

# Creating an Additional Value Stream for Energy Efficiency - White Tags™

NAESCO Northwest Regional Meeting

June 15, 2007

## Sterling Planet



## Renewable Energy

Solar. Wind. Water. Bioenergy.

# Company Background and Clients

- First nationwide green power marketer with 100% green energy choice – Founded in 2000
- Sold over **12,835,219,916** kWh of green energy (equal to **1,179,274** average residential customers or avoidance of **7,013,682** trips between New York City and Los Angeles)
- Nation's leader in renewable kWh sales
- Largest Transaction in U.S. green energy history (Pepsi)
- Buyer and seller of environmental attributes (RECs, White Tags™ and Carbon Credits)

## 554 Large Clients

### Universities (31)

- Harvard 
- Yale 
- Duke 
- University of Utah 
- Florida State 


### Utilities (44)

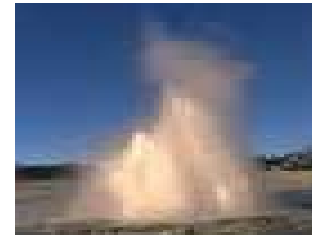
- FPL 
- Con Edison 
- PEPCO Energy 
- Constellation 
- Connecticut P&L 

### Commercial & Industrial (411)

- Alcoa 
- DuPont  *The miracles of science™*
- Johnson and Johnson 
- Pepsi 
- Staples 
- Nike 
- Whirlpool 
- 2004 Democratic Convention
- 2004 Republican Convention
- NFL (2007 Super Bowl)
- Coca Cola 

### Government (68)

- US Air Force 
- US Army 
- Homeland Security 
- NASA  National Aeronautics and Space Administration
- Western Area Power Administration
- US EPA 
- US GSA  U.S. General Services Administration
- National Renewable Energy Lab
- Veterans Affairs 
- State of New York
- State of Illinois



# Sterling Planet is Active in All 3 Markets

## REC Markets

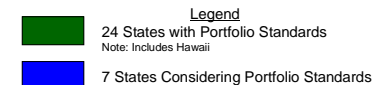
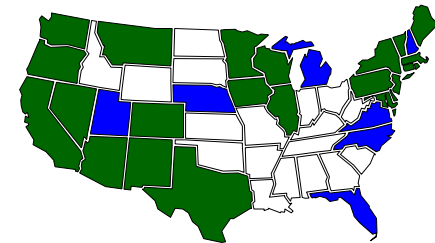
### Voluntary Markets

- Customers voluntarily pay more for renewable energy
- Participating in 23 (44 Overall) utility renewable marketing programs in:
  - Florida, Massachusetts, New York, Connecticut, New Jersey, Rhode Island and Washington, DC

### Mandated Markets

- Sell RECs to utility to satisfy RPS
- Manage RECs exchange among utilities
- Provide RECs to government agencies

Target Marketing – Portfolio Standards States



## GHG Emission Markets

### Greenhouse Gas Emission Markets

- Very Early in its Definitions and Rules
- More Advanced in:
  - Europe
  - Japan



# “Voluntary” Market

- RECs represent the contractual right to claim the environmental and other attributes associated with electricity generated from renewable energy. Companies apply these to their Greenhouse Gas (GHG) emissions.



- Bank of America pledges to reduce its total U.S. GHG emissions by 9% from 2004 to 2009.
- Eastman Kodak pledges to reduce total global GHG emissions by 10% from 2002 to 2008.
- Gap pledges to reduce its U.S. GHG emissions by 11% per square foot from 2003 to 2008.
- Marriott pledges to reduce U.S. GHG emissions by 6% per available room from 2000 to 2010.
- Pfizer pledges to reduce global GHG by 35% per \$ of revenue from 2000 to 2007.
- Baxter, IBM, NREL and SC Johnson achieved their ambitious 2000 to 2005 goals.

# Connecting The Market

U.S. EPA	DuPont	Yale	Political Conventions	Mohawk Paper	WAPA	Staples	Harvard
Nike	St. Columba	U.S. Air Force	IRS	Duke University	Johnson & Johnson	Alcoa	Coca Cola



