

Considerations for Emerging Markets for Energy Savings Certificates



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What is an Energy Savings Certificate and How is it Used?

Tradable

Represent a unit of energy savings

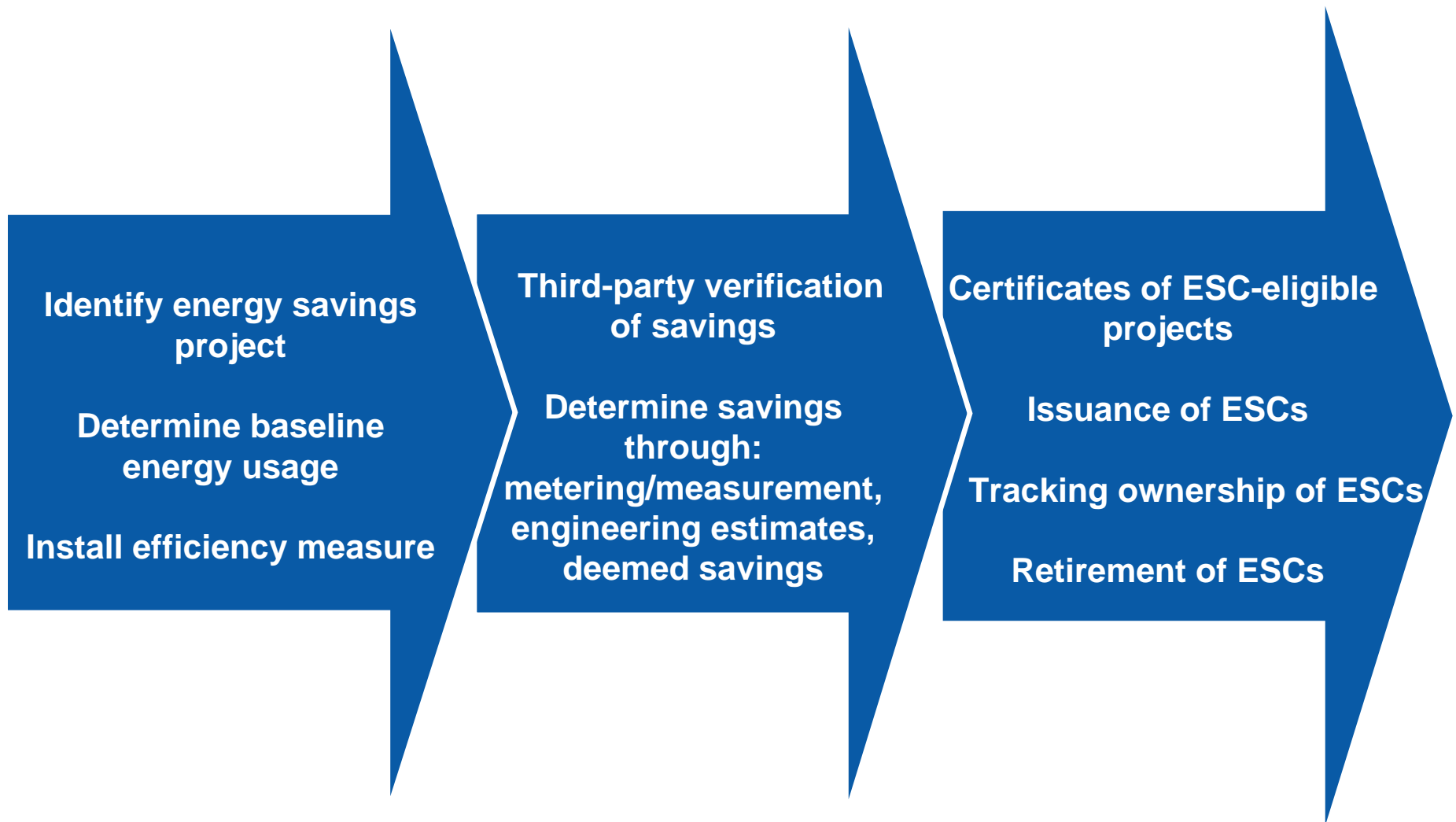


Represents benefits to society and the environment

Markets for ESCs

