

# “Carbon and Renewable Energy Options for the Corporate World”

## Sustainably Energizing New York’s Creative Core Conference

July 17, 2008

### Sterling Planet



### Renewable Energy

Solar. Wind. Water. Bioenergy.

# Sterling Planet Introduction

- USA's leading retailer of Renewable Energy / Environmental Attributes
  - Nation's leader in renewable kWh sales – 18,811,683,281 kWh or 3,325 in MW load for a year
  - Includes largest two transaction in U.S. green energy history (Intel and PepsiCo)
- Broadest set of environmental attributes products in the marketplace
  - Renewable Energy Certificates (RECs)
  - Energy Efficiency Certificates (White Tags™)
  - Carbon Offsets (Domestic and International)
- Blue Chip customer base and customers in 45 states
  - 1,433 Commercial and Industrial Customers (many the largest purchase in their sector)
- US Renewable Energy and Carbon Market growing at 185% annually and to be worth \$1.2 Trillion by 2012
- Sterling Planet has a \$500,000,000 in carbon projects pipeline based on renewable energy
  - With over \$120,000,000 in final phases of financial closing
- Recently received National Marketer of the Year for 2007 by the Department of Energy.
- Sterling Planet has the largest and most diversified base of renewable energy and energy efficiency suppliers in the USA



# Some of Our Clients



# Company Background and Clients

- First nationwide green power marketer with 100% green energy choice – Founded in 2000
- Sold over **18,811,683,281** kWh of green energy (equal to **1,810,208** average residential customers or avoidance of **10,279,463** trips between New York City and Los Angeles)
- Nation's leader in renewable kWh sales
- Largest Two Transaction in U.S. green energy history (Intel and PepsiCo)
- Buyer and seller of environmental attributes (RECs, White Tags™ and Carbon Credits)

## 1,433 Business Clients



### Universities (54)

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

### Utilities (73)

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

### Commercial & Industrial (1,157)

- Alcoa 
- Google 
- DuPont  *The miracles of science™*
- Johnson & Johnson 
- Pepsi 
- Cisco 
- UBS 
- Nike 
- Staples 
- Intel  *Leap ahead™*
- Wal-Mart  *Save money. Live better.™*
- 2008 and 2004 Democratic Convention
- 2004 Republican Convention
- NFL (2007 Super Bowl) 
- McDonalds  Ford 

### Government (149)

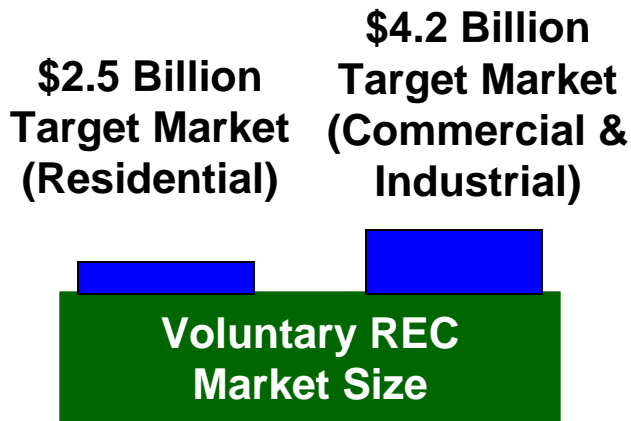
- US Air Force 
- IRS 
- Homeland Security 
- NASA  *National Aeronautics and Space Administration*
- Western Area Power Administration
- US EPA 
- US GSA  *U.S. General Services Administration*
- National Renewable Energy Lab
- Veterans Affairs 
- State of New York 
- State of Illinois 



# Green Energy Market and Market Size

**U.S. Electricity Market is Over \$250 Billion a Year**

**\$10 Billion - \$3 Trillion Target Market (Global Green House Gas Emissions)  
Current Estimated at \$1.2 Trillion in 2012**

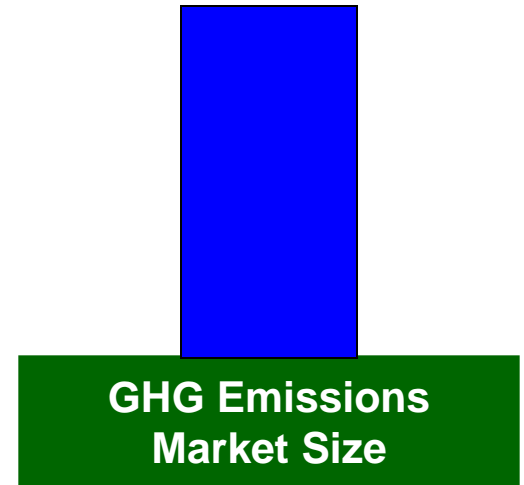


Source: Department of Energy

**\$53 Billion Target Market (RPS)**



Source: Global Energy Decisions



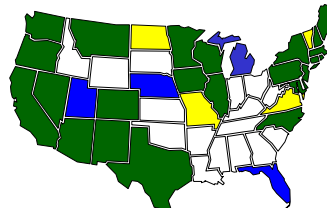
Source: Price Waterhouse-Coopers / Canter Fitzgerald

