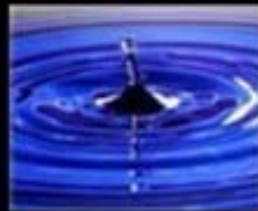


# Market-Based Instruments and Energy Efficiency

July 20, 2007

**Sterling Planet**

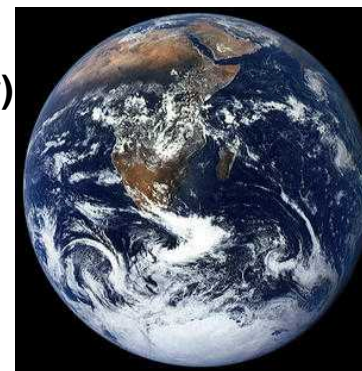


**Renewable Energy**

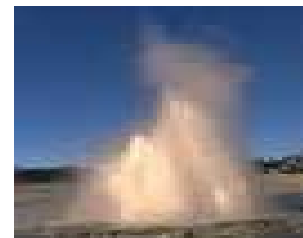
Solar. Wind. Water. Bioenergy.

# Company Background and Introduction

- First nationwide green power marketer with 100% green energy choice
- Founded January 2000
- Sold over 11,552,591,132 kWh of green energy (equal to 1,061,429 average residential customers)
  - Nation's leader in renewable kWh sales
  - Includes largest transaction in U.S. green energy history
- Buyer and seller of green energy certificates
- Intellectual Property Includes:
  - Energy Efficiency Credits Measurement and Verification Software for White Tags™
  - Twelve Unique Renewable Energy Retail Products – Including Sterling Planet Fixed-Price Hedge™
  - Investment in the Greater Good™ Program
  - Investment in Today's Youth™ Program
  - Investment in a Greener Future™ Program
- Customers in 45 states
- 564 Commercial and Industrial Clients (many the largest purchase in their sector)
- Utility partnership-based enterprise – 44 utilities to date
  - Most utility partnerships in green industry
- Certified Products by Both Major Certification Organizations
  - Center for Resource Solutions (Green-e)
  - Environmental Resources Trust (ERT)
- Endorsed by environmental groups and government agencies



**STERLING  
PLANET**



# Some of our 564 Customers

## Universities (31)

- Harvard 
- Yale 
- Duke 
- Utah 
- Florida State 

## Government (67)

- US Air Force 
- US GSA  U.S. General Services Administration
- US NASA  National Aeronautics and Space Administration
- US Homeland  Security
- US EPA 

## Commercial & Industrial (422)

- Alcoa 
- DuPont  *The miracles of science*
- Johnson and Johnson 
- Pepsi 
- Staples 
- Nike 

## Utilities (44)

- Florida Power & Light 
- Consolidated Edison 
- City of Austin 
- City of Tallahassee  *Your Own Utilities*
- Constellation NewEnergy  A Member of the Constellation Energy Group



# Sterling Planet is Active in All 3 Markets

## REC Markets

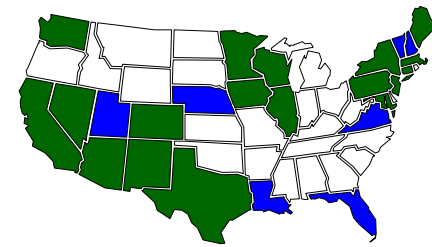
### Voluntary Markets

- Customers voluntarily pay more for renewable energy
- Participating in 22 (41 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



