

# Accounting and Verification Options for RPS Compliance: An Introduction

*Ryan Wiser*

ryanwiser@earthlink.net

**New York DPS RPS Proceeding**

Albany, New York

April 8, 2003

---

# An Introduction to the Panel

- ❑ NY Fuel Source Disclosure and the Conversion Transaction (CT) Approach
  - ❑ New England Generation Information System (GIS) Design and Implementation
  - ❑ Treatment and Accounting for Imports and Exports, and Regional Compatibility Issues
-

# Three Basic Accounting and Verification Options: Can't Follow Physical Electron Flow!!!

- ❑ **Contract-Path Tracking of Electricity Contracts**
  - ❑ central administrator or use of private audit
- ❑ **Unbundled Certificates (aka, renewable energy credits, tags, tradable renewable certificates, etc.)**
  - ❑ for renewable energy or for all electricity generators
  - ❑ comp. electronic registry or limited contract-tracking
- ❑ **Hybrid Systems (e.g., NY conversion transactions)**
  - ❑ allow limited unbundling, but not comprehensive

**Each can be used for RPS, environmental disclosure, environmental policies, green marketing, etc.**

---

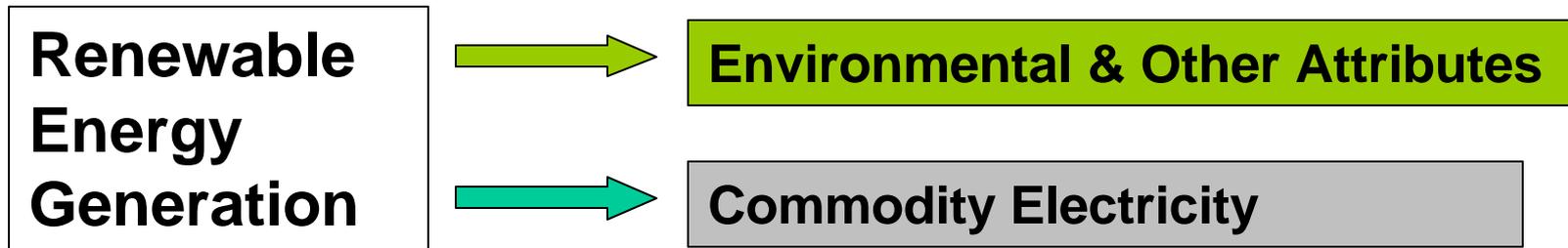
# Accounting and Verification Systems for RPS Compliance

**Virtually all states with restructured markets, and many of those with monopoly markets, are using or expect to use unbundled certificates for RPS compliance**

- ❑ Full Unbundled REC System – electronic registry
    - ❑ today (Texas, Massachusetts, Maine, Connecticut)
    - ❑ possible in future (Nevada, New Mexico, New Jersey eventually)
  - ❑ Partial Unbundled REC System – limited systems
    - ❑ Wisconsin, Arizona, Nevada today
  - ❑ Contract-Path Accounting of Bundled Electricity
    - ❑ Minnesota, Iowa, New Jersey today
  - ❑ Unclear
    - ❑ Pennsylvania, California
-

# Certificates – What Are They?

- ❑ Certificates are the embodiment of the “attributes” of RE generation in an instrument that can be bought and sold, and that conveys a contractual right to claim those attributes
- ❑ Certificates can be separated (unbundled) from the underlying energy that gave rise to them



- ❑ Certificates can trade independently of electricity (much like SO<sub>2</sub> allowances), but experience in TX shows that bundling certificates and electricity to support financing is common
-

# Recent Renewable Certificate Prices

- Certificate prices should in general trade at the incremental “above-commodity” cost of the marginal renewable generator
  - Current renewable certificate prices in select states, for short, near-term purchases (Source: Evolution Markets)
    - **TX RPS: ~\$12/MWh**
    - **MA RPS: ~\$22/MWh**
    - **NJ Class I RPS: ~\$4/MWh**
    - **NJ Class II RPS: ~\$3/MWh**
-