**Customers Voluntary Pay More**

**24 Utility Marketing Programs in:**

- Florida
- New York
- New Jersey
- Connecticut
- Massachusetts
- Rhode Island

States with Renewable Portfolio Standards or Goals



25 States with Portfolio Standards  
Note: Includes Hawaii and D.C.  
4 States with Renewable Portfolio Goals  
4 States Considering Portfolio Standards

**Very Early in its Definitions and Rules**

**More Advanced in:**

- Europe
- Japan

# Sterling Planet is Active in All 3 Markets

## REC Markets

### Voluntary Markets

- Customers voluntarily pay more for renewable energy
- Participating in 24 (73 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

## GHG Emission Markets

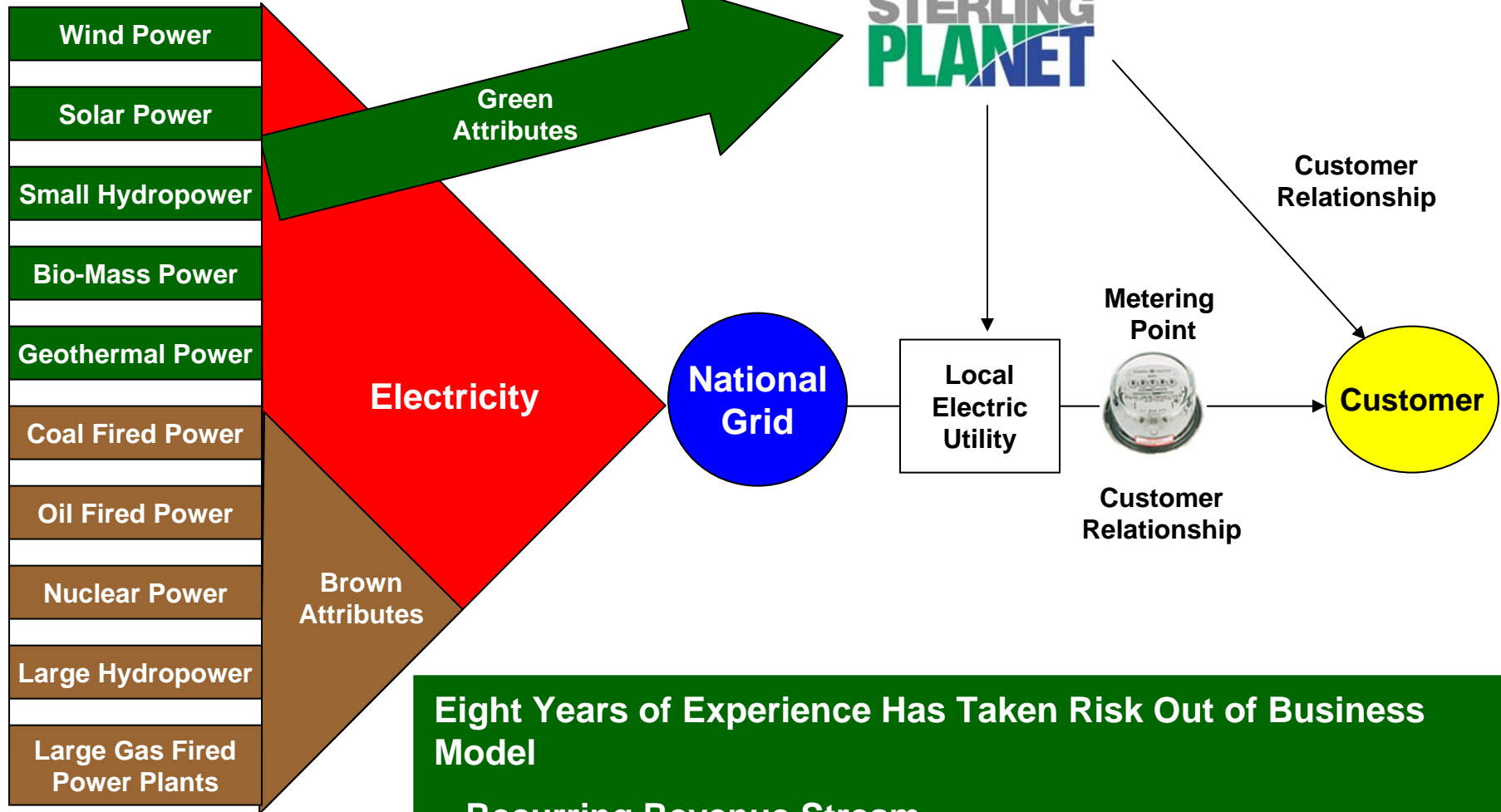
### Greenhouse Gas Emission Markets

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



# How It Works?

## Electric Power Plants



**Eight Years of Experience Has Taken Risk Out of Business Model**

- Recurring Revenue Stream
- Market is Rapidly Growing and Becoming "Mainstream"

