Program Name: Small Business Services Program
Working Group Contact: Michael McAteer
Administering Entity: National Grid
Targeted Sector: Small Business Customers (<200 kW)

Funding					Energy Savings*		Demand Savings*		
Years	Source	Total Budget	Cumulative Funds Spent*	Current Annual Expenditure*	Cumulative (MWh)	Current Annual (MWh)	Cumulative System Coincident Load Reduction (MW)	Current System Coincident Load Reduction (MW)	Total Resource Cost (TRC)*
1990 -2006	SBC	NA	$108 million	$6.8 million	207,684 MWh	13,574 MWh	65 MW	3.2 MW	4.51

**** Expenditures, savings, and TRC values for National Grid's <u>Massachusetts</u> Small Business Services Program***

Program Description: The Small Business Services Program ("Program") provides direct installation of energy efficient lighting and non-lighting retrofit measures to business customers with average demand less than 200 kW.

The targeted end uses primarily include lighting and refrigeration. Some of the available technologies generally offered through the program include: energy efficient fluorescent ballasts, lamps, and fixtures; hard-wired and screw-in compact fluorescent systems; high intensity discharge systems; occupancy sensors; and fan and door heater control devices for walk-in coolers as well as night setbacks for novelty coolers, automatic door closers, no-loss condensate drains, and ECM motors. In the last few years, National Grid has been focusing on comprehensive solutions including EMS systems, VSDs, and other non-prescriptive measures requiring more analysis.

Financial incentives cover 80% of the total installed costs, including labor and equipment. In 2008, National Grid's contribution is decreasing to 70% with the customer copay increasing to 30%.

Relationship to Staff Preliminary Proposal: Not Fully Detailed

Current status: The Program has been in existence for twenty years and currently serves customers with an average demand less than 200 kW. In general, eligible customers range from convenience stores and dry cleaners to small office buildings and elementary/middle schools. In 2006, approximately 1000 energy efficiency projects were completed in Massachusetts.

National Grid pays 80% of the total project cost with the customer paying the remaining 20% with <u>on-bill financing</u>. Customers are able to select payment terms of either a lump sum payment (in which the customer copay is discounted by 15%) or 12- or 24-months financing at zero interest.

Lighting projects typically consist of relamp/reballast T12 fluorescent fixtures with T8s, replacing incandescent lamps with compact fluorescent lamps, installing LEDs in exit signs, lighting controls, and T5 fluorescent fixtures. LEDs are just starting to "hit the market" particularly to replace fluorescent lamps in refrigerated display cases and incandescent lamps in recessed cans.

Historically, the Program spends its entire budget year after year.

Barriers, challenges, gaps:

These customers tend to have loads dominated by lighting as a percentage of total load and a historical reluctance or inability to fund efficiency improvements. While their smaller size tends to exclude them as potential beneficiaries of

services from other energy service providers, their lighting dominance makes them excellent candidates for a direct installation approach. Additionally, owners are reluctant to finance these energy efficiency projects due to the transaction costs associated with executing a financing agreement, especially since the projects are smaller in size.

In addition, these business owners are often times focused on the "core business" despite an understanding that investments in energy efficiency will benefit the business' bottom line and have environmental benefits. An energy efficiency program providing a turnkey service from audit to installation to pick up of hazardous waste enables an owner to maintain focus on the business.

These customers are often times reluctant to enter in to additional financing arrangements to fund these energy efficiency projects. Rather, using on-bill financing enables the participant to fund the project on the electric bill.

Ramp-up potential, limitations, where help is needed to fulfill potential:

- Substantial ramp up potential particularly focusing initially on lighting and refrigeration.

- Limitations/Resources Need to Fulfill Potential:

  Infrastructure

  - Labor Vendors: These business partners manage the implementation and are responsible for marketing the program, auditing customers' facilities, providing proposals, warehousing equipment, installing equipment using in-house electricians or sub-contractors, data entry, packaging of recyclable materials, and customer relationships.

  - Equipment Vendors: These business partners provide the equipment and materials to be installed in customers' facilities. They are responsible for shipping equipment to the labor vendors, and managing the warranty process including the replacement of failed equipment.

  Workflow/Tracking System

  - National Grid currently uses a web based system that allows the labor vendors to maintain their own projects including data entry, generate project proposals and work orders, and invoice National Grid for completed work.

