Public Utilities Commission

New Hampshire Biomass

Stakeholder Session for

Wood Pellet Rebate Programs

JUNE 27, 2019
Welcome!

Introductions

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1. Pellet Incentive Programs
   - Brief Overview and History
   - Data and Trends
     - Residential Incentive Program
     - Commercial & Industrial Incentive Program
   - Thermal RECs
   - Funding

2. Discussion: Program Revisions & Support
   - Changes to Program Terms and Conditions?
   - Education and Outreach

3. PUC Updates
   - Program Budgets
   - Puc 2500 Rules
   - Data Availability

4. Next Steps
Quick Program History & Results

• 5½ years old

• Program changes in 2016
  ▪ Increased incentives from 30% to 40% of total eligible costs
  ▪ Increased C&I maximum incentive from $50,000 to $65,000
  ▪ Increased Residential maximum incentive from $6,000 to $10,000
  ▪ New Adders: Metering (C&I) and Pellet Storage (Residential)

• Residential Program Results (as of June 05, 2019)
  ▪ 272 incentives paid
  ▪ ~$1.8 Million incentives paid

• C&I Program Results (as of June 05, 2019)
  ▪ 54 incentives paid
  ▪ ~$1.7 Million incentives paid

• C&I Grant RFP Program Results (as of June 05, 2019)
  ▪ 19 projects related to biomass have been contracted (15 paid, 4 still in progress)
  ▪ These contracts total ~$4.6 million in grant funding
# Residential Wood Pellet Central Boiler and Furnace Rebate Program

## Current Program

Rebate = 40% of system cost up to $10,000

Minimum 3 tons of bulk fuel storage
Adder + $100 per ton for fuel storage systems larger than the 3 ton minimum requirement, up to a maximum of $500.

## Other Regulations

Thermal efficiency rating of 80% or greater
Particulate Matter $\leq 0.10$ lb/MMBtu

Two Step Application Process:
- Step 1 – pre-approval and reservation of funds
- Step 2 – project completion and review for payment

Funding reserved for 3 months

See [Step 1](#) application for complete Program Terms and Conditions.
Commercial & Industrial Wood Pellet Central Heating Systems Rebate Program

**Current Program:**
- Rebate = 40% of system cost up to $65,000
- Minimum 3 tons of bulk fuel storage
- Thermal storage 30% adder, maximum $5,000
- $5,000 towards meter for systems that become REC eligible

**Other Requirements**
- Efficiency of 80% or greater measured using the higher heat value of the fuel.
- Particulate Matter $\leq 0.10$ lb/MMBtu
- Maximum system capacity: 2.5 mmBtu
- Participation in EPA Portfolio Manager program
- See [Step 1](#) application for complete Program Terms and Conditions

**Two Step Application Process:**
- Step 1 – pre-approval and reservation of funds
- Step 2 – project completion and review for payment

Funding reserved for 9 months
Data and Trends: Residential Program
NH Towns With at Least One Incentivized Residential Pellet System
Incentivized Residential Pellet Systems by Location

Green: ~1-4 systems
Yellow: ~5-9 systems
Red: ~10+ systems
Cumulative Incentivized Residential Pellet Systems (Quantity)

#2 Heating Oil falls from $4/gal to $2/gal

July 2016, incentive increased from 30% to 40% of total eligible costs.
Maximum increased from $6,000 to $10,000
Cumulative Residential Pellet Incentives Paid (Dollars)

#2 Heating Oil falls from $4/gal to $2/gal

July 2016, incentive increased from 30% to 40% of total eligible costs. Maximum increased from $6,000 to $10,000
Residential Pellet System Total Eligible Installed Cost (Dollars before incentive)

Red line is trend line
Residential Pellet Incentivized System Size (kBtu/hr)

Red line is trend line
Total Residential Pellet System Installed Cost per kBtu/hr (before incentive)

Red line is trend line
Pellet Fuel Storage Bin Size of Incentivized Residential Systems (Tons)

Red line is trend line

Pellet Storage Adder Begins

One 16-ton outlier removed
Residential Pellet Rebate Program Budget by Fiscal Year (New Funds Only)
Data and Trends: Commercial & Industrial (C&I) Program
NH Towns With at Least One Incentivized C&I Pellet System
Incentivized C&I Pellet Systems by Location

Green: 1 system
Yellow: ~2-3 systems
Red: ~4+ systems
Cumulative Incentivized C&I Pellet Systems (Quantity)

#2 Heating Oil falls from $4/gal to $2/gal

July 2016, incentive increased from 30% to 40% of total eligible costs.
Maximum increased from $50,000 to $65,000
Cumulative C&I Pellet Incentives Paid (Dollars)

July 2016, incentive increased from 30% to 40% of total eligible costs. Maximum increased from $50,000 to $65,000.

#2 Heating Oil falls from $4/gal to $2/gal
C&I Pellet Incentivized System Sizes (kBtu/hr)

Red line is trend line
C&I Pellet Incentivized System Eligible Installed Costs (Total dollars before incentive, excluding thermal storage)
C&I Pellet System Eligible Costs per kBtu/hr
(Total dollars before incentive, excluding thermal storage)
C&I Pellet Program: Thermal Storage Statistics

- ~35% of all C&I projects installed thermal storage
- In the past two years, ~50% of C&I projects have installed thermal storage
- Average and median size of projects using storage is ~650 kBTU/hr
- Average size of projects not using storage is ~350 kBTU/hr. Median is ~190 kBTU/hr

- Not all large projects install thermal storage. There have been 18 incentivized systems larger than 500 kBTU/hr, and 6 did not install thermal storage.

