compliance obligation.
 - wider array of technology choices to meet obligation.
- Passed with unanimous Senate vote, near unanimous House vote, signed by Governor John Lynch June 19, 2012, Chapter 272, laws of 2012

Structure of thermal provision:

- NH RPS has four classes
 - Class I - new renewable (wind, biomass, geothermal, tidal etc.)
 - Class II - solar PV
 - Class III - existing biomass electric and landfill gas
 - Class IV - existing small hydro
- Thermal provision was structured as sub-class within NH Class I
- Only projects in service after January 1, 2013 qualify
- Thermal carve-out allocated up to 2% of total of 15% requirement from new renewable through 2025
- Ramps up over time, as follows:

YEAR	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
THERMAL CARVE OUT %	0.4%	0.6%	1.3%	1.4%	1.5%	1.6%	1.7%	1.8%	1.9%	2.0%	2.0%	2.0%
ESTIMATED TOTAL RECs (MWH X1,000)	45	69	151	165	180	195	210	225	242	258	262	266

(To put this in perspective, a 1 MW biomass boiler (3.4 MMBTU, 100,000 sq ft building), operating at load 2500 hours/year will generate 2,500 MWH of thermal energy. The thermal carve-out in 2014 alone will provide 45,000 RECs, or support for 18 such projects.)

- **Thermal provision applies to all qualifying renewable thermal technologies**, including solar thermal, geothermal and biomass (solid fuels, liquid fuels or bio-gas)

- **Alternative compliance payment (ceiling price) for thermal RECs capped at \$25/MWH, increasing annually by ½ CPI.** In contrast, electric RECs in Class I are currently \$55 and have been selling in \$35-\$55 range. Lower ceiling price for thermal is an effective incentive because of inherently higher efficiencies producing heat vs. electricity (especially with biomass)
- Certification of RECs based on verification of “Useful thermal energy” (RSA 362-F:2, XV-a): ***renewable energy delivered from class I sources that can be metered and that is delivered in New Hampshire to an end user in the form of direct heat, steam, hot water, or other thermal form that is used for heating, cooling, humidity control, process use, or other valid thermal end use energy requirements and for which fuel or electricity would otherwise be consumed.***

Current Status of Implementation of Thermal Provision

- In administrative rulemaking at NH PUC – rules expected to be adopted spring, 2014 in time for retail service providers to meet their 2014 obligation (July, 2014). PUC maintains website for stakeholder involvement in rulemaking (<http://www.puc.nh.gov/Sustainable%20Energy/Class%20I%20Thermal%20Renewable%20Energy.html>)
- PUC hired consulting engineers (Antares Group) to assist with rulemaking
- Major issue is verification of heat output (metering) and what technical requirements will be for metering, or whether less costly procedures for verifying/estimating heat output will be authorized

Challenges to Implementation

- **Defining “sustainable biomass” for purposes of RPS qualification**
- **Heat metering** – expensive requirement that may exclude smaller systems; are there other approaches that will provide needed accountability?
- **REC transactions/negotiating with utilities** – complex undertaking beyond capacity of smaller project owners/operators
- **How to translate performance incentive into bankable security for financing capital**

Response of Market to Pending New Incentive

- Strong participation in stakeholder process to develop rules. Representation from solar, geothermal and biomass interests
- Numerous biomass heating projects have been installed or are in development that will utilize ability to sell RECs on heat output, awaiting completion of administrative rules
- Two large district heating projects (Claremont and Keene NH) are in development; financing is dependent on REC revenue
- Complete reconstruction/modernization and efficiency upgrades of Concord Steam Corporation CHP plant dependent on REC revenue. Concord Steam heats downtown Concord, including State Capitol buildings with steam from biomass CHP
- NH Wood Energy Support Team (USDA funded) developing concept to “capitalize” thermal RECs using \$750,000 pledge from US Endowment for Forestry and Communities. This mechanism turns performance incentive into capital incentive that can be used more effectively to finance up-front capital cost.

- 75 municipal, school and business leaders attended workshop yesterday in Bethlehem NH to learn about biomass heating technology and incentives' strong interest in thermal REC provision

Other States are Evaluating Thermal in RPS Programs

In **Massachusetts**, Senate Bill 1593, currently pending, will upon passage add renewable thermal energy technologies and fuels to the MA Alternative Portfolio Standard, Chapter 25-A, section 11F1/2. Here is a link: <http://legiscan.com/MA/bill/S1593/2013>

In **Maryland**, legislation was enacted in 2013 directing a study of adding thermal to the MD RPS (<http://legiscan.com/MD/bill/SB797/2013>). Legislation will be introduced by the Governor on behalf of Maryland Energy Administration for 2014, adding comprehensive thermal provision as a separate tier. Current statute recognizes geothermal and biomass thermal energy produced by combustion of poultry waste

In **New York**, the NY State Energy Research and Development Authority (NYSERDA) recently issued an analysis of the Customer-Sited Tier of the NY RPS in which it recommended expansion of the existing solar thermal provision to a fuel neutral thermal provision that would include other thermal technologies. The NY RPS is administered by the NY Public Service Commission.

In **Connecticut**, legislation (House Bill 6535) was introduced in the 2013 session but no action was taken on the bill in lieu of comprehensive RPS reforms that did not include the thermal provision. http://www.cga.ct.gov/asp/cgabillstatus/cgabillstatus.asp?selBillType=Bill&bill_num=HB06535

In **New Mexico**, legislation was introduced in 2013 (Senate Bill 204 - <http://www.nmlegis.gov/lcs/legislation.aspx?chamber=S&legtype=B&legno=%20204&year=13>) to add a comprehensive thermal provision to the RPS. The bill passed the Senate but failed to be acted on by the House before the session ended. The bill is expected to be reintroduced for the 2014 session.

In **Colorado**, legislation (SB 12-272) was introduced but was not enacted. More information can be found at <http://www.coloradorts.org/>

Thank you for the opportunity to submit this testimony. I would be pleased to act as a resource to the committee as you continue your deliberations.



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