

## OCA Use Case # 01a: Energy Efficiency Statewide Dataset

### Section: Name

OCA Use Case 01a - Energy Efficiency Statewide Dataset

### Section: Author/ last update

Jim Brennan, NH OCA, April 14, 2020

### Section: Description

An energy efficiency statewide dataset as part of the SB284 platform would increase the effectiveness of the program as well as the ability of the PUC to analyze the impact. NHSaves is a statewide energy efficiency program that is currently administered by the regulated gas and electric utilities (plus the New Hampshire Electric Coop). Upgrading data sharing and data tracking systems is one of the top ten priorities of the program administrators.<sup>1</sup> They have specifically identified “data sharing and referral systems to streamline the transfer of data between the NH Utilities, CAAs, NH OSI, and other contractors” as part of the new initiative.<sup>2</sup> The program administrators are also “increasingly exploring new innovative ways to utilize data-driven and behavioral-based strategies to engage customers in energy efficiency.”<sup>3</sup> Using the SB284 platform as the repository for these types of energy efficiency data is important because it centralizes and standardizes the data. In addition, the data becomes available for potential future program administrators and for competitive energy suppliers – two entities notably absent from the utility identified list above for streamlining data.

One of the evaluation, measurement and verification (EM&V) reports conducted by Opinion Dynamics on the Home Energy Assistance Program (HEA) identified a number of areas where data tracking is lacking or severely challenged<sup>4</sup>: [As footnoted, this is a draft report with lots of issues still to be followed up on. We are adding some comments and/or clarifying questions to the following as they are part of this use case..]

1. Multi-family participants where the building is master metered. Having a statewide centralized and standardized data would allow property managers to update the database or implement an automated interface that updates the data regularly. [What types of updates would a property manager make? Also, we need to look into this. Utilities currently do not provide property managers (or owners) with access to customer data without customer approval.]
- 1.2. Program serving participants across multiple utilities. There was difficulty matching gas customers of one company with electric customers of another company. The SB284 platform would centralize and standardize on the location – so that the location is able to collect information from numerous sources, including regulated utilities, participating competitive energy suppliers, landlords, contractors, Community Action Agencies (CAA’s). [Would implementing a system to continually match customer data from multiple disparate systems be feature of a statewide energy data platform? Would an automated system solve all data matching or would this still require manual intervention for non-matches? An example of non-matches during the Opinion Dynamics is a gas multi-family with a central gas heating system and 1 “gas house meter”, with 30 apartments with separate electric meters and 1 “electric house meter”. How would you envision the energy use data platform matching the gas meter usage to residential electric meter usage?]
- 2.3. Unreliable data regarding delivered fuel due to an inability to collect billing information. With a statewide platform energy efficiency customers could opt in to have the delivery and billing information sent to the database so they could get the analysis to see if they are seeing the savings they anticipated. [What delivery and billing fields would they provide? To do

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analysis of savings, the Weatherization Programs save more fossil fuels (i.e., wood, kerosene, propane, etc.). How would the energy data platform be able to analyze fossil savings against actual fossil usage? Would comparison calculations be a feature of this energy use platform?

3.4. In conducting non-energy impact (NEI) analysis, the consultant found it difficult to collect information relative to debt write-offs, reduction in safety calls, and changes in arrearages. A statewide system geared to the location would enable a correlation between program participants and changes in these types of NEI's. Including this information within the platform seems to present privacy concerns. Is it appropriate to offer debt/arrearage info about specific customers to 3<sup>rd</sup> parties?

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<sup>1</sup> DRAFT 2021-2023 NEW HAMPSHIRE STATEWIDE ENERGY EFFICIENCY PLAN, page 13, Bates 21.

<sup>2</sup> Id. at page 95, Bates 103.

<sup>3</sup> Id. at page 113, Bates 121.

<sup>4</sup> Opinion Dynamics, Home Energy Assistance Program Evaluation Report.