**Legend**  
18 States with Portfolio Standards  
Note: Includes Hawaii  
7 States Considering Portfolio Standards

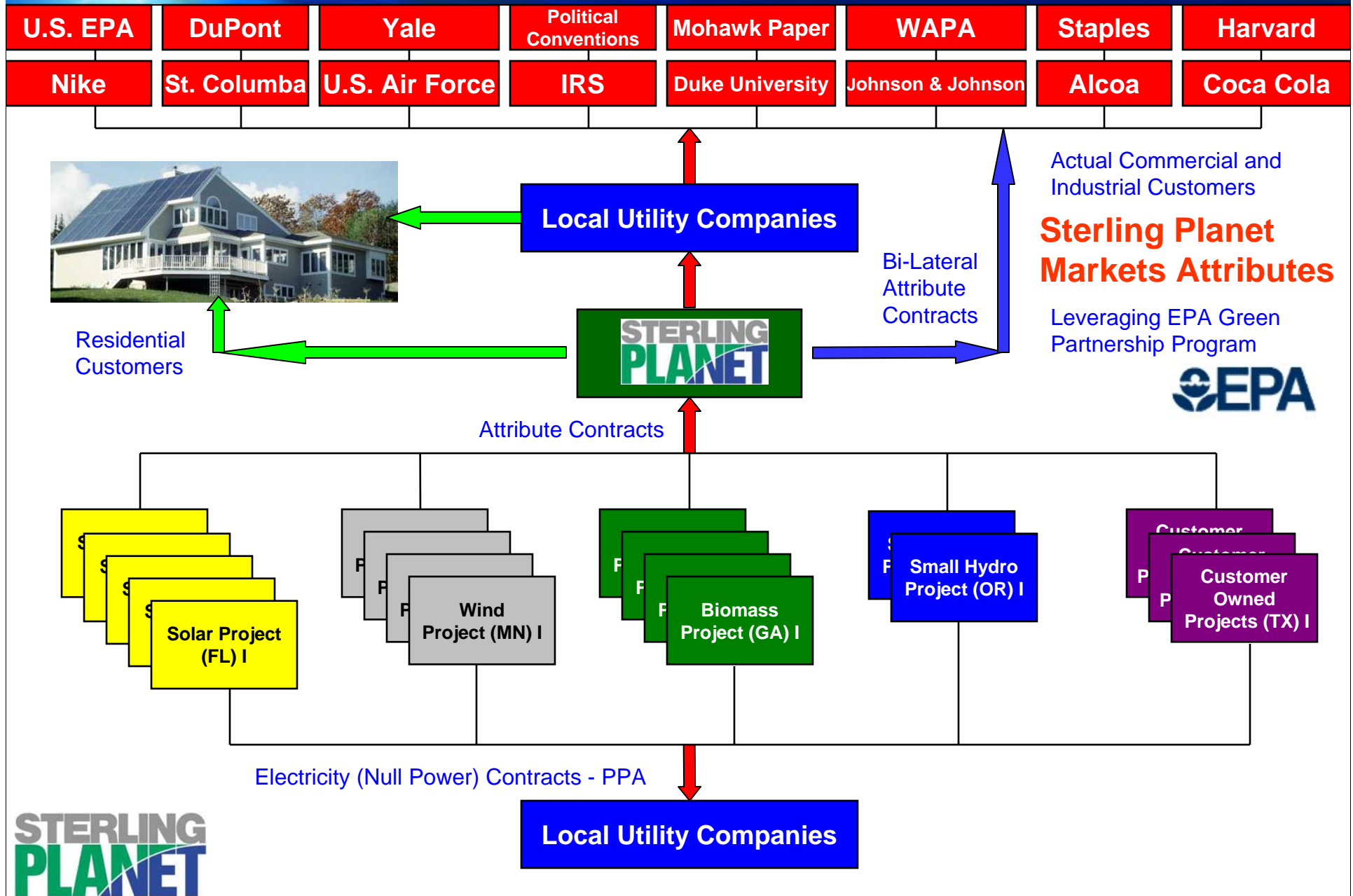
## GHG Emission Markets

### Greenhouse Gas Emission Markets

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



# Connecting The Market



# 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

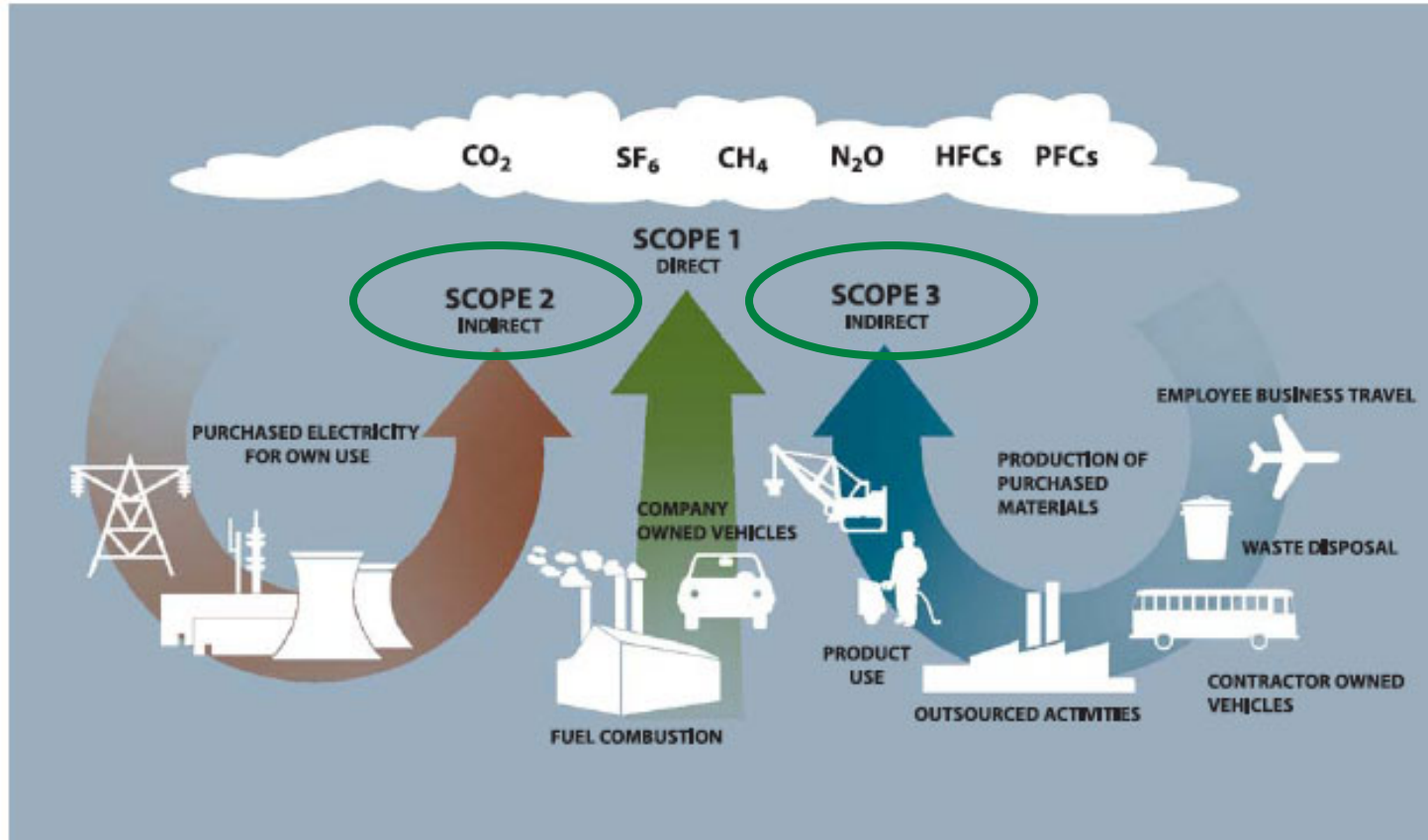
# What are White Tags?

- 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.



# "Voluntary" Market

Many think emissions reductions markets are among the most innovative and cost-effective means society has of reducing greenhouse gas emissions.