# Connecting The Market / How Are They Created?

U.S. EPA	Intel	Yale	Political Conventions	Mohawk Paper	WAPA	Cisco	Harvard
Nike	St. Columba	U.S. Air Force	IRS	Duke University	Johnson & Johnson	Alcoa	PepsiCo



Residential Customers

Local Utility Companies

**STERLING PLANET**

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



Attribute Contracts (Renewable Energy Certificates)

Attribute Contracts (Carbon Credits)

Attribute Contracts (White Tags™)

Solar Project (FL) I

Wind Project (MN) I

Biomass Project (GA) I

Energy Efficiency Project (OR) I

Carbon Project (TX) I

Electricity (Null Power) Contracts - PPA

Local Utility Companies



# Sterling Planet Business Lines

- Managing/Operating Utility Green Pricing Programs
- Direct Sales of Environmental Attributes (i.e. RECs, White Tags™ & Carbon Offsets) to Businesses and Organizations
- Managing/Operating Conservation Programs
  - ✓ First in the Market to Offer White Tags™
- Direct Sales of Environmental Attributes to Mandated Market Participates (Utilities and Governments)
- Development of Carbon Projects



# 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



# 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)



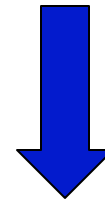
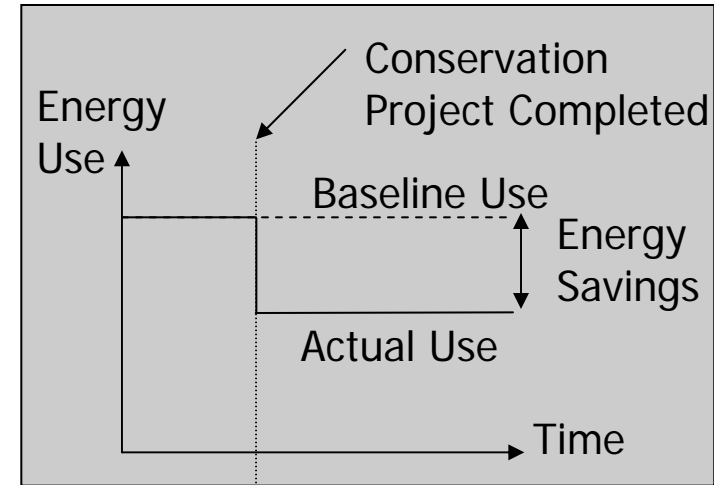
### Some Ways Different

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

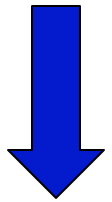
# How are White Tags Created?