Co-benefits:

- Annual environmental benefits: Avoided approximately 7500 tons of greenhouse gases (2006)

Other issues/considerations: Program recognized by ACEEE as an exemplary program.

Program Name: Lost Opportunity - Design2000plus Program
Working Group Contact: Michael McAteer
Administering Entity: National Grid
Targeted Sector: Business Customers

Funding					Energy Savings*		Demand Savings*		
Years	Source	Total Budget	Cumulative Funds Spent*	Current Annual Expenditure*	Cumulative (MWh)	Current Annual (MWh)	Cumulative System Coincident Load Reduction (MW)	Current System Coincident Load Reduction (MW)	Total Resource Cost (TRC)*
1996	SBC	NA	$191.1 million	$9.027 million	492,796 MWh	16,494 MWh	87 MW	3.3 MW	4.12

**** Expenditures, savings, and TRC values for National Grid's <u>Massachusetts</u> Programs***

Program Description: The Company's new construction program provides financial incentives, technical assistance, and commissioning services for new construction and renovation activity. The program also promotes the installation of high efficient equipment in existing facilities during remodeling and at the time of planned equipment replacement and failure.

Targeted end uses include but are not limited to lighting, motors, heating, ventilating and air conditioning systems (HVAC), compressed air, and industrial processes. Several of the more frequently recommended technologies include efficient lamp technologies, direct indirect lighting fixtures, lighting controls, efficient motor drive systems and efficient chillers and controls.

Relationship to Staff Preliminary Proposal: Fast- Track Discussion

Current status: 412 customers participated in 2006.

In general, financial incentives are designed to cover 60% to 75% of the incremental cost difference between standard and premium efficiency equipment or systems to buy the cost of the equipment to the customer down to a one to one and a half year payback, whichever is less to the Company.

For Comprehensive Design Approach and Comprehensive Chiller projects, incentives cover up to 90% of the incremental cost or buy the cost of the equipment and systems down to a one-year payback, whichever is less.

The Company markets the program through extensive personal communication by the Company's Key Account Managers and Energy Efficiency Consultants with customers, vendors, contractors, and design professionals and via seminars, training sessions, and other direct marketing approaches. In addition the sources for new building leads can be derived from contacts with municipal agencies and building planning boards, trade publicans (New England Real Estate Journal) and the news media and special new construction monitoring services such as REED Construction Data and other professional commercial building organizations.

Barriers, challenges, gaps:

- **Economic**: Energy-efficient technologies and design features often have higher initial (first) costs in comparison with standard technology and design options, compounded by the fact that developers have no financial stake in future energy operating costs of the building. Architecture and Engineering ("A&E") fee structures discourage time spent examining innovative design options. Fees can be fixed

as a percentage of overall construction costs, resulting in "cookie cutter" designs that minimize A&E design time and client (developer) costs.

- **Flaws in the Market Structure**: A number of flaws in the market structure discourage energy efficient design and construction:
  a. Those ultimately responsible for paying energy operating costs — future owners or occupants (tenants) — are disengaged from, and often have little influence over, the process and decisions involved in constructing buildings.
  b. No single party on the typical building design team has responsibility for maintaining the integrity of the entire interactive operating system of the building throughout the design and build process (including commissioning).
  c. Accepted, routine channels for introducing and accepting high performance energy related equipment and design innovations into the building development process do not exist.
  d. Tight construction schedules, driven by the costs of financing and other competitive pressures, discourage examination of efficient design options.
  e. To some extent standard design practices use "rule-of-thumb" approximations that significantly oversize equipment as insurance against future problems.
  f. Some energy efficient technologies are not readily available from manufacturers and suppliers, leading to time delays or design specification alterations.
  g. Larger developers, national chains, and other entities who construct facilities in multiple utility service territories are confronted with an array of differing utility programs; each with its own participation requirements, forms and procedures, measure criteria, incentive levels, etc. Hence, they find it difficult to effectively participate in the many programs available.

- **Lack of Awareness:** Clients (developers) expect that designing for energy efficiency is the industry norm, and design professionals are reluctant to reveal otherwise. Many members of the design community lack knowledge of high performance technologies or advance design practices. There is little recognition on the part of building owners, managers, and maintenance personnel of the need for routine procedures to inspect, maintain, and recalibrate building systems and equipment.

