



# Status of Renewable Energy Certificates and Markets

Jan Hamrin

Center for Resource Solutions

[www.resource-solutions.org](http://www.resource-solutions.org)

# Overview

- Nature of REC markets
- Key market drivers
- How is REC market changing?  
What are the trends and what do they imply for the future?
- Analysis tools
- Energy efficiency certificates

# TRCs Are Being Traded and Used Today

- ~ 10.5 Million MWh TRCs were contracted in the US in 2003
- Retail sales in Green Markets:
  - twelve-fold increase last year
  - 1.8 Million MWh Green-e certified TRCs in 2003

# History of TRCs in US

- 2000 –
  - Bonneville Environmental Foundation forms ‘Green Tag Program’
  - ‘Green Tickets’ sold in CA by APX
  - EPA first large commercial purchaser of TRCs
- 2001 –
  - TX begins RPS program using TRCs (ERCOT tracking Program -- Mandatory market)
  - CRS issues White Paper on TRCs best practices

# History of TRCs in US (cont.)

- 2002 –
  - NEPOOL/GIS formed (issues & tracks TRCs Mandatory market)
  - Green-e certifies first TRC End-use Products (voluntary market):
    - 7 companies with certified products
    - 150,000 MWhs of Green-e certified TRCs sold
    - 45% sold to residential customers

# History of TRCs in US (cont.)

- 2003 –
  - 18 companies with certified products
  - 1.8 million MWh of Green-e certified TRCs sold
  - 95% sold to non-residential customers
  - 84 large Companies purchasing significant quantities of TRCs

# August 2004 Sample Wholesale REC Prices (MWh)

Fuel Type	REC Type	Location	Price
New Biomass	Voluntary	SERC	\$2.00
New Solar	Voluntary	WECC	\$40.00
Any new	Compliance	MA	\$46.00
Any REC	Compliance	Texas	\$11.50
New Solar	Compliance	New Jersey	\$175.00

Source: Evolution Markets LLC

[www.evomarkets.com/mmu](http://www.evomarkets.com/mmu)

# TRC Price Ranges

- Mandatory (compliance) Markets
  - \$48/MWh CT
  - \$40/MWh MA
  - \$14/MWh TX
  - \$4.50 to \$6.50/MWh in PJM



# Why the Price Disparity?

- Geography of low-cost renewables
- Supply/demand
- Volume of purchase
- Voluntary vs. compliance markets
- Regulatory (e.g. penalties for non-compliance with RPS)
- Type & vintage of renewables
- Solar set-aside in RPS



# Buzzworthy: Consumer Product Labeling



- In 2004 Green-e launched the Product Labeling Initiative.
- Many vendors are using the “Made With Renewable Energy” Green-e logo.
- Many more consumer products (Odwalla juice, Silk Soy Milk, Fat Tire beer, etc.) contain info on packing encouraging customers to buy RECs

# “Made With Renewable Energy” Product Labeling Initiative





# Buzzworthy: POP Tags

- “Mini-tags” or “Point of Purchase (POP) Tags” -- Small quantities of RE attributes sold at point-of-purchase to offset the consumer’s energy use and/or emissions from a particular activity.
- Green Mountain and BEF have sold 100 kWh blocks of wind RECs at ski resorts so customers can offset their ski lifts energy use.
- Potential uses: offsetting emissions from airline travel, grocery store purchases, rental car usage, etc.



# Buzzworthy: Emissions Values of RECs

- Will RE be assigned CO2 value in future Cap & Trade schemes?
- You could contribute to lowering GHG levels for your City, County, or State – are you ready?

# Barriers & Challenges

- Need accurate and verifiable generation data
- Need a credible mechanism for issuing certificates
- Need a method for tracking certificate ownership
- Need to know what certificate represents
- Need to protect against double counting