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Perhaps most important is the ability to collect and centralize the data collected at each state in the implementation process for use in future projects, for evaluation, for customer feedback, for reporting etc. The Opinion Dynamics report outlines the data collected at each stage in the HEA implementation process. This is outlined below in the step-by-step section – the table is direct from page 24 of the report.

#### Section: Step-by-Step – what happens: Table from Opinion Dynamics/HEA Report

Implementation Stage	Description	Data Collected
Qualification and Enrollment	<ul style="list-style-type: none"> <li>▪ Resident contacts the CAA requesting fuel assistance or other services, or PAs refer customers that may be interested in CAA energy programming.</li> <li>▪ Resident submits fuel assistance application and indicates that they are interested in weatherization services.</li> <li>▪ CAAs create and prioritize list of interested residents and schedule home energy assessments.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fuel type</li> <li>▪ Demographics</li> <li>▪ Household characteristics</li> <li>▪ Income documentation</li> <li>▪ Energy usage</li> <li>▪ Fuel history</li> </ul>
Home Energy Assessment	<ul style="list-style-type: none"> <li>▪ Auditor verifies application information, performs diagnostics, documents pre-conditions of insulation, and identifies all energy-savings and health and safety upgrade opportunities.</li> <li>▪ Auditor updates building simulation model with baseline and retrofit information to evaluate which upgrades are cost-effective.</li> <li>▪ Auditor uploads final recommended scope of work to PAs for review and approval.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Baseline building conditions (e.g., blower door test, combustion safety test, etc.)</li> <li>▪ Thermal scan</li> <li>▪ Additional household characteristics required for building simulation modeling</li> </ul>
Measure Installation and QA/QC	<ul style="list-style-type: none"> <li>▪ CAAs coordinate follow-up appointments and measure installation either with in-house implementation teams or subcontractors.</li> <li>▪ CAAs work with PAs and subcontractors to perform on-site QA/QC inspections in accordance with WAP guidelines as work is completed or shortly after.</li> <li>▪ When the work is complete, implementation crews upload a final scope of work to PAs via OTTER.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Retrofit building conditions (e.g., post-retrofit blower door test, combustion safety test, etc.)</li> <li>▪ Post-installation QA/QC inspection notes</li> </ul>

[Via table above, what data (or files) are envisioned to be included in the energy use data platform?]

#### Section: Step-by-Step – what happens: SB284 EE Dataset supports the energy efficiency process<sup>5</sup>

A significant portion of the EE data outlined in the HEA implementation process above should be collected and organized in the SB284 data platform. As an enabling platform, SB284 data collection and sharing steps (see Sequence diagram 01a below) become integrated and interwoven with the 3

<sup>5</sup> Injection of a major new technology, such as a data platform, usually is accompanied by significant process reengineering in order to be fully effective. Due to the fact that HEA steps already exist while the SB284 platform is in analysis proposal phase, the steps outlined and illustrated in sequence diagram 01a are conceptual and for discussion purposes only. The OCA envisions technical working groups will be established to analyze and agree on exactly how SB284 data integrates to the existing HEA process (and other legacy processes). The working groups would analyze how the multitude of stakeholders, processes, and associated stakeholder external systems (customers, utilities, agencies, CCA, 3<sup>rd</sup> Party platforms etc.), will interact with the SB284 as the platform evolves in phases (and prioritized use cases) over time.

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stages of statewide EE activities: enrollments, assessment, and implementation as described above by Opinion Dynamics.

Steps A and B: SB284 Statewide Data Collection: Centralized data collection and indexing of utility and non-utility data, described in other OCA use cases (Use Case CORE01 to Use Case CORE06 , Use Case 30 NH Saves Integration...) is indexed by location for all EE measures (subsidized and non-subsidized) deployed in NH.

Steps 1 to 5 Generate SB284 EE Datasets: SB284 EE Datasets can be generated from SB284 by reusing the robust granular data collected in Steps A and B. The SB284 EE datasets contain a significant portion of the granular data used by experts in performing marketing, segmentation, and EE data analytics across all customers and all premises in NH.

