BEFORE THE STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

In the matter of:	)
DE 15-137	)
Electric and Natural Gas Utilities	)
Energy Efficiency Resource Standard	)

Direct Prefiled Testimony

Of

James Brennan
Finance Director

On behalf of
The New Hampshire Office of the Consumer Advocate

Dated: March 1, 2016

Q. Please state your name, business address and current position.

A. My name is Jim Brennan. I am the Finance Director at the New Hampshire Office of the Consumer Advocate (OCA). My business address is 21 South Fruit Street, Suite 18, Concord, New Hampshire.

Q. Please summarize your educational background and work experience.

A. I graduated in 1978 from Saint Bonaventure with a Bachelor of Science degree in Finance. In 1980, I graduated from Syracuse University with an MBA. In 1981, I completed a nine month JP Morgan Chase (formerly Chemical Bank) MBA Management Training Program. I have completed courses in business, finance, software development, electric utility regulation, regulatory finance and accounting, and Smart Grid.

In my present position at the OCA I perform economic and financial analysis of utility filings across all industries, draft discovery and testimony, and provide guidance on financial policy and regulatory issues.

My business career began in banking as First Vice President at Chemical Bank, 1980-1989, with responsibilities as analyst, credit department manager, account relationships, and course designer and instructor of Risk Assessment training. I have experience managing business and technology operations. At TD Waterhouse Securities, 1995-2001, I ran the third largest

brokerage statement operation on Wall Street during a period of 400% growth with responsibilities for budget, operations, Information Technology data processing and New York Stock Exchange Compliance. Waterhouse's statement was awarded #1 ranking by Smart Money during my assignment. I have experience in IT project management and software design. Experience includes: implementation of paperless technology in Waterhouse Security National Investor Clearing Corporation stock clearing operation (2000); managing launch of an eServices web site providing on-line secure access of brokerage statements to 2.5 million Waterhouse clients (2001); designing Microsoft.NET and SQL Server based software systems for Mathematica Policy Research 2003-2006; directing design testing and launch of cloud based Microsoft Customer Relationship Management (CRM) applications for Southern New Hampshire University (2012-2013). As an Adjunct Instructor I have taught courses in Corporate Finance, Microsoft applications and Microsoft C# programming language.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is recommend all New Hampshire residential rate payers participate in the advanced state-of-the-art customer engagement technology platform being developed by Eversource and scheduled for release near the time of this testimony. In my testimony I refer to this technology as Customer Relationship Management (CRM).

Q. Please summarize the basis for recommending a statewide CRM approach for NH utilities.

A. The utility is the primary conduit for advising and marketing and bringing energy efficiency (EE) to New Hampshire residents. The level of economic benefits of EE in New Hampshire depends on the effectiveness of the utilities marketing and administering customer funded EE programs. Broad adoption of EE across New Hampshire spreads the administrative costs of EE such as database management, marketing, EM&V over a larger base, reducing bill impact and saving money. Broad adoption of EE (including demand response) brings long term economic benefits and customer savings as fewer power generation plants get constructed and lower levels of fixed costs including transmission and distribution are paid by customers. Therefore broad adoption and scale are as important as the efficiency measures themselves.

However the tools, IT platforms, customer relationship techniques, and best practices of marketing traditional utility services are vastly different from those required to shift entrenched customer energy habits and spending associated with EE and demand response. Marketing EE services becomes an evolution from the traditional business model associated with a poles and wires utility. In some states EE marketing and advising is outsourced to 3rd

parties.[1] In order to market and EE the utility must develop a detailed understanding of customer usage. Customer usage and EE data is made available electronically. Sales-driven organizations use state-of-the-art data analytics and communication techniques to grow their business. Utilities use CRM platforms to: better educate customers; target messages to individual market segments; institute behavioral programs that change habits and promote savings; offer customer on-line self-service options as an alternative to customer reliance on call center; allow customers to update their profiles with data that in turn feeds into predictive applications such as energy disaggregation algorithms; provide for data visualization; facilitate mobile device integration; and offer numerous integration opportunities likely to arise down the road. The inevitable outcome is broader participation in EE and energy savings for all customers.

Four factors support my recommendation for state wide participation in Eversource's system. They are:

1. CRM is an essential tool for broad EE market penetration;
2. Commitment to uniformity of CORE programs regardless of franchise territories;
3. Economics of a single technology platform;
4. Planning for distributed generation and smart grid data needs.

[1] https://www.veic.org/

Q. Please describe the Eversource platform that you refer to as a CRM platform.

A. Based on attending a one hour live demonstration of Eversource's customer engagement platform on February 18, 2016, I have the following observations. The system architecture is Software as a Service (SAAS) and resides off-site in a third party vendor cloud environment. The pre-built vendor system is sold as a specialized instance of the platform that is then customized to the specific needs of customers, such as Eversource. The system accepts data, stores data, analyzes data and communicates/shares data with other systems. Its data warehouse is defined by more than 150 unique data elements (for example, name field and address field) creating a robust and holistic view of the energy used by the customer's premises. Into this container large quantities of row data are loaded periodically from data sources (for example, 3 years of customer meter usage data) and third party vendors and government data (for example, census and tax data).