# Electronic Registry Systems

- ❑ All buyers and sellers of certificates set up accounts at the registry
  - ❑ Registry verifies generation and creates electronic certificates (with serial #s) for each MWh of generation
  - ❑ Electronic certificates contain information on fuel source, RPS eligibility, and other necessary information
  - ❑ The Registry establishes title to certificates, and allows and verifies transfer of title between participants
  - ❑ Participants buy and sell certificates during the trading period, and system can report certificate ownership at close of settlement period to verify RPS compliance
  - ❑ Trade of certificates is typically tracked by, but not done by, the registry
-

# The Costs of Registry Systems

## ▣ Texas RECs

- ▣ APX developed software, ERCOT manages operations
- ▣ Only renewable energy generators covered, primarily for RPS but also green marketing, no emissions information
- ▣ \$500k for system start-up, less than one FTE to operate

## ▣ NEPOOL GIS

- ▣ APX developed software and manages operations
  - ▣ Covers all generation in and delivered to New England, tracks more attributes than Texas, and is used more comprehensively for RPS, disclosure, EPS, etc.
  - ▣ ~\$2.5 million over 5 years for start-up and operations
-

# Other Accounting Options

## ❑ Contract-Path Bundled Electricity

- ❑ Following the contractual paper trail for electricity works best when: few buyers and sellers, regulated markets, long-term deals for full output of generators, low need for trading between market participants and regions, low risk of double counting

## ❑ Hybrid Systems

- ❑ NY disclosure requires bilateral electricity contracts or conversion transactions (CTs)
  - ❑ CTs effectively allow limited unbundling of “attributes” from electricity as long as they are rebundled– RE generators that sell electricity to the spot market can sell their “attributes” to parties purchasing electricity from the spot market
-

# Possible Limitations of Conversion Transactions for RPS Compliance

- CTs have many of the benefits of full certificates, but there are limitations to their use for an RPS
    - **Record keeping and administration:** sellers must identify ultimate buyers and vice versa, reducing liquidity and role of brokers and intermediaries
    - **No direct sale of TRCs:** buyers must purchase from spot market and generators must sell to spot market for “attributes” to unbundle
    - **Compatibility with neighboring markets:** CTs may not be entirely compatible with NE GIS and ultimate PJM system
-

# Benefits of Unbundled Certificates for RPS Accounting and Trading

- ❑ Ease of Administration with Automated Systems
  - ❑ Rock-Hard Verification Prevents Double Counting
  - ❑ Consistency with Accounting Systems of Neighboring Regions
  - ❑ Cost Minimization
    - ❑ Liquidity and Flexibility of Trade, Contracting, and Compliance
    - ❑ Low Transaction Costs of Trade
    - ❑ Helps Overcomes Barriers to RE (e.g, transmission constraints)
    - ❑ Eliminates Temporal Mismatch Between Generation and Demand
  - ❑ More Consistent with Capability of ESPs to Manage Purchases
  - ❑ Can Be Developed at Reasonable Initial and Ongoing Costs
-

# What Can't Certificates Do?

- ❑ Finance a merchant renewable plant in light of uncertain demand drivers
  - ❑ Increase liquidity of renewable energy trade that is fundamentally limited in other ways
  - ❑ Reduce problems of the creditworthiness of thinly capitalized retailers to support financing of new RE
  - ❑ Solve policy issues associated with the import-export of renewable energy across market boundaries
-

# Non-Comprehensive List of Major Issues to Consider if Contemplating Use of Certificates

- ❑ Complete certificate system for all generation, or just RE
  - ❑ Compatibility with NY disclosure system
  - ❑ Treatment and accounting for imports and exports
  - ❑ Compatibility with accounting systems of nearby states
  - ❑ Treatment of customer-sited renewable electricity
  - ❑ Rules for trading, banking, and settlement of certificates
  - ❑ Ownership of certificates from existing generators
  - ❑ Treatment of emissions credits under a certificate system
-