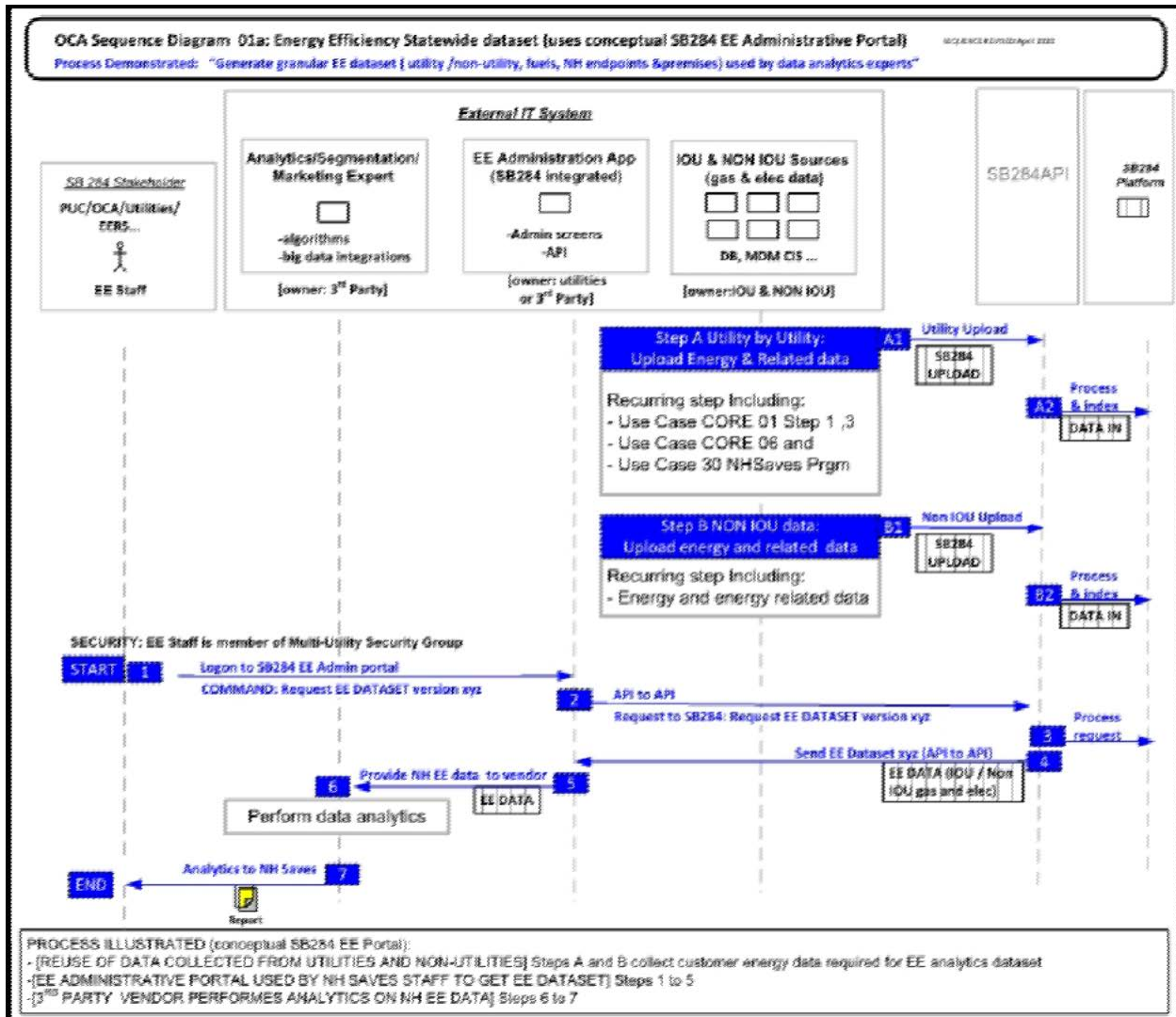
Step 6 Advanced Data Analytics by Experts: Data analytic experts (and IT platforms) combine granular data provided by SB284 datasets (from Steps 1-5) with other data, including big data integrations with other datasets, to perform data analytics. [Is this envisioned to be a feature that is part of the energy use data platform? What would this big data analytics be used for?]