A multitude of complex software applications and compiled algorithms with baked-in business logic and rules are run against the customer dataset mentioned above. This is referred to as data analytics. Data analytics provide marketing insight and usage insight superior to a traditional utility Customer Information System CIS (although the utility's CIS is a key data source to the CRM data warehouse). Data analytics give Eversource the capability to perform powerful market and user analysis. Customer market

segmentation is performed (for example, by house size and income level). Energy use disaggregation is calculated (for example, estimating a customer's energy consumption by category such as, electronics, lighting and refrigeration). Historical EE activity of the customer is tracked. Customer specific EE recommendations are identified and links to rebate forms are available to help the fulfillment process (for example, matching a homeowner to a heat pump incentive program).

The system is web-based and can integrate (deliver and present data) to Eversource call center computers and Eversource customers devices. Customers can view results of the analytics on their computer screens and mobile devices. They can be added to a marketing campaign. Online self-service customer data entry forms encourage customers to provide additional information on their profile. This builds deep customer knowledge which in turn enables Eversource to make better recommendation to customers. For example, a customer may indicate changes in fuel type, participation in an EE program, or absence of LED bulbs in all rooms.

Q. How was Eversource's platform funded?

A. This Eversource corporate initiative includes its affiliates in Connecticut, Massachusetts and now New Hampshire. The system was partially funded by SBC funds through a New Hampshire CORE program. For year 2015, $591,540

was set aside for the customer engagement platform reference DE 14-216, September 12, 2014 CORE Utilities filing[2].

Q. Please discuss commitment of uniformity of CORE programs across franchise territories.

A. All rate-payers contribute to energy efficiency through an identical charge on their electric bills;- therefore everyone should be able to participate equally in benefits. It is unfair for a significant base of residential customers living outside PSNH territory to be excluded from benefits of CRM platform for which they have paid significant development costs.

Q. Please discuss the advantages of a statewide single CRM system.

A. Notwithstanding legal and technical hurdles that are beyond the scope of this testimony, it is likely that building a single statewide CRM platform for New Hampshire will be significantly less risky, less costly and more functional as compared to each utility designing and building its separate systems. There are major advantages of pooling costly and scarce resources:

1. Utility IT staff - DBA's , System Engineers, and Project Managers;
2. Eversource System architecture, design and requirements, project management lessons learned – data warehouse, integration methods, and algorithms components already designed tested and in production;
3. 3rd Party resources - IT infrastructure, cloud resources, 3rd party data, consulting, and project management;
4. System Maintenance: CRM system require full-time maintenance and dedicated staff for trouble shooting issues, bug fix, data synchronization,

[2] 9/12/2014 filing PSNH filing of CORE Utilities 2015-2016 Statewide Energy Efficiency Plan

security and access, system integration, versioning updates, and change management.

Risk Mitigation: Technology projects such as building or purchasing a CRM system are complex, expensive, and carry significant risk of failure[3]. According to IAG Consulting[4] 68 percent of all IT projects fail or underperform. According to a PM Solutions[5] survey of Chief Information Officers[6] 37 percent of IT projects fail due to poor requirements analysis, lack of resources (including technical staff), poor planning, and poor management. Leveraging pooled resources listed above, including Eversource code, will significantly reduce the time frame and the risk NH utilities face moving toward a CRM system.

Consistent EE policy: A statewide central system implements approved state wide standards, formulas, and rules.

Uniform Customer Experience: A statewide approach will ensure a powerful consistency for customers seeking advice and viewing their individual EE usages and savings. This has been a key objective since the advent of the CORE programs more than a decade ago.

Utility Call Center CRM System: Utility call center and systems receive consistent data from the system for internal needs.

[3] http://www.iag.biz/images/resources/
[4] http://www.iag.biz/images/resources/iag%20business%20analysis%20benchmark%20-%20full%20report.pdf
[5] http://www.pmsolutions.com/
[6] http://www.zdnet.com/article/cio-analysis-why-37-percent-of-projects-fail/

Q. Please discuss data needs for distributed generation and smart grid[7].

A. The need and justification for advanced CRM capabilities are likely to increase, not decline going forward. As an example, complex data usage and analytics will be needed to support cost savings programs such as:

1. Net metering;
2. Time variant pricing,
3. AMI systems and behind meter energy systems
4. AMI enabled demand response[8]
5. AMI enabled EM&V,

If utilities are entrusted to run energy efficiency in NH it is essential they have powerful, well supported CRM and data analytics platforms to assist customers implementing EE in their homes.

Q. Does this conclude your testimony?

A. Yes.

[7] http://www.whatissmartgrid.org/

[8] The arrival of AMI enables the utility to target customers with usage patterns best suited to lowering peak usage. In addition AMI will allow the utility to verify if an individual customer has responded to that event.