- Reported Thermal Storage Costs have varied significantly, from ~$3,000 to $40,000

- Thermal Storage adder is 30%. Maximum adder is $5,000
$5,000 Meter Adder

- Beginning in 2016, REC certification is required for systems > 500 kbtu/hr.
- $5,000 meter adder available
- 15 projects have received incentives under the “modified” (2016) program.
  - Four projects utilized the meter adder.
  - All four projects were > 500 kbtu.
- 7 additional projects currently have funding reserved, and only one has requested the meter adder.
- No projects < 500 kbtu/hr have become REC-eligible, including five systems that are > 380 kbtu/hr.
Metering Thermal RECs (TRECs)

- “Auger” Method (Puc 2506.04 (j))
  - Available to small (<= 1 MMBtu/hr) biomass systems to “meter” thermal energy without btu metering equipment.
  - To date, no facilities have applied for TREC certification using the auger method.

- Alternative Method (Puc 2506.06)
  - “Large” thermal systems (> 1 MMBtu/hr) may request alternative method
  - PUC approval required
Thermal RECs (TRECs)

- Additional incentive and revenue stream
- RPS is a market-based policy
- Factors Influencing TREC prices:
  - ACP rate sets ceiling price
  - Prices influenced by supply and demand (RPS compliance requirement)
  - Multiple fuels qualify for TRECs: Geothermal, Methane Gas, Solar Thermal, and Biomass (refer to RSA 362-F:2, II)
  - Policy changes

- **TREC Revenue Example - Rough Calculation:**
  - Rough Approximation: 4 TRECs are generated per ton of pellets consumed.
  - If you assume income of $17/TREC (2019 ACP rate = $25.97)...
  - Annual income would effectively reduce ongoing pellet heating costs from ~$16/MMBtu to ~$12/MMBtu.
C&I Pellet Rebate Program Budget by Fiscal Year (New Funds Only)
C&I Pellet Program Funding Status

Commercial & Industrial Wood Pellet Central-Heating Rebate Program
FY2019 Funding: $550,004
July 1, 2018 to June 30, 2019
As of 6/25/2019

- Rebate Funds Available, $119,246
- Rebates Paid, $151,671
- Rebate Funds Reserved, $279,087

Residential Pellet Program Funding Status

Residential Wood Pellet Central-Heating Program
FY2019 Funding: $444,805
July 1, 2018 to June 30, 2019
As of 6/25/2019

- Rebate Funds Available, $101,577
- Rebate Funds Reserved, $118,731
- Rebates Paid, $224,497

Discussion:
Program Revisions & Support
Program Revisions?

• What’s behind the trends?

• What’s the market outlook for next year and the future?
  ▪ Technology changes?
  ▪ Material, component cost changes? Impact of tariffs?
  ▪ Fuel cost changes?

• Expansion of rebate programs to include wood chips?

• Finance Offerings?
  ▪ Loan Offerings?
  ▪ Interest rate buy-downs?

• Revise program technical criteria?

• Would recommendations change in a high versus low budget scenario?
Education and Outreach

• LES Conference?

• PUC “marketing/program awareness” assistance:
  ▪ New program page on PUC website?
  ▪ PUC Twitter
  ▪ Template program “brochures”?
  ▪ Coordination with other programs/organizations?

• Additional program analysis included in the REF Annual Report?

• Cooperative Marketing?
PUC Updates
Program Budgets

Installation of Renewable Projects & REC generation

Alternative Compliance Payments (ACP) → Renewable Energy Fund (REF) → Budget

Residential Programs (~40%)
- Solar PV and Wind Rebates (RSA 362-F: mandatory program; max allocation 40% over 2-year period)
- Solar Thermal Rebates
- Pellet Rebates
- Low Moderate Income Program (RSA 362-F: mandatory; minimum 15%)

C&I Programs (~60%)
- Solar PV & Thermal Rebates
- Pellet Rebates
- Competitive Grant RFP Program (RSA 362-F: mandatory program)

Statute requires REF residential/C&I funding balance based on sector percent of total retail sales. For illustration purposes a 40%/60% is shown to the left.
Docket DRM 18-017

Joint Legislative Committee on Administrative Rules (JLCAR) petitioned Commission to initiate rulemaking procedure to address potential inclusion of methane gas as an eligible source of Class I thermal RECs

Commission granted JLCAR’s petition and opened docket DRM 18-017

SB 577 (2018) amended RPS Law to include methane gas as an eligible Class I Thermal REC source

Rule Amendments:

- Inclusion of methane gas as an eligible source for Class I Thermal RECs
- 2019 legislative amendments (if any impact on RPS Law)
- Possible amendments with stakeholder input:
  - Metering for TREC
Data Availability

• Right to Know Law (RSA 91-A)

• Request made to Executive Director (*preferred but not required*)
  ▪ One original and two (2) copies (*preferred but not required*)

• Some data always confidential
  ▪ E.g. residential phone numbers, email addresses, social security numbers, etc.
Next Steps