Step 7 Data Driven Management of NH EE Program: Robust data analytics performed in Step 6 inform the strategy and management of NH's energy efficient programs.

Sequence Diagram 01a: The Sequence diagram illustrates the order of activity (top to bottom) that occur between 4 categories of actors (across the top). The 4 categories of actors are:

1. Stakeholders (customers, 3<sup>rd</sup> parties, utilities...),
2. Assets (premises, meters, rooftop PV...),
3. External IT Systems (an existing utility CIS, a future CCA Platform...),
4. SB284 API (proposed) and SB 284 platform (proposed).

### OCA Use Case # 01a: Energy Efficiency Statewide Dataset



**OCA Use Case # 01a: Energy Efficiency Statewide Dataset****Section: Data Fields required**

Refer to Opinion Dynamics Report

Refer to DRAFT 2021-2023 NEW HAMPSHIRE STATEWIDE ENERGY EFFICIENCY PLAN

Refer to OCA master use case “SB284 as a Platform”

**Section: Estimated Cost**

Refer to OCA master use case “SB284 as a Platform”

**Section: Estimated benefits**

Refer to OCA master use case “SB284 as a Platform”

**Section: Required Policy Changes**

Refer to OCA master use case “SB284 as a Platform”

**Section: Project Risks**

Refer to OCA master use case “SB284 as a Platform”

**Section: Cybersecurity Issues**

Refer to OCA master use case “SB284 as a Platform”

**Sections: Assumptions /Preconditions**

1. SB284 Platform is designed based on a logical data model.
2. SB284 Platform follows a system architecture design approach
3. SB284 Platform implements a service oriented architecture with Application Programming Interface (API)
4. Data Privacy Framework (DPF), and Data Access Framework (DAF) address overarching issues of data privacy and cyber security, are established prior and/or in parallel with development of SB284 Platform.
5. OCA CORE Use Cases
6. OCA Use Case 30 NH Saves Integration

**OCA Use Case #30: Integration of SB284 and NH Saves – EE Program Information**

**Section: Name**

OCA Use Case 30 – Integration of SB284 and NH Saves – EE Program Information

**Section: Author/ last update**

Jim Brennan, NH OCA, April 14, 2020

**Section: Description**

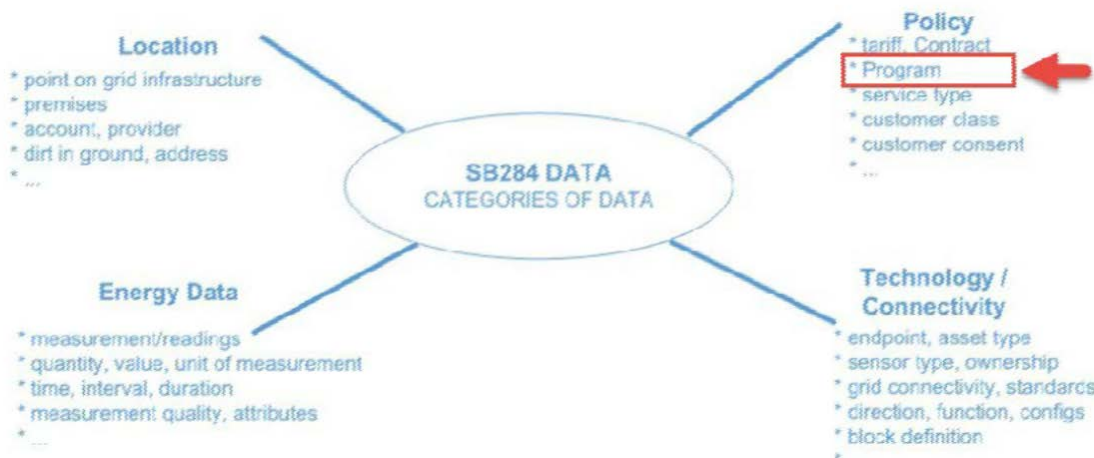
A key benefit of the SB284 centralized data platform is the ability to provide higher levels of visibility into energy usage at a holistic level. By relating energy data (for example KWH) to other energy related data (for example energy efficiency measures deployed at same location), deeper analytics and insights are possible. Programs, are an important type of energy related data. Programs include any type of business / research / regulatory activity that can be tied directly to a specific meter or premise.

