

# Heating the Midwest Conference

Adopting Renewable Biomass Heat: *Investing in Tomorrow's Sustainable Communities*

## **Incentivizing & financing the future:**

***Creating the policy and finance climate  
needed for success***

# ***Renewable Energy Policy Successes & Failures – A Brief Review***

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# Policy Design Basics

- Push (Mandated) vs. Pull (Incentive)
- Mandated: Compliance vs. Tax
- Obligated Party vs. Mass Market
- Complicated (U.S.) vs. Simple (Mexico)

# Sample of “Successful” Policies

- Acid Rain – SO<sub>x</sub> Trading – “The Gold Standard”
- RFS – Pushing Obligated Parties to “Play”
- Section 45, especially 1603 – PTC & ITC Pulling Players into the Game
- Feed-in-Tariffs – Europe Leaps Forward
- De-risking: Credit Enhancements
- Size Does Matter – Grants/Rebates/Credits /Enhancements and Transactional Tenor
- All-time Winner: Depletion Allowance (Oil)

# Sample of Policy “Failures”

- Picking Winners – Especially When not Connected to Reality: Czech Rep Solar, Spanish CSP and U.S. RFS (?)
- Undercooked and Rushed: BCAP 2010
- Running for the Finish Line – Sunsets (uncertainty) and Unintended Consequences: Wind PTC, Solar ITC, BCAP and Sulfite Liquor
- Too little to make a difference: Rebates & Grants in face of Low FF Prices/High CapEx

# Ambitious Thermal Policies

- Great Britain's Renewable Heat Incentive
- NYSERDA's Renewable Thermal Program
- Wisconsin's Renewable Thermal Program (not!)

# Great Britain's RHI

- Feed-in-Tariff Program
- Non-domestic, Domestic & Blended
- Fits, Starts, Oversubscription
- Adjustments and....Impact

**Domestic**  
Renewable Heat  
Incentive (RHI)

[www.ofgem.gov.uk/domestic-rhi](http://www.ofgem.gov.uk/domestic-rhi)

Version 2.0 February 2015

Factsheet



# Great Britain's RHI: Eligible Systems

- Biomass only boilers & biomass pellet stoves
- Heat pumps: air, water and ground sourced
- Solar thermal: flat panels and evacuated tubes
- Biogas

New Equipment, meeting Microgeneration  
Certification Scheme Standards



# Great Britain's RHI: Tariffs Paid

- Directly paid to system owner : on-going
- Tiered, based upon scale & technology
- Fixed price, 20 year
- Tariff set based upon CapEx, Scale, Cost difference from “traditional” & targeted rate of return (~12%)
- Not all ROI same – differentiated by Tiers

# Great Britain's RHI: Impact

- RHI influenced adoption of investment :  
Non-domestic 63% and Domestic 42%
- Highest penetration in “off-gas-grid” regions
- Large firms & agri-business over represented

## RHI Evaluation: Synthesis

*A report by Frontier Economics*

January 2016

# Great Britain's RHI: Impact

- 80% domestic & 87% non-domestic satisfied
- RHI prompted “pro-active” investments
- Upfront costs remain barrier
- 95% Non-domestic & 47% domestic: Biomass
- MCS registered installers served 71% of RHI market
- Installers most dominant source of RHI information



**NYSERDA**

# NYSERDA's RHI

- Open/Revised June, 2015
- Rebate of CapEx Program
  - open to 12/31/18, Capped @ \$9.75M
- Relies on Certified Dealer/Installer System
- Customer submits project for qualification
- NY State pays Installer “X%” of total project,  
<http://www.nyserda.ny.gov/renewableheatny>

# NYSERDA RHI Incentives

**Table 2: Incentives for Eligible Equipment**

<p><a href="#"><u>Advanced Cordwood Boiler with Thermal Storage</u></a></p>	<p>25% installed cost up to \$5,000 per unit. An additional \$5,000 for documented recycling (removal and destruction) of old outdoor or indoor wood boiler, or \$2,500 for recycling whole-house wood furnace.</p>
<p><a href="#"><u>Wood Pellet Boiler with Thermal Storage</u></a></p>	<p>45% installed cost up to \$36,000 based on system size. An additional \$5,000 for documented recycling (removal and destruction) of old outdoor or indoor wood boiler, or \$2,500 for recycling whole-house wood furnace.</p>

**Table 3: Maximum funding for Pellet Boiler by Size**

Boiler Size (kW)	Boiler size (Btu/hr)	Maximum Incentive
≤25	≤86,000	\$10,000
≤35	≤120,000	\$16,000
≤50	≤171,000	\$23,000
≤88	≤300,000	\$36,000

# NYSERDA RHI Funding

- Residential:
  1. On-Bill Recovery Loan – pmts baked into utility bill
  2. Green Jobs/Green NY (GJGNY) direct loan  
[www.energyfinancesolutions.com](http://www.energyfinancesolutions.com)
- Small Commercial
  1. GJGNY direct loan, with NYSERDA program review or commercial debt  
[www.nyserda.ny.gov/small-commercial-financing](http://www.nyserda.ny.gov/small-commercial-financing)

# NYSERDA RHI Impact

- 18 Awards at/shortly after 2014 launch, since..
- 4 “large-scale” commercial systems in process
- 23 Residential Boilers, 50/50 cord vs. pellets
  - of which 20 replaced “old” wood boilers
- 68+ pellet stoves
- Promote education (installers) & efficiency
- Recognized as “leader” by association of the overall NY REV process

# Observations & Reaction

- Both GB and NY adopt primarily a Pull strategy, with Push components
- Both require stringent performance standards for eligible technologies
- GB derisks the investment through longer-term tenor (FIT) and has higher than expected participation
- NY derisks through CapEx savings and credit enhancements...but the performance standards increase CapEx...perhaps too much



# Recommendations

- KIS(S)
- Acknowledge the competitive environment
- Pull strategy requires substantially more administrative and outreach resources than Push (compliance)
- Pull required buy-in by EPC/Installer
- Push is harder political sale – but assures a more stable market environment
- CPP w/ Bio-Thermal = Changes Everything!!

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