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

# US Renewable Energy Market

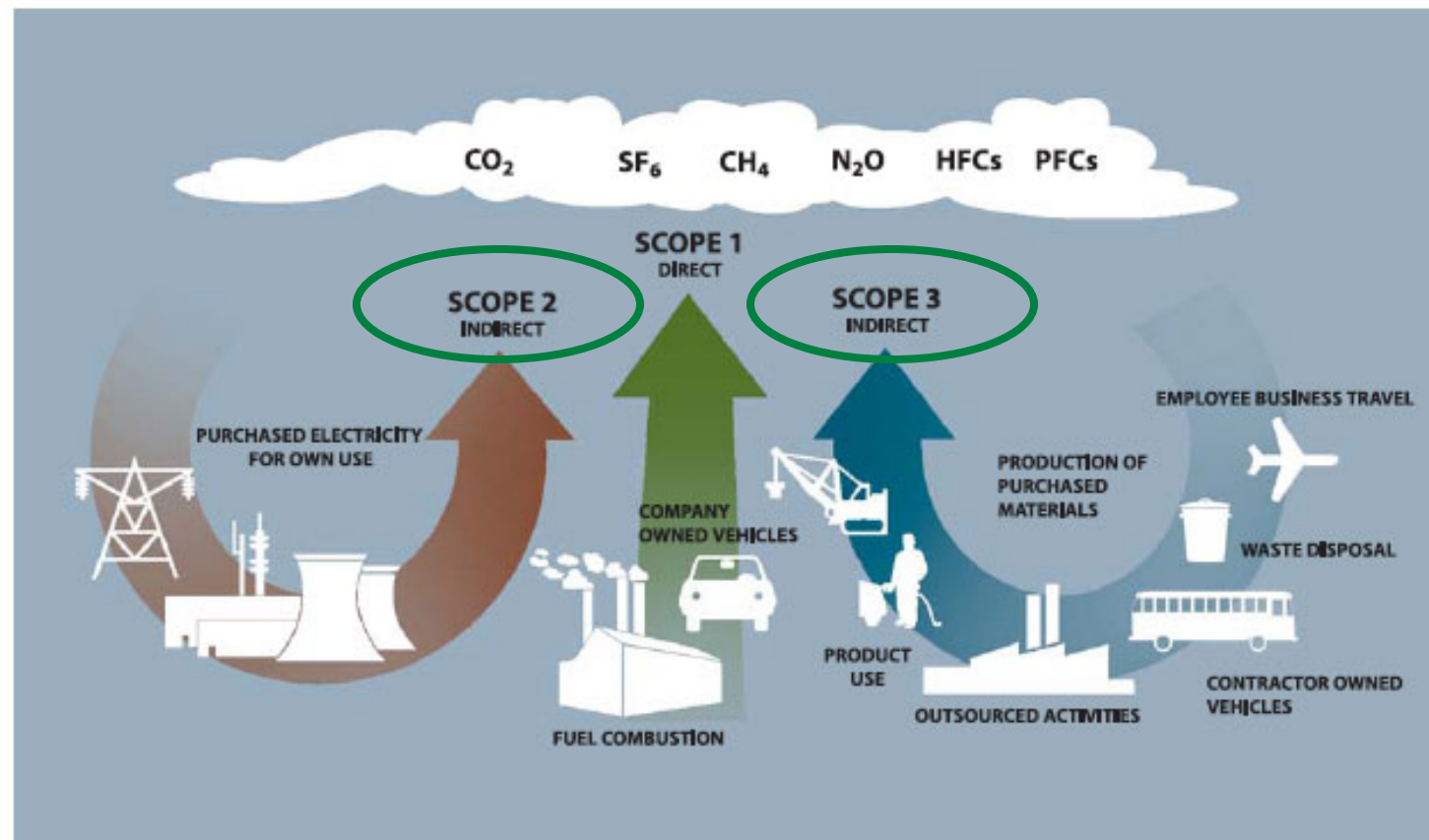
- RECs represent the contractual right to claim the environmental and other attributes associated with electricity generated from renewable energy. Companies apply these to their Greenhouse Gas (GHG) emissions.



- 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.

# Intersection of RECs, White Tags™ and Carbon Credits

FIGURE 5 | OPERATIONAL BOUNDARIES



Source: New Zealand Business Council for Sustainable Development.

# Top 25 Renewable Energy Purchasers

	<u>Ranking</u>	<u>% of Load</u>	<u>Total Annual Volume</u>	
• Intel	#1	46%	1,302,040,000	Sterling Planet
• PepsiCo	#2	100%	1,144,773,154	Sterling Planet
• U.S. Air Force	#3	9%	899,143,000	Sterling Planet
• Wells Fargo	#4	42%	550,000,000	
• Whole Foods Market	#5	100%	509,104,786	
• The Pepsi Bottling Group	#6	100%	470,216,838	Sterling Planet
• Johnson & Johnson	#7	38%	434,854,733	Sterling Planet
• Cisco Systems	#8	51%	373,500,000	Sterling Planet
• City of Dallas, TX	#9	40%	333,569,840	
• HSBC North America	#10	93%	300,000,000	

**Sterling Planet Has Sold to 6 of the Top 10 Purchasers**

# Top 25 Renewable Energy Purchasers (continued)

	<u>Ranking</u>	<u>% of Load</u>	<u>Total Annual Volume</u>	
• U.S Environmental Protection Agency	#11	100%	299,331,375	Sterling Planet
• City of Houston, TX	#12	20%	262,800,000	
• Kohl's Department Store	#13	35%	236,107,000	Sterling Planet
• University of Pennsylvania	#14	46%	192,727,000	
• Starbucks	#15	20%	185,000,000	
• DuPont Company	#16	4%	180,063,500	Sterling Planet
• LA County Sanitation Districts	#17	54%	171,144,000	
• U.S. Department of Energy	#18	3%	157,964,000	Sterling Planet
• Commonwealth of Pennsylvania	#19	16%	157,200,000	
• Pepsi Americas	#20	100%	157,062,875	Sterling Planet
• Vail Resorts	#21	100%	152,000,000	
• New York University	#22	100%	132,000,000	
• NatureWorks	#23	100%	130,000,000	Sterling Planet
• Staples	#24	20%	121,800,000	Sterling Planet
• The World Bank Group	#25	100%	114,735,000	