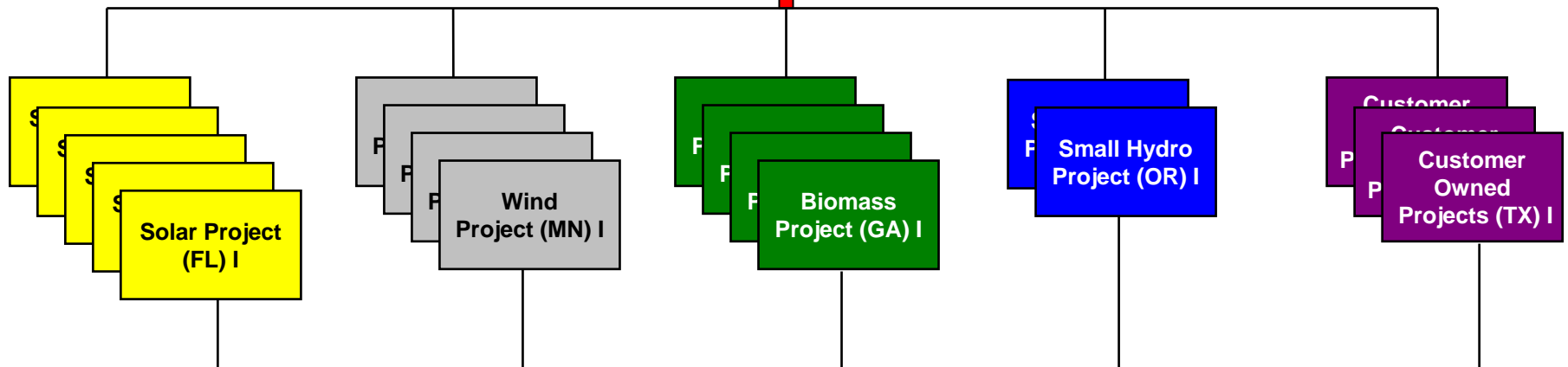
Residential Customers

Local Utility Companies



Actual Commercial and Industrial Customers  
**Sterling Planet Markets Attributes**  
 Leveraging EPA Green Partnership Program

Attribute Contracts



Electricity (Null Power) Contracts - PPA

Local Utility Companies



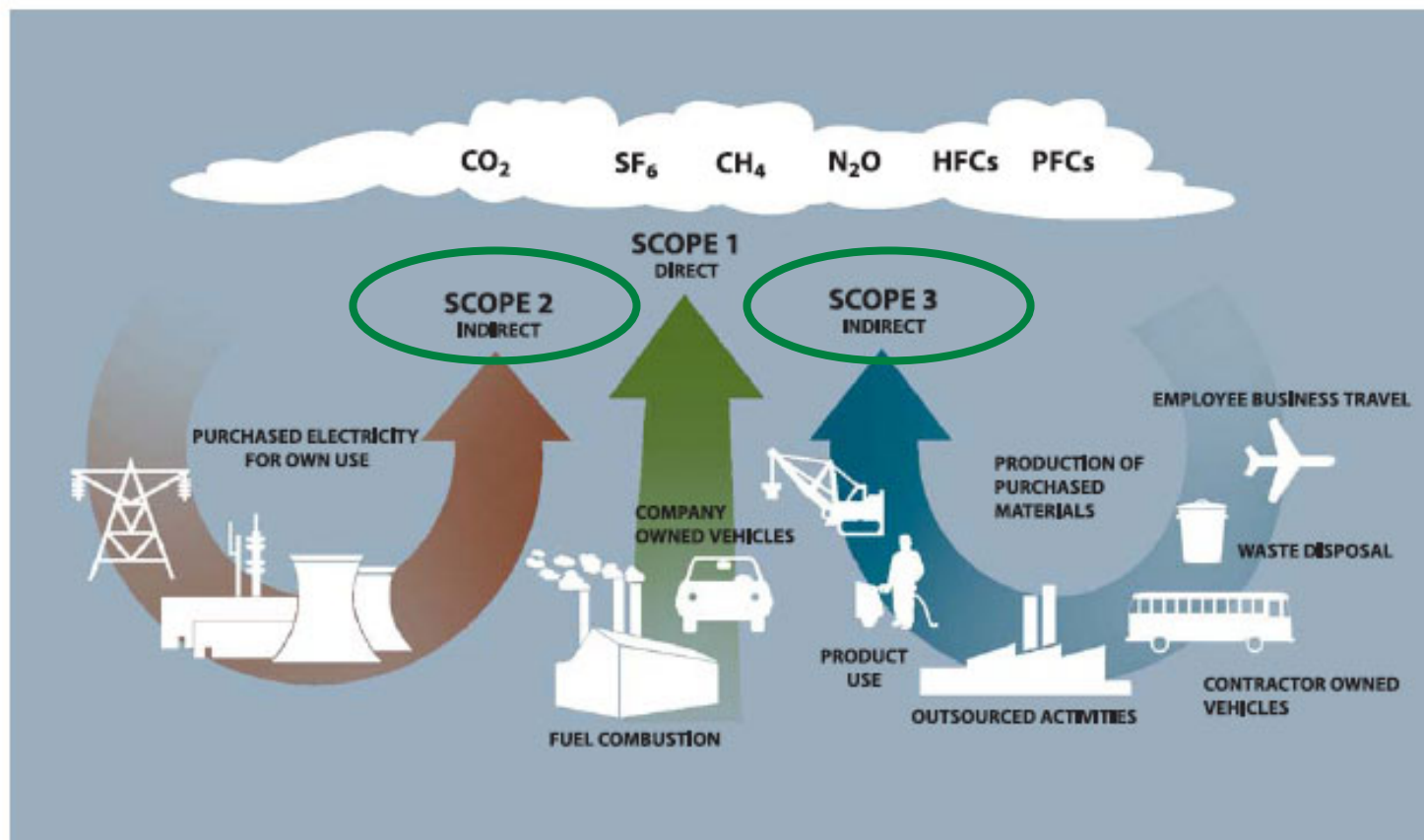
# What are White Tags?