Units: 1 MWh, Common energy units, or Tons of oil equivalent

Steps in ESC Trading Schemes



Benefits of ESCs

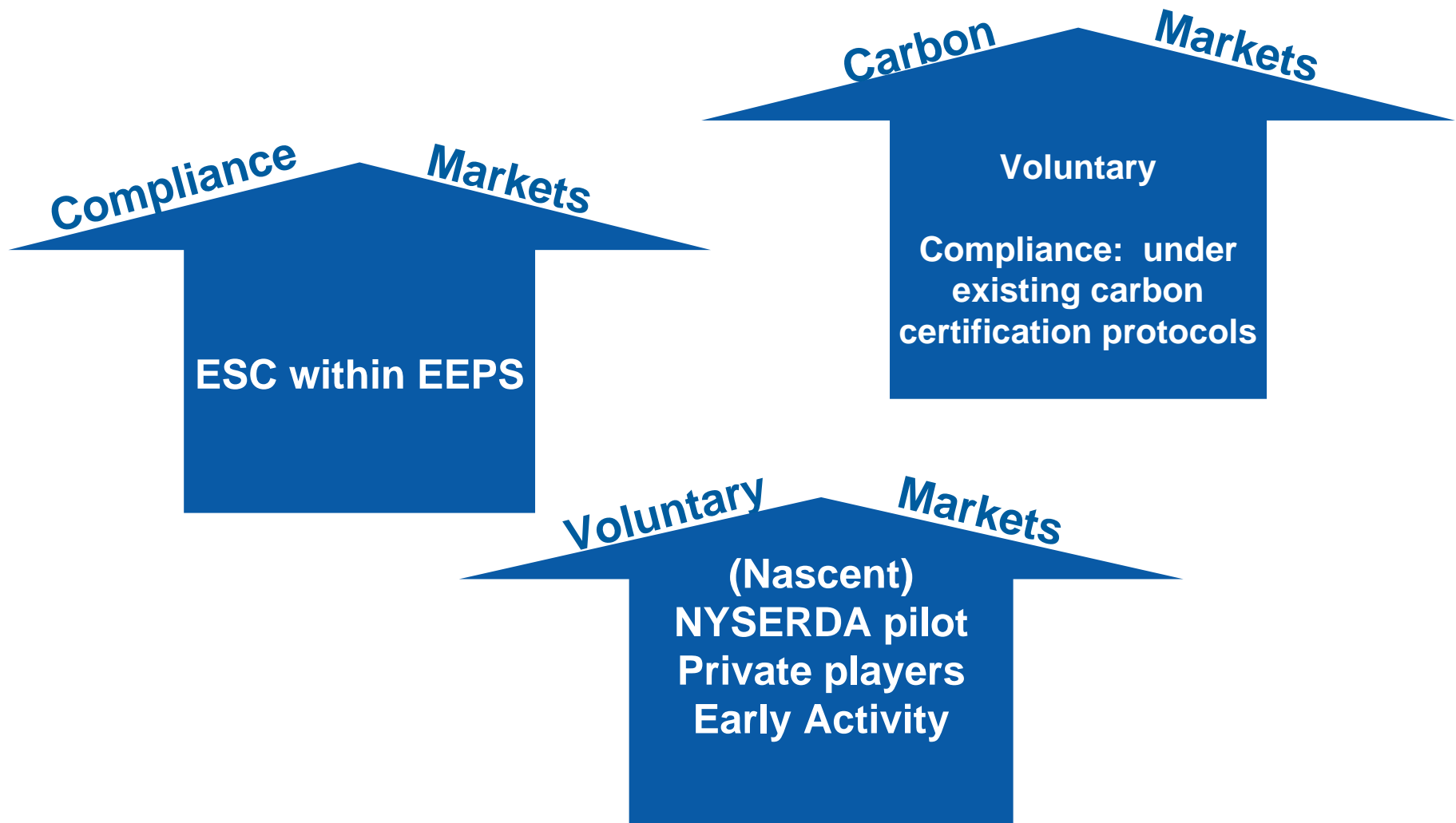
- **Free market forces to increase efficiencies**
- **Increase competition from the private sector**
- **Reduced payback periods, leading to:**
- **Project type and participant diversity**