# How are these questions answered?

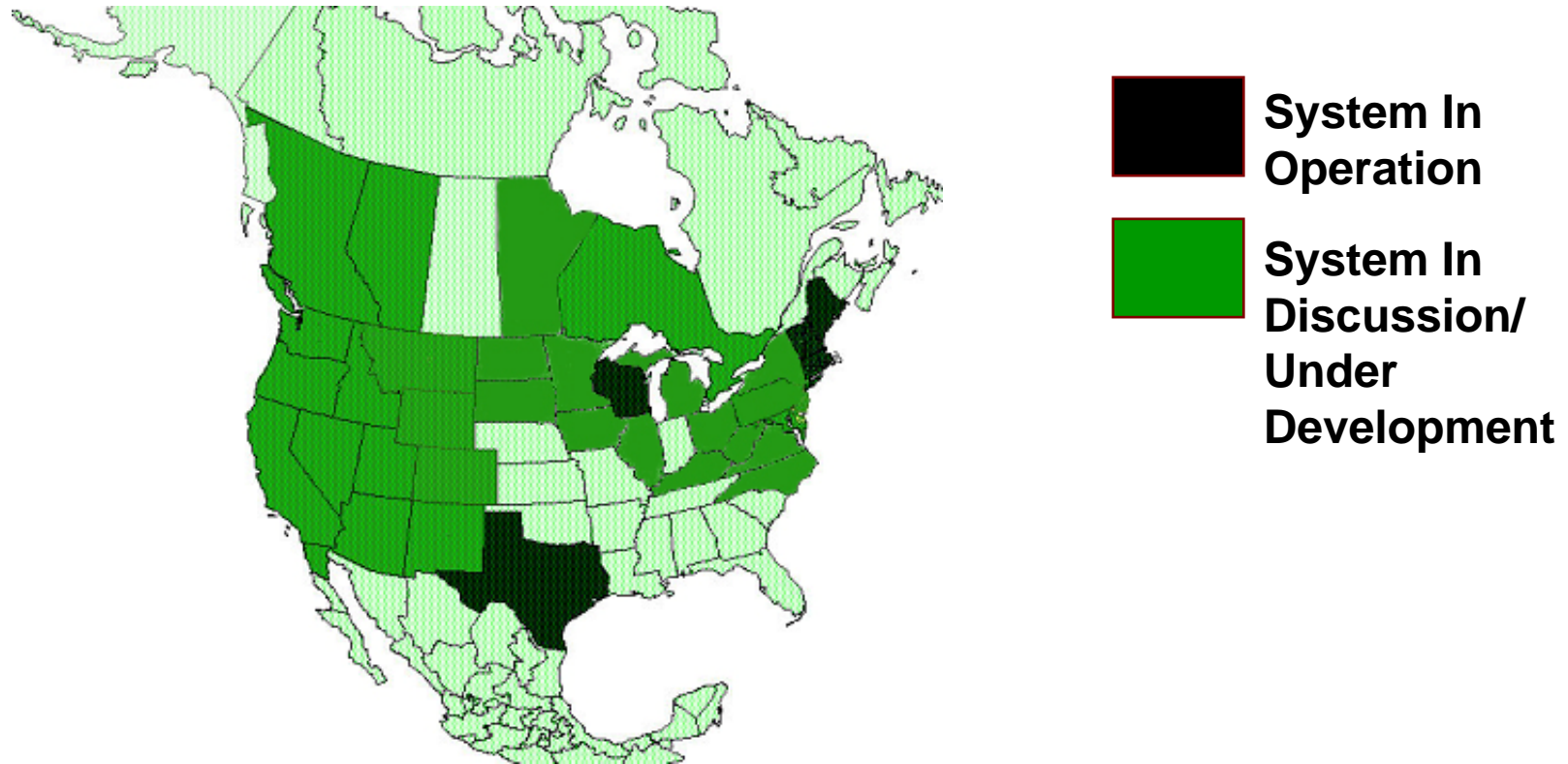
- Tracking/Accounting Systems
- Regulatory Oversight
- Certification/Registration
- Verification

# Tracking Systems

- Verify Type of Generator
  - Generator registration/verification
- Issue TRCs to Generators
- How many TRCs were purchased?
  - Verify property rights and amount in specific accounts
  - Verify types of TRCs in accounts
- Was there any double counting?
  - Good within tracking system boundaries



# TRC Tracking in North American



- An equivalent of a financial banking system is needed for TRC issuing & tracking. State, provincial, regional or national TRC “issuing bodies” need common practices for handling accounts, transferring assets.*
- A North American Association of Issuing Bodies (NAAIB) is being considered to ensure compatibility among systems and provide credibility to the emerging TRC market*

# Types of RE Programs/Policies Tracking Systems can Support

- Renewable Portfolio Standards (RPS)
- Green Pricing Programs (G-P)
- Public Benefit Funds (PBF)
- State Production Tax Credits (PTC)

# Types of RE Programs/Policies Tracking Systems can Support (cont.)

- Information Disclosure Labels
- Integrated Resource Planning (IRP)
- Green Marketing: Certification/verification
- GHG Trading Programs: Issuing CO<sub>2</sub> allowances to RE

# North American Association of Issuing Bodies (NAAIB)

- Protects against double counting in North America
- Facilitates Imports/Exports among the member tracking systems
- Provides structure for new tracking systems

# NAAIB – (Cont.)

- Facilitates national and international markets for TRCs and Carbon Offsets
- Provides credibility for TRCs
- Supports RE financing options

# Certification/Registration

- Product Certification:
  - TRC Standards & Definitions
  - Labeling & Information Disclosure
- Registration or Facility Certification
  - Is Generating Facility that produced the TRCs what it says it is?
  - Usually Certify and Verify

# Verification

## Product Verification:

- Compliance Review
  - What TRC Claims are being made?
  - Are they legal & easily understood?
  - Was the consumer properly informed?
- Separate Audit:
  - How many TRCs were sold compared to what was purchased?
  - Were the types of TRCs purchased consistent with the claims made to customers?

# For Additional CRS Information

- **TRC and Green-e Certification:**
  - Gabe Petlin, [gpetlin@resource-solutions.org](mailto:gpetlin@resource-solutions.org)
  - [www.green-e.org/what\\_is/dictionary/trc.html](http://www.green-e.org/what_is/dictionary/trc.html)
- **Green Pricing Accreditation:**
  - Dan Lieberman, [dan@resource-solutions.org](mailto:dan@resource-solutions.org)
- **AAIB, Regulatory Handbook, and National TRC Tracking Initiatives:**
  - Meredith Wingate, [mwingate@resource-solutions.org](mailto:mwingate@resource-solutions.org)
- **Public Renewables Partnership:**
  - Ray Dracker, [rdracker@resource-solutions.org](mailto:rdracker@resource-solutions.org)
  - [www.resource-solutions.org/prp.htm](http://www.resource-solutions.org/prp.htm)
- **WREGIS:**
  - Jan Hamrin, [jhamrin@resource-solutions.org](mailto:jhamrin@resource-solutions.org)



# For More Information:

WREGIS website at:

[www.westgov.org/wieb/wregis/](http://www.westgov.org/wieb/wregis/)

Contact:

Rasa Keanini

916-654-5379

[rkeanini@energy.state.ca.us](mailto:rkeanini@energy.state.ca.us)