**Sterling Planet Has Sold to 13 of the Top 25 Purchasers**

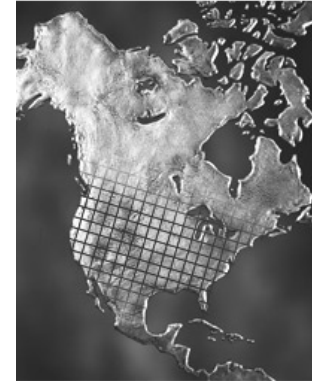
Source – U.S. Environmental Protection Agency

# Rapid Growth in US Market

- Mayor's Commitment to Climate Change --- Includes **850** To Date

## City Government (18)

- City of Chicago, IL
- City of Syracuse, NY
- City of Somerville, MA
- City of Lebanon, CT
- City of Westport, CT
- City of Manchester, CT
- City of Portland, CT
- City of North Stonington, CT
- City of Bloomfield, CT
- City of Coventry, CT
- Pella, IA
- Sheboygan, WI
- Montgomery, NJ
- Norfolk, CT
- West Hartford, CT
- City of Stratford, CT
- Norfolk Gate Post, CT
- Southwood, NY



- University and Colleges President's Challenge --- Includes **558** To Date

## Universities (54)

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



# Global Renewable Energy Market

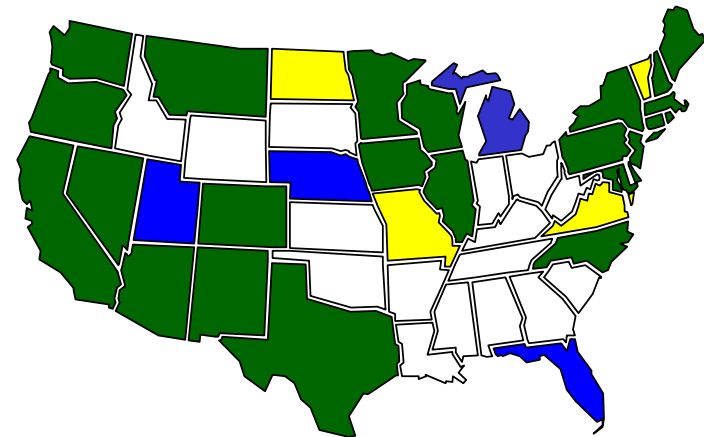
## MANDATED MARKET

- 29 states with portfolio standards or goals (green and yellow); 4 states considering (blue)
- Sell RECs directly to the utility to satisfy Renewable Portfolio Standards (RPS)
- Manage RECs sales among utilities
- Provide RECs to government agencies (currently 138)
- In Europe, 27 EU countries are looking at deregulation and renewable portfolio standards
- Europe and Asia much more progressive in the renewable energy area

## VOLUNTARY MARKET

- Customers voluntarily pay more for renewable energy
- Sterling Planet participating in 24 utility renewable energy marketing programs in CT, FL, MA, NJ, NY, RI and DC

### States with Renewable Portfolio Standards or Goals



- 25 States with Portfolio Standards  
Note: Includes Hawaii and D.C.
- 4 States with Renewable Portfolio Goals
- 4 States Considering Portfolio Standards

# Global Market for White Tags™

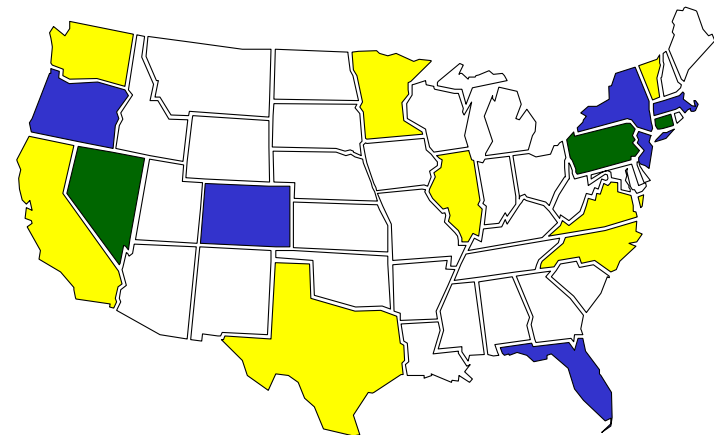
## MANDATED MARKET

- Mandated in 3 states – CT, NV and PA
- 9 states with energy efficiency goals likely to move to White Tag™ standards
- Likely in 17 other RPS states
- Each state defining own White Tag™ standard
- Pending federal legislation –
  - House Version of Energy Bill has a 4% of the 15% Federal Renewable Portfolio Standard (27% of RPS by 2020)
- EU considering a 20% Energy Efficiency Standard throughout Europe

