



VERMONT ENERGY
INVESTMENT CORPORATION

**NEEP NEW JERSEY MASTER PLAN:
COMPREHENSIVE ENERGY
EFFICIENCY STRATEGY PORTFOLIO –
Residential Sector**

Richard Faesy,
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Introduction

- New Jersey's 2020 goal

“Maximize the State’s energy conservation and energy efficiency to achieve reductions in energy consumption of at least 20% by 2020”

Action Items:

- 1: Redesign and enhance the State's current energy efficiency programs to achieve the desired results while remaining **cost-effective**
- 2: Work with the Legislature to authorize the development of **statewide building codes** to result in new construction being at least 30% more energy efficient than current state code by July 2009
- 3: Work with the Legislature to set **minimum energy efficiency standards** for new appliances and other types of equipment currently not covered by existing standards by 2009
- 4: Increase **education and outreach** in the public and private sectors

Existing Buildings

- The Goal

"Retrofit a total of 350,000 homes and multifamily units by the end of 2013, over 1,000,000 by the end of 2017, and over 1.7 million by the end of 2020, while achieving an average 20% reduction in overall household energy use."



Existing Buildings

- Current Challenges and Program Gaps

- **Low Income** – 75% market have not been served
- **Home Performance** – tiny fraction of the market,
 - insufficient marketing
 - barriers to contractor participation
 - health and safety limitations
 - underserved middle income group
- **Multifamily** – inadequately served with no dedicated service and split incentives
 - disenfranchised sector
- **Prohibitive regulatory structure** – insufficient flexibility and autonomy



Existing Buildings

- Key Strategies

- Massive targeted **marketing campaign**
- **Infrastructure and workforce development** – new hands-on training and certification, addressing participation barriers
- Enhanced **direct installation** and **incentive** structure
- New **financing** opportunities – Energy Mortgages, deposit funds, on-bill financing
- New **multifamily** program – HPwES for low rise and long-term partnership and support for larger developments
 - Sub-metering for energy efficient buildings
- Increased direct install and sliding incentive scale in **low income** program
- **Quality installation** for HVAC and **high performance windows**
- **Community-based initiatives**



Existing Buildings

- Key Policies

- **Regulatory flexibility** with aggressive goals
 - Move programs to utility administration
- **Time of Sale Disclosure** of energy rating
- **Time of Sale Upgrade Requirement** to minimum building efficiency standards by 2012
- **Rate design, smart grid and changing behavior**
- **Financing opportunities**



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New Buildings

- The Goal

“Build a majority of residential new construction to “micro-load homes” in New Jersey by 2020”



New Buildings

- Current Challenges and Program Gaps

- **Market down-turn** trend – 4,500/mth in 2005 to 1,100/mth in 2008
- NJESH services about **a quarter of total RNC market**
- No incentives offered outside **Smart Growth** area (~1,000/yr)
- No incentive to build better than **single ENERGY STAR tier**
- **Limited marketing efforts**
- **Zero energy** is not clearly defined as ultimate goal
- Moving from single program administrator to **market based**
- No **R&D** efforts



New Buildings - Key Strategies

- Extended to include **ALL homes** – all fuels and those built outside the Smart Growth area
- **Marketing campaign** top priority – to builders and home buyers
- **Awards and promotions** of builders achieving micro-load buildings
- **Higher efficiency tiers** – with increasing incentives
- **Builder training**
- **New measures** – quality HVAC design and installation, high performance windows, high efficiency instantaneous DHW, drain water heat recovery, combination space heat/ hot water systems.
- New **R&D effort**



New Buildings

- Key Strategies cont.

- Enhanced **Low Income** incentives and non-profit developer partnerships
- **Multifamily High Rise ENERGY STAR** program
- **Manufactured housing** – move entire product line to ENERGY STAR levels



New Buildings

- Key Policies

- ***Code upgrade and enforcement*** – 30% by 2011, 50% by 2016
- ***Land use regulations*** – encouraging higher building densities and dedicated green spaces
- ***Solar ready*** construction
- ***Energy efficient mortgages*** and ***on-bill financing***
- Engaging ***Real Estate industry*** to post energy ratings on Multiple Lighting Service system
- ***Rate design*** and ***consumer behavior feedback***
- ***Reducing house size***
- ***Regulatory flexibility***

Things in Buildings

- The Goal

“To transform the New Jersey market into one in which targeted energy efficient products are readily available, sought after by consumers, and enjoy large market shares resulting in a 20% reduction in lighting, appliance, and plug-load electricity consumption in NJ by 2020.”



Things in Buildings

- Current Challenges and Program Gaps

- Homes energy consumption has **increased** over time even though efficiency of appliances has improved
- **Old and secondary white goods** relatively untapped source of savings
- Significant growth in **Consumer Electronics** with no current program to address market
- **Early retirement** should be expanded beyond refrigerator / freezer
- Whole building **controls** and **smart switching** should be addressed
- **ENERGY STAR** reaction to transforming markets is too slow



Things in Buildings

- Key Strategies

- ***Social marketing, education, and community-based initiatives***
- ***Green Services workforce*** development - e.g. retail, electricians, swimming pool installers
- ***Lighting*** – new marketing and distribution efforts, specialty bulbs and new product research
- ***“Top Ten” appliances***
- Extended ***appliance early retirement*** program
- ***Consumer electronics*** – support regional/national standards efforts, 80+ desktops, televisions, smart strips
- ***Swimming pools*** – retrofit oversized pumps, upgrade heaters, solar heating
- ***Research, Development, Demonstration and Deployment*** - e.g. heat pump clothes dryers



Things in Buildings

- Key Policies

- ***Minimum efficiency standards*** for some products
- Promotion of ***minimum efficiency specifications***
- Program eligibility standards that ***exceed ENERGY STAR***
- ***Procurement specifications*** – ensuring efficient choices during volume purchase applications



Summary:

- **Marketing, marketing, marketing**
- **Massive workforce development**
- **Enhanced incentives and new financing opportunities**
- **Upgrading and enforcing codes and standards**
- **Community-based initiatives**
- **Consumer behavior**
- **New time of sale rating disclosure and upgrade mechanism**
- **Regulatory flexibility and political support**
- **Utility administration**
- **Research and development**