Examples of programs are:

- NH Saves Programs,
- Non-subsidized EE Programs,
- WAP Programs
- 3<sup>rd</sup> Party Demand Response Programs,
- Targeted EE programs,
- Demand Studies (performed by utilities or 3<sup>rd</sup> parties),
- Low Incomes Energy Programs,
- Clean Energy Fund Programs, etc.
- ...

Shown below in Figure 2 titled High level Data Model DE 16-384, Program data is included in the data model discussed in OCA’s Scoping Comments filed in this docket on 3/11/2020.

Figure 2: High level Data Model DE 16-384



### OCA Use Case #30: Integration of SB284 and NH Saves – EE Program Information

Program data, shown in Figure 2 above, is uploaded into SB284 as part of the integration process discussed on page 4 footnote 1 of OCA's Scoping Comments

*The integration process may include connecting to and exchanging data with existing utility (or non-utility) systems for operational purposes such as updating data in the SB284 data platform. Depending on implementation decisions, on a utility-by-utility basis, this integration process may include the installation of agreed software and or hardware component(s) to automate and streamline processes.*

The purpose of this use case is to define a conceptual integration strategy between SB284 and NH Saves web application. The goal is to maintaining an accurate master list of all programs associated with NH

meters and premises within SB284 platform. The NH Saves programs are an essential subgroup of programs maintained in SB284. [How would program “descriptions” on the NH Saves website be integrated into an energy use data platform? What fields are envisioned to be stored?]

#### Section: Step-by-Step – what happens

NOTE: This conceptual use case assumes use of a helper portal, “EE Administration App”. The EE Administration portal is integrated to SB284 and is allowed limited access to view and change a specific category of data in SB284. Specifically, in this use case, the portal allows staff to edit and manage the master list of NH Saves programs and associated meta data (utilities, locations, types etc.) held in SB284.

Steps 1a, 1b, 1c: Qualified trained staff manage (view, add, edit, delete) and approve items in the master lists of NH Saves program data contained in SB284.

Step 2: The approved list of program data maintained in SB284 is updated to the NH Saves web application database.