## VOLUNTARY MARKET

- Sterling Planet offering White Tags™ as Carbon Neutral alternative to RECs for Indirect Customers Scope 2 and 3 emission needs
- EPA and DOE in the process of developing M&V standards for White Tags™

### White Tags™ and EE Portfolio Standards States



- 3 States with White Tags™ Portfolio Standards
- 9 States with EE Portfolio Standards Note: Includes Hawaii
- 6 States Considering EE or White Tags™ Portfolio Standards

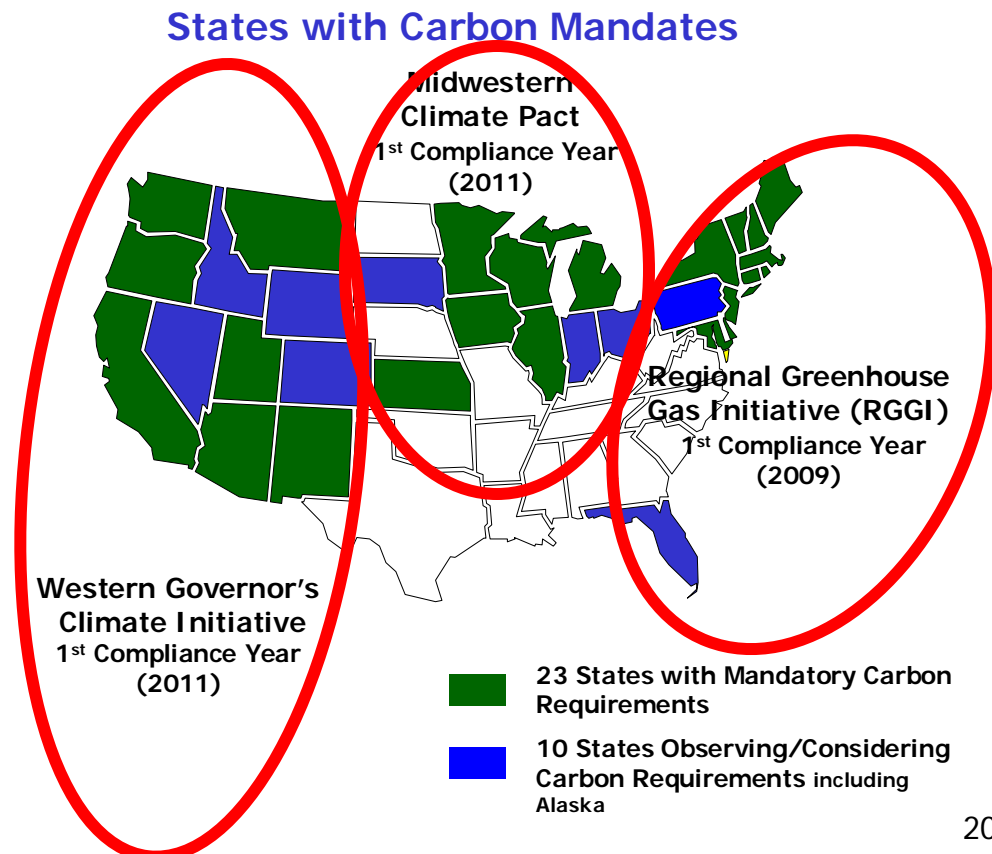
# Global Carbon Market

## MANDATED MARKET

- 23 states with mandatory carbon commitments (green); 10 states observing/considering (blue)
- All but 3 countries (U.S., China and India) have signed to meet Kyoto Accord
- Meeting in Bali held to look at 15 largest countries greenhouse gas commitments
- Federal legislation looming in not to distant future

## VOLUNTARY MARKET

- Customers voluntarily pay more for carbon neutral product
- Businesses, universities and cities have signed on to voluntary commitments



# Family of Renewable Technologies

## Strengths & Weaknesses

### Environmental View of Technology

Excellent	Excellent	Average	Average	Good
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### Infrastructure View of Technology (i.e. Interconnection Issues and Delivery (i.e. Use of T&D Assets))

Good	Poor	Average	Average	Average
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### Siting and Location of Technology (i.e. Onsite Generation and Community Support)

Good	Poor	Average	Average	Average
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### Electricity Production Value of Technology (i.e. Baseload, Power Firmness, or Peaking Value)

Excellent	Poor	Excellent	Good	Excellent
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### Cost View of Technology

Terrible	Good	Average	Good	Good
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### U.S. Jobs and Local Economic Development View of Technology