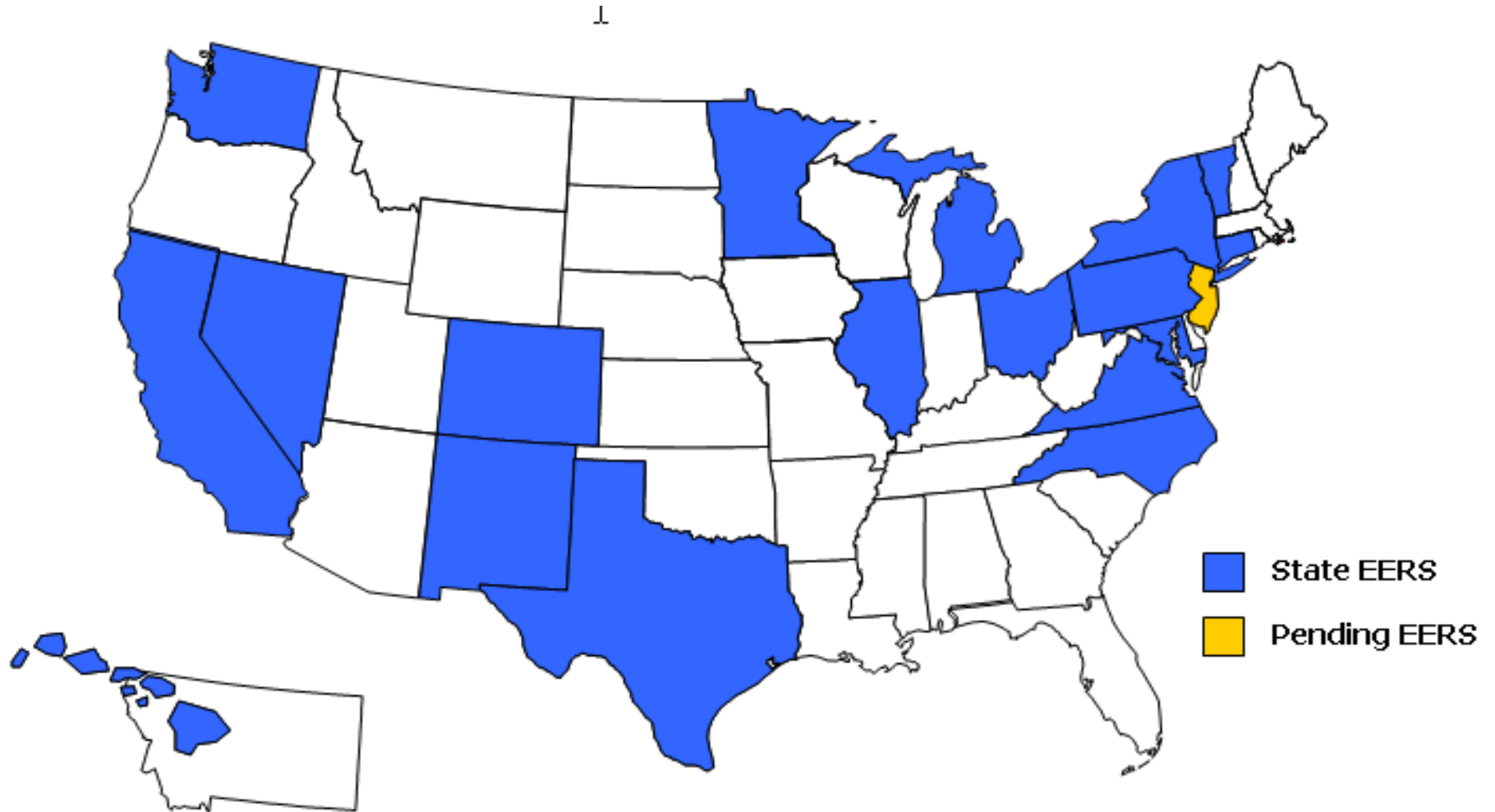
Criticisms, Challenges, and Hurdles

- **Transaction costs: complexity of market and data collection**
- **Measurement and verification: Need for uniformity and consistency to support trading**
- **Tracking ownership: an automated system is key**
- **Credibility issues: must be real AND additional**
 - **Cream skimming**
 - **Free ridership**
- **National EEPS: unique issues**

Markets for ESCs



Energy Efficiency Portfolio Standards (EEPS) States



Source: American Council for an Energy Efficient Economy (ACEEE)

Potential ESC Compliance Market in States with Existing Long-Term Energy Efficiency Obligations

State	ESC Market Potential (GWh)		
	2010	2015	2020
Standalone EEPS			
CA	15,491	18,654	11,021
CT	1,125	1,330	1,400
CO	1,101	1,171	1,233
IL	1,604	11,441	24,449
MD	2,441	7,470	10,298
MN	684	4,255	7,361
NM	401	936	1,604
NY	6,438	16,255	21,979
OH	1,115	7,523	17,160
TX	3,193	4,463	4,769
<i>Subtotal</i>	<i>32,881</i>	<i>74,135</i>	<i>103,432</i>
Energy Efficiency Included in Broader Portfolio Standard			
HI	308	878	1,316
NC	0	2,713	6,902
NV	1,062	2,119	2,525
PA	0	0	0
<i>Subtotal</i>	<i>1,370</i>	<i>5,711</i>	<i>10,742</i>
<i>Total</i>	<i>34,251</i>	<i>79,845</i>	<i>114,174</i>

NYSERDA Voluntary ESC Pilot Program

- **Purposes:**
 - Increasing EE measures
 - Improving the transparency and credibility of ECS markets
 - Addressing potential emissions “leakage” from RGGI
- **Aggregates ESCs**
- **Auctions to brokers or consumers**
- **Uses proceeds to fund EE projects**
- **ESCs donated by customers in the Peak Load Reduction Program, Summer 2007**
- **Costs minimized by:**
 - using M&V from pre-existing program,
 - Estimating/issuing the ESCs earned over lifetime of project.
- **Tracking: no automated system; attestations from brokers**
- **Hybrid, with characteristics of voluntary and compliance markets**

