# NSTAR ELECTRIC COMPANY
# D/B/A EVERSOURCE ENERGY

# MASSACHUSETTS ELECTRIC COMPANY AND NANTUCKET ELECTRIC COMPANY

# D/B/A NATIONAL GRID

# FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
# D/B/A UNITIL

# AMI STAKEHOLDER GROUP

# PROGRESS REPORT

**D.P.U. 21-80/81/82**

**FEBRUARY 15, 2024**

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## Introduction

On November 30, 2022, the Department of Public Utilities (the "Department") approved the 2022-2025 Grid Modernization Plans filed by NSTAR Electric Company d/b/a Eversource Energy ("Eversource"), Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid ("National Grid"), and Fitchburg Gas and Electric Light Company d/b/a Unitil ("Unitil") (together, the "Companies" or the "EDCs"). The Department's November 30, 2022, Order approving the Companies' 2022-2025 GMPs included a directive for the Companies to convene a stakeholder group no later than February 1, 2023, to address issues related to the Companies' advanced metering infrastructure ("AMI") implementation plans approved by the Department in its Track 2 Order (the "AMI Stakeholder Group"). D.P.U. 21-80-B/21-81-B/21-82-B at 325-326. The objective of the AMI Stakeholder Group is "to provide a forum for the Companies and interested stakeholders to collaborate in a non-adjudicatory setting to discuss AMI-related issues and to develop a joint proposal for Department review…." Id. The Department identified the following issues as areas of focus: "(1) customer and third-party access to customer usage data; (2) customer education and engagement; (3) billing of TVR offered by competitive suppliers; and (4) AMI deployment strategies that may expedite the ability for competitive suppliers to offer TVR products." Id. The EDCs commenced the AMI Stakeholder Group process with an initial "kick-off" meeting on January 31, 2023. The EDCs also retained a facilitator who was onboarded ahead of the October 3, 2023, meeting.

The Department further directed the EDCs to submit quarterly status reports, beginning on May 15, 2023, that include the following: (1) a list of stakeholders and attendees; (2) the status of any discussions and the process by which such discussions occurred; and (3) a summary of all issues on which the Companies and stakeholders have reached consensus. D.P.U. 21-80-B/21-81-B/21-82-B at 326.

On May 15, 2023, August 16, 2023, and November 15, 2023, the EDCs submitted their first, second, and third quarterly reports to the Department, respectively.[1] Since November 15, 2023, the EDCs have facilitated two additional meetings on December 13, 2023, and January 30, 2024.[2] As discussed in more detail, these meetings have focused on AMI deployment and data access issