(Attachment J)

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# WREGIS Implementation and Capabilities of Regional Tracking Systems

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# Summary

- Overview of Regional Tracking Programs in the US
- Tracking Programs Comparison
- Emission Tracking
- Tracking Energy Delivery
- Supporting Energy Efficiency programs
- Supporting Greenhouse Gas  programs


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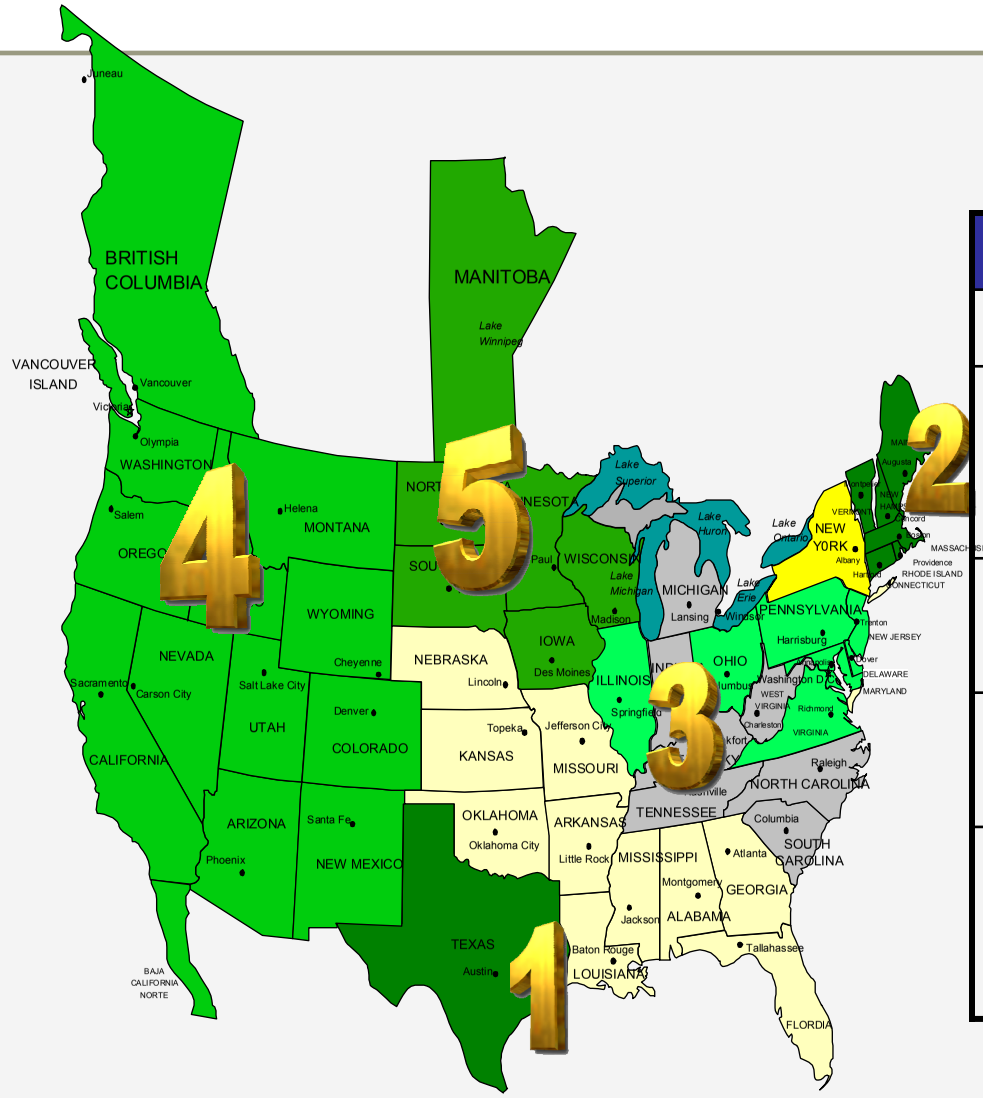
# Regional Tracking Systems in the US




| Region | Launch | APX Role |
|---|---|---|
| 1: ERCOT | 2001 | Develop |
| 2: NEPOOL GIS | 2002 | Develop, Operate, Administer |
| 3: PJM GATS | 2005 | Develop |
| 4: WREGIS | 6/2007 | Develop, Operate |
| 5: M-RETS | 7/2007 | Develop, Operate, Administer |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# Comparison of Tracking Systems

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| FEATURE | NEPOOL | PJM | WREGIS | MRETS | ERCOT |
|---|---|---|---|---|---|
| **Verification, Certificate creation, RPS Compliance for Renewable Generators** | √ | √ | √ | √ | √ |
| **Verification, Certificate creation, RPS Compliance for non-Renewable Generators** | √ | √ | | | |
| **Emissions Tracking ($CO_2$, $SO_2$, $NO_X$)** | √ (*) | √ | | | √ |
| **Deliverability** | √ | √ | | | |
| **Energy Efficiency** | √ | | | | |
| **Carbon Avoidance** | | | | | |
| **Allowances (Cap Monitoring & Enforcement)** | | | | | |
| **Trading (tradable commodity separate from a traditional REC)** | | | | | |

(*) NEPOOL GIS also tracks CO, Mercury, Particulate Matter, & Volatile Organic Compounds


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# Emissions Tracking

| Current use of Emissions Data | NEPOOL | PJM | WREGIS | M-RETS | ERCOT |
|---|---|---|---|---|---|
| **Reporting to Air Regulators: Fuel Mix, Total Emissions by Fuel and by Generator, System Emission Mix, etc** | √ | √ | | | √ |
| **Emission Data Source** | | | | | |
| **EPA** | √ (**) | √(*) | N/A | N/A | |
| **Self-Reported (CEM data)** | √ | √ | N/A | N/A | √ |
| **Mandatory Generator Registration** | √ | (***) | | | |

**(*) EPA data provided to, and subsequently used in GATS is up to a year old.**
**(**) EPA data is used each quarter to verify that identified units are accurately reporting their emissions into GIS**
**(***) Generator registration in PJM GATS is voluntary. However, emission data are modeled for all PJM-area generators**


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# Deliverability

- Tracking System can be used to prove that energy was delivered to a specific state and/or region
- NERC Tags are used to prove energy delivery – typically, ISO/RTO provide hourly import schedule to Tracking System, which matches claimed with actual NERC Tag ID
- Both System and Unit Contracts are supported
- Successfully used in New England and PJM
- Functionality exists in WREGIS system


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# Energy Efficiency

- Starting with Connecticut, states are building mandatory and voluntary compliance programs around Energy Efficiency
- Tracking Systems (NEPOOL GIS), support these programs: One Certificate created per 1 MWh of energy efficiency savings or avoided power generation
- Similar to RPS, state regulators define an annual obligation (% of state load) – as in RPS, tracking system is used to facilitate certificate trading and compliance reporting
- Example: Connecticut's Energy Efficiency program (Class III), nicely integrated in NEPOOL GIS


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# Carbon Avoidance

- Enhancing a Tracking Systems to calculate the avoided emissions for every MWh of energy is not difficult
- The formula for avoided emissions takes into account several factors, such as geography and the emissions footprint for the state or region
- Tracking system still creates one certificate per MWh – additionally, creates carbon avoidance certificates (one per Ton $CO_2$), and maintains "cluster" with original, MWh-based certificates
- Certificates can be used in either REC or Carbon Trading Programs. System reliably supports policy, by "retiring" the appropriate "cluster" of certificates


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# Allowances & Offset Management

- Existing functionality in Tracking Systems supports Load Obligations Management (creation, transfer, compliance)
- Functionality can be enhanced to support Allowances and Offsets in Carbon Trading programs
- Tracking System will provide then a fully integrated solution, linking REC, Energy Efficiency and Carbon Trading programs


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# Linking Renewables, Energy Efficiency & Carbon

- RECs and their Avoided Emissions can play an important role in the Carbon Markets, but only if the Avoided Emissions can be calculated and tracked
- Extending the current infrastructure, is the most efficient and cost effective approach to handle Emission Allowances and Avoided Emissions
- Doing so is neither costly nor difficult, and the approach is being advocated by a number of stakeholders in the industry


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# Tracking Systems role in RGGI

- In the Regional Greenhouse Gas Initiative (RGGI), NEPOOL GIS and PJM GATS will be used to calculate:
  - the amount of electricity being used in the RGGI region (currently Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey and Delaware)
  - the environmental attributes of generating units within the RGGI region
  - the environmental attributes of generating units outside the RGGI region, and
  - the environmental attributes of power being imported into the RGGI region from outside the RGGI region
- Ongoing debate about using tracking systems in managing RGGI allowances
- This market infrastructure, provided by APX, can be made available in WREGIS


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