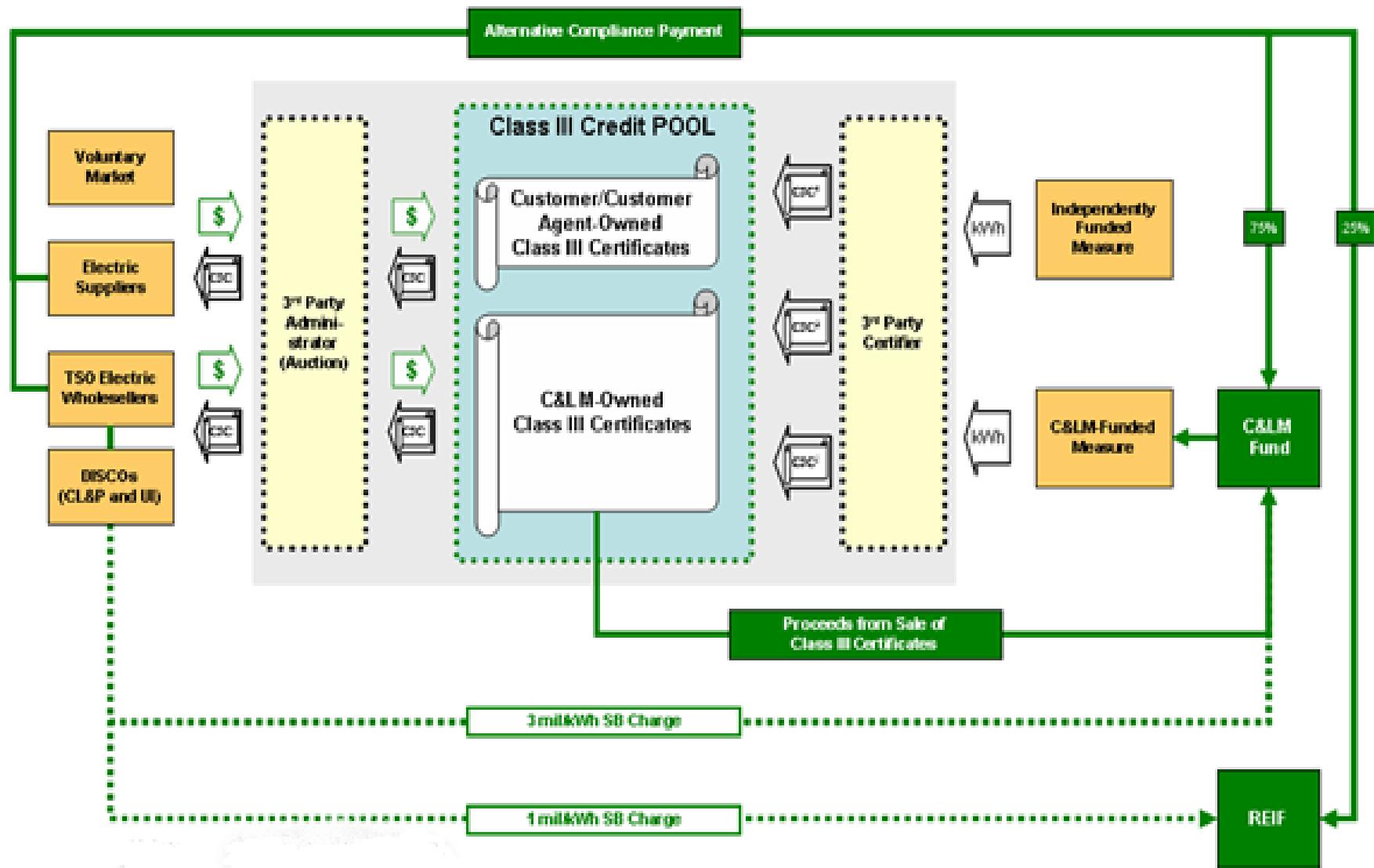
ESC Trading in Connecticut: NEPOOL GIS Snapshot

- Trading Experience
- NEPOOL Tracking
- Program structure and lessons learned
- Residential Rules
- Other notable provisions

Fuel	Number of Certificates Traded
Solar Photovoltaic	762
Fuel cell	3,227
Digester gas	9,096
Efficient Resource (Maine)	50,934
CLM	76,743
Wind	181,798
Landfill gas	252,799
Biomass	320,371
Municipal solid waste	340,409
Wood	489,610
Trash-to-energy	532,365
Jet	547,315
Diesel	813,650
Oil	1,093,789
Hydroelectric/Hydropower	2,526,166
Coal	4,912,296
Natural Gas	8,745,525
Nuclear	9,608,300
Total	30,505,155

Source: NEPOOL GIS

Connecticut Compliance Trading Scheme



Source: Connecticut DPUC

Key Structural Elements of ESCs Programs

- **Targets**
- **Certifying body**
- **Additionality, Free Ridership, and Cream Skimming**
- **Eligible Project Types**
- **Trading Rules**
- **Measurement and Verification**
- **Reporting and Tracking Requirements**
- **Length of Issuance Period, Up-front Issuance, and Banking Rules**
- **Alternative Compliance Payments (ACPs)**





NREL

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Innovation for Our Energy Future

Thank you for your attention!

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