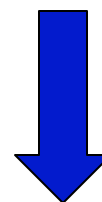
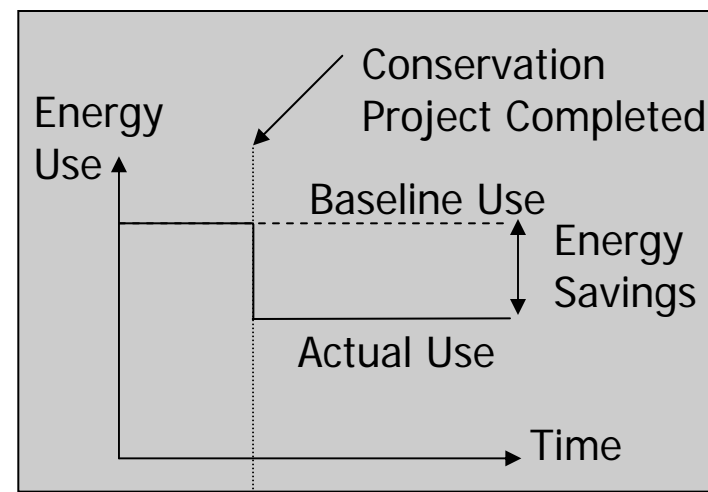


- Bank of America pledges to reduce its total U.S. GHG emissions by 9% from 2004 to 2009.
- Eastman Kodak pledges to reduce total global GHG emissions by 10% from 2002 to 2008.
- Gap pledges to reduce its U.S. GHG emissions by 11% per square foot from 2003 to 2008.
- Marriott pledges to reduce U.S. GHG 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.
- HSBC Bank is carbon neutral – offsetting more than 170,000 metric tons of CO<sub>2</sub> per year.

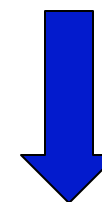
# How are White Tags Created?