Good	Poor	Excellent	Poor	Good
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### Nationwide Coverage

Excellent	Average	Excellent	Average	Poor
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### State of Connecticut's Future Opportunities

Excellent	Poor	Good	Poor	Poor
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Solar



Wind



Biomass



Small Hydro



Geothermal



# Measurement & Verification is Critical

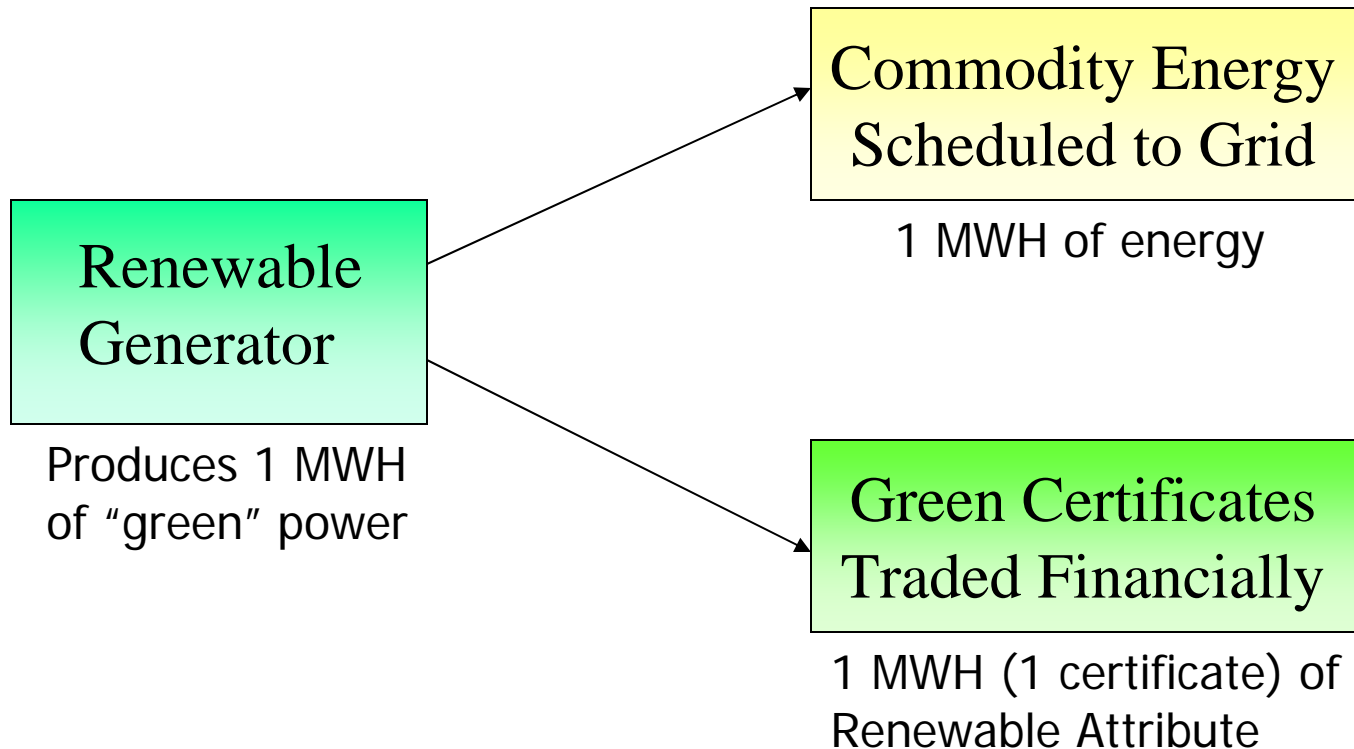
## MANDATED MARKET

- RPS – APX Tracking Systems is Dominant Player

## VOLUNTARY MARKET

- Green-e and ERT Most Widely Used Programs
- APX National Tracking System Will Bring More Credibility to the Market

# Green Power is Unbundled into Two Products



# Examples of Certificates

- All Certificates Have In Common:
  - **Credibility**
  - **Accepted by All**
  - **Perceived Value by All Parties**
  - **Used with or without Formal Paper**
- Renewable Energy Certificates
- Carbon Credits
- Currency
- Diplomas

# REC Ethical Guidelines And Disclosure

- Give customers contract terms, pricing and termination fees in easily understood format
- Provide prospective power content label and annual product content data to customers
- Verify resource claims through annual process audit
- Agree to sell renewable energy only once
- Not overstate the environmental attributes of product or use misleading advertising
- Notify customer when the portfolio falls outside of original claims

# REC Customer Disclosure

## RENEWABLE CERTIFICATE LABEL

This is a renewable certificate product. For every unit of renewable electricity generated, an equivalent amount of renewable certificates is produced. The purchase of renewable certificates supports renewable electricity generation, which can help offset conventional electricity generation in the region where the renewable generator is located. This does not represent a sale of electricity delivered to you.