- A new tradable attribute similar to green tags or Renewable Energy Credits (REC)
- Represents the value of energy not used (conserved) at facilities
- Created through the implementation of energy conservation (Demand-Side Management) projects
- Also known as Energy Efficiency (EE) Certificates & White Certificates



# Intersection of RECs, White Tags™ and Carbon Credits

FIGURE 5 | OPERATIONAL BOUNDARIES

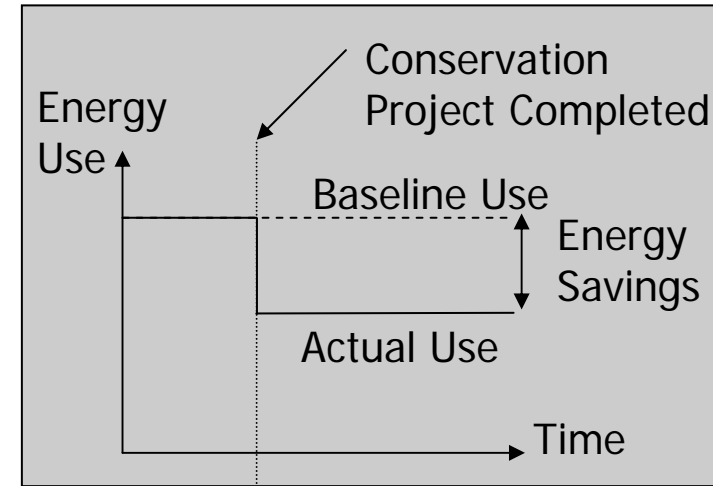


Source: New Zealand Business Council for Sustainable Development.

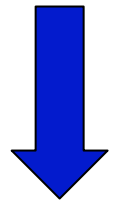
# How are White Tags Created?

Implementation of energy conservation projects at a facility, including:

- Equipment upgrades, retrofits, & replacement
- Operational modifications & set point changes
- Energy management and monitoring systems
- Combined Heat and Power (CHP) or cogeneration
- New technologies (e.g. High Efficiency Lighting).



Save \$



Create  
White Tag

## White Tags™

- Prescriptive method for direct replacement/retrofit
- Metered method for cogeneration or CHP
- Design method for new buildings (LEED)
- Modeled method for operational changes (existing and new buildings)
  - Requires establishing a baseline (actual building or reference)
  - Traditionally used facility simulation models or statistical models
    - Facility: on-site, complex, expensive, subjective - but accurate
    - Statistical, off-site, simple, inexpensive, objective - but inaccurate
  - Sterling Planet has developed neural network model - best of both



# Comparison to RECs

## White Tags™

### Many Ways the Same

- Mandated Market - Same States & Similar Mandates (%)
- Voluntary Market - Same rationale, but larger market share (vs mandated)
- Market Size - Similar, but likely larger with broader scope & faster adoption
- Certification - Similar, but more complex (savings vs generation)



### Some Ways Different

- Regulations - Facility based, not equipment based
- Measurement & Verification (M&V) - Historically problematic

# CT Regulations

## White Tags™

- 1% of total electricity use in 2007; 4% by 2010
- Owner of facility, not equipment, has title to the tags
- If utility funds project (e.g rebates), utility owns tags
- Demand-side projects must involve physical activity
- CHP projects must achieve 50% efficiency & 20% thermal output
- Projects completed after January 1, 2006 qualify for tags
- Mandated markets began trading January 1, 2007
- Compliance prices in mandated markets range from 31 to 45 \$/MWh
- Tags have a “vintage” and expire the year after created (+ 3 months)
- Certification requires the approval of a M&V plan





# Other Energy Efficiency Regulations/Policy

**PA** - Tier 2 "advanced energy resources" must account for an additional 10% of power sold. Tier 2 include energy efficiency, hydro, waste coal generation.

**NV** - 2005 amendment to the RPS to require Renewable Energy and Energy Efficiency to meet 20% of electricity by 2015, of which up to 25% can be met with energy efficiency. Has a peak demand multiplier.

**CT** – 1% by 2007; 4% by 2010.

**NY** – Opened Hearings – 15% by 2015 is their target.

**MA** – Opened Hearings – Goal not yet established.

**CA** – Met with the Public Service Commission, CA Air Board and the California Energy Commission. They are serious about upcoming legislation.

**TX** – Utilities must offset 10% of demand growth.

**IL** – 25% of projected load growth by 2017.

**HI** – Energy efficiency projects are treated the same as renewables.

**Federal Government** – 3% Energy Efficiency per Agency per Year for next 10 years.



# Questions?

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