- **Lack of Experience:** Many design professionals have little direct experience with high performance design practices, and may lack the skills necessary to thoroughly examine alternatives. In some cases performance data is lacking on new technologies such as LEDs and design techniques that may impact long-term performance. Insufficient training and incentives are directed to those who actually operate and maintain building operating systems. Maintenance personnel often focus only on tenant problems or complaints, or on malfunctioning equipment, and often are not given the time or tools to maintain the overall efficiency of the building systems.

Ramp-up potential, limitations, where help is needed to fulfill potential:

- Substantial ramp up potential
- While implemented since 1998, the Company continues to refine the program with continued enhancements of services, new measure offerings, and design solutions for customers, developers, and design professionals. We routinely consult with operators of similar programs around the country to assure that national "best practices" are incorporated. Examples include:
  - Continued advancement of the New Buildings Institute's "Advanced Buildings Benchmark" for high performance buildings

- Adoption of Benchmarking and Retro-Commissioning Services to support customers in their pursuit to design, construct and operate better performing buildings in addition to providing USGBC's LEED support.

Co-benefits:

- Annual environmental benefits: Avoided approximately 9,088 tons of greenhouse gases (2006)

Other issues/considerations:

- Program recognized by ACEEE in 2007 as an exemplary program.

Program Name: Retrofit - Energy Initiative Program
Working Group Contact: Michael McAteer
Administering Entity: National Grid
Targeted Sector: Business Customers

Funding					Energy Savings*		Demand Savings*		
Years	Source	Total Budget	Cumulative Funds Spent*	Current Annual Expenditure*	Cumulative (MWh)	Current Annual (MWh)	Cumulative System Coincident Load Reduction (MW)	Current System Coincident Load Reduction (MW)	Total Resource Cost (TRC)*
1996	SBC	NA	$308.110 million	$27.075 million	855,493 MWh	65,640 MWh	173 MW	9.6 MW	4.09

**** Expenditures, savings, and TRC values for National Grid's <u>Massachusetts</u> Programs***

Program Description: This retrofit program focuses on energy efficiency opportunities associated with existing mechanical and electrical systems in commercial, industrial, governmental, and institutional buildings. Energy Initiative offers financial incentives and technical assistance to help customers analyze their operations in order to assess outdated and/or energy inefficient systems and recommend opportunities for replacement equipment and systems. Several paths are included to adapt to customers needs including a prescriptive menu driven selection of better pe4eforming M&E equipment and Custom Path to achieve more comprehensiveness in customers buildings.

Targeted end uses include but are not limited to lighting, motors, compressed air, variable speed drives, efficient lighting fixtures, lighting controls, efficient motor drive systems and energy management systems.

Relationship to Staff Preliminary Proposal: Fast-Track Discussion

Current status: 468 customers participated in 2006.

In general, financial incentives are designed to cover approximately 45% of the total installed costs, including labor and equipment, or to buy the cost of the equipment down to the equivalent of a two-year payback, whichever is less to the Company.

The Company will continue to market the program through extensive personal communication by the Company's Key Account Managers and Energy Efficiency Consultants with customers, vendors, and contractors and via seminars, training sessions, and other direct marketing approaches.

The Company will continue to pursue opportunities to co-market the program through trade, industry, and public interest or civic groups, which represent this target market and have extensive outreach capabilities.

Barriers, challenges, gaps:

- Split incentives in commercial real estate undermine the economic driver for energy efficiency.
- Competing priorities for time and funding
- Lack of information
- Short payback requirements inconsistent with the stream of benefits realized from the measure life of the project.

Ramp-up potential, limitations, where help is needed to fulfill potential:

- Substantial ramp up potential especially in lighting end use

- Through Energy Initiative, the Company also actively supports regional and national market transformation initiatives such as Building Operator Certification, Compressed Air Challenge and an initiative that utilizes elements of the US DOE's ENERGY STAR® Benchmarking program.

Co-benefits:

- Annual environmental benefits: Avoided approximately 36,168 tons of greenhouse gases (2006)

Other issues/considerations:

- Program recognized by ACEEE in 2007 as an exemplary program.