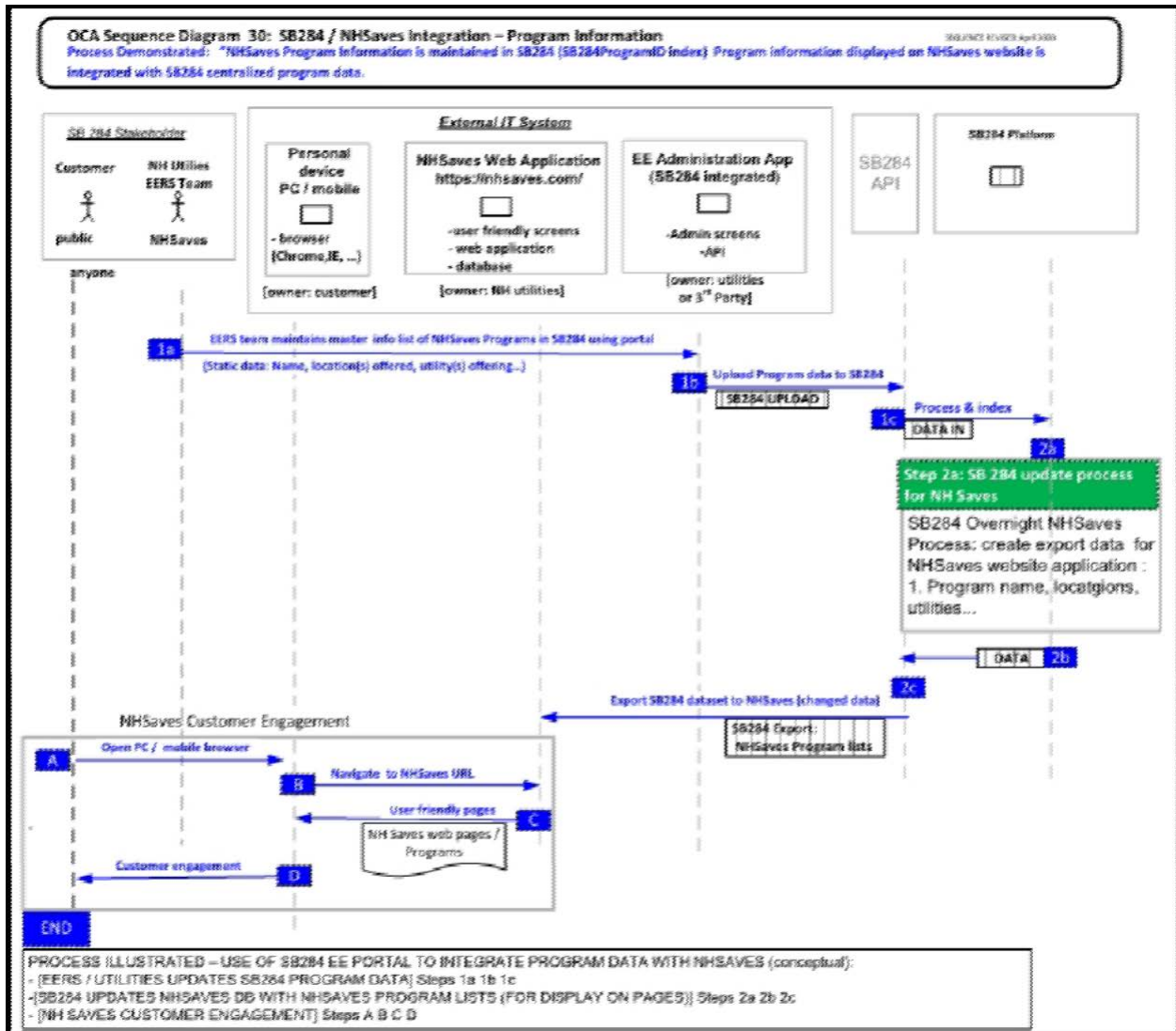
Steps A to D: NH Saves webpages reflect accurate Program information in drop down lists, selectin boxes, etc.

Sequence Diagram 30: The Sequence diagram illustrates the order of activity (top to bottom) that occur between 4 categories of actors (across the top). The 4 categories of actors are:

1. Stakeholders (customers, 3<sup>rd</sup> parties, utilities...), [Would 3<sup>rd</sup> parties need to be involved in scoping, testing, integrating and deploying an energy use data platform? If so, who are the 3<sup>rd</sup> parties?]
2. Assets (premises, meters, rooftop PV...),
3. External IT Systems (an existing utility CIS, a future CCA Platform...),
4. SB284 API (proposed) and SB 284 platform (proposed).



OCA Use Case #30: Integration of SB284 and NH Saves – EE Program Information



**Section: Data Fields required**

Refer to NH Saves data model

Refer to OCA master use case “SB284 as a Platform”

**Section: Estimated Cost**

Refer to OCA master use case “SB284 as a Platform”

**Section: Estimated benefits**

Refer to OCA master use case “SB284 as a Platform”

**Section: Required Policy Changes**

## OCA Use Case #30: Integration of SB284 and NH Saves – EE Program Information

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Addendum

Basic illustration of use case association with NH Saves web application