This product matches X% of your estimated electricity usage. The product will be made up of the following new renewable resources averaged annually. [use alternate language below for fixed size blocks and historic disclosure]

New <sup>1</sup> Renewable Resources in [PRODUCT NAME]		Generation Location
Biomass	X %	
Geothermal	X %	
Low Impact Hydro	X %	
Solar	X %	
Wind	X %	

<sup>1</sup> Includes renewable generators that first started operating after January 1, 1999 or as regionally defined.

**For comparison**, the current average mix of energy sources supplying the US includes: Coal (52%), Nuclear (18%), Oil (2%), Natural Gas (8%), Large Hydroelectric (10%), Other Fossil (8%), and Renewables (2%). (from USEPA E-GRID)

**For specific information about this product**, contact [Company Name], [phone], [website].

**This product is certified by the Green-e Program. For more information call 888-63-GREEN or visit [www.green-e.org](http://www.green-e.org)**

- Provide short explanatory language: customer must know they are buying a REC product
- Guidance format, can be modified with pre-approval
- List % of different renewable resources used and Geographic location identified by region or state

# Life Span of RECs For Green-e

For a REC product sold to end-use customer in 2008

Eligible REC Generation Dates			
	2007	2008	2009
Jan		x	x
Feb		x	x
Mar		x	x
Apr		x	
May		x	
Jun		x	
Jul	x	x	
Aug	x	x	
Sep	x	x	
Oct	x	x	
Nov	x	x	
Dec	x	x	

- Rule: A Green-e certified product may include RECs that are generated in the calendar year in which the product was sold, the last 6 months of the previous year, and the first 3 months of the following year.



**News & Events**

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**Press Releases**

Webcasts

Mar. 4th, 2008

[Sterling Planet Adopts APX Environmental Markets Registry](#)

Feb. 13th, 2008

[News from our Partner: Western Renewable Energy Generation Information System \(WREGIS\) Issues Certificates with APX Technology](#)

Feb. 11th, 2008

[Western Renewable Energy Generation Information System \(WREGIS\) Issues Certificates with APX Technology](#)

Feb. 7th, 2008

[APX Announces Opening of New York Office](#)

Jan. 31st, 2008

[Brian Storms Joins APX As Chairman And CEO; Goldman Sachs Becomes Minority Investor](#)

Dec. 21st, 2007

[APX Announces an Agreement Regarding an Investment by Goldman Sachs](#)

Nov. 26th, 2007

[APX, Largest Technology Provider For Environmental Markets, To Create Registry For Major Global Standards Group](#)

# Sterling Planet Adopts APX Registry

## It Tracks RECs, White Tags™ and Carbon Offsets

Current Cumulative Tradable Balance

0

### Annual Emissions Tracking

Year	Annual Baseline <i>a</i>	Annual Emissions <i>b</i>	Annual Reductions <i>c = a - b</i>	Cumulative Reductions $\Sigma^t c$
2005				
2004	10,062	4,214	5,848	13,920
2003	14,374	6,302	8,072	8,072
2002				
2001				
2000				
1999				
1998				
1997				
1996				
1995				

Online account summary and transaction logs for each client

### Transaction Tracking

Vintage Year	Tradable Reductions <i>j</i>	Acquired (Purchased) Offsets <i>k</i>	Total Additions <i>x = j + k</i>	Transferred Offsets <i>u</i>	Retirement of Offsets <i>v</i>	Total debits <i>y = u + v</i>	Annual Tradable Balance <i>z = x - y</i>
2005							
2004	5,848		5,848	5,848		5,848	0
2003	8,072		8,072	6,572	1,500	8,072	0
2002							
2001							
2000							
1999							
1998							
1997							
1996							
1995							

# Renewable Energy Market Buying Trends

## Reason to Purchase Renewable Energy

## Trend

- Product Differentiation – 59.2%
- Support / Head Off Activism – 13.9%
- Compliance – 17.7%
- Public Relations – 4.9%
- Indirect Offsets – 0.9%
- Corporate Social Responsibility – 3.4%
  - It's the right thing to do



# Stakeholder Response

The Following Groups Will Benefit and/or Be Supportive

- Public (Halo Effect)
- Investors (Informed and Enlightened Management)
- Management (When They See The Market Reaction)
- Employees (Pride)
- Regulators (Proactive NOT Reactive)
- Your Executive Management (When They See The Market Reaction)
- Kids (They Will Benefit in the Future) – Teach Them Stewardship NOW

# Questions?

## Contact Information:

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