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**

# Measurement & Verification

## 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



# 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

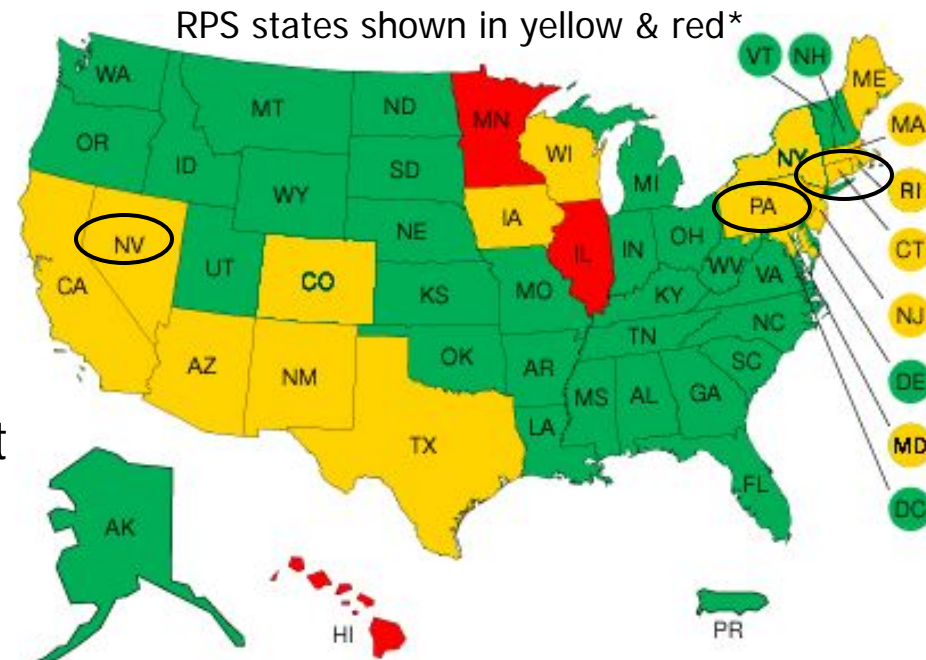


# Where Are White Tags Sold?

- New South Wales (2003), Italy, Great Britain, France

- Mandated in 3 US states

- Connecticut (2007)
- Pennsylvania (2007)
- Nevada (2007)
- 9 Others Evaluating Concept



- Likely in 20 other RPS states
- Mandates require utilities in that state to purchase White Tags - creating minimum demand, certain buyers & a price floor
- May be created in one state and sold in another (global perspective)
- May be sold to corporations & federal gov't (CO<sub>2</sub> reduction - not mandates)

# Italian Scheme

- Became operational in 2005
- Focus on energy intensity (defined as energy used per GDP)
- Reduction of 2% per year until 2015, increases to 2.5% per year until 2030
- Projects in all end-use sectors are eligible
- Tags are valid for up to 5 years for most projects; max 8 years
- Accept “deemed savings” values, estimation using engineering approaches, and monitored savings
- Final savings must be submitted and approved by Regulator before trading
- Banking is allowed in 2005-2009 period; early action projects from 2001-2004 period eligible
- Certificates tracked on spot market via a registry
- 350 requests drawn from 1,100 projects
- 40% of projects from distributors (usually in conjunction with third parties), while the other 60% performed directly by accredited ESCOs
- Approximately 75% of projects used deemed savings; only 4% used monitored savings measurements

# 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 - \$45/MWh
- Tags have a “vintage” and expire the year after created (+ 3 months)
- Certification requires the approval of a M&V plan



# Other US Energy Efficiency Regs/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. Considering peak demand multipliers.

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

**CA** – 12% of peak demand reduction and 10% of electricity use.

**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.





# Final Observations

1. Transparent rules and procedures
2. M&V guidelines that create real, measurable, and verifiable reductions
  - Flexibility in options/methods (e.g., Italian scheme)
3. Independent third-party certification
4. Reporting, Tracking and Accounting through Electronic Tracking System
  - Establish clear property rights
  - Avoid double counting
  - Prove compliance with program requirements
  - Serve to integrate voluntary and compliance markets
5. Consequences/penalties for noncompliance

***Goal: Achieve as much energy savings as possible  
as rapidly and cost-effectively as possible***

# Questions?

## Contact Information:

Kelly Bennett

Director, Northeast Region and National Policy Director

20 Spring Ave

Latham, NY 12110

(518) 269-1636

[kbennett@sterlingplanet.com](mailto:kbennett@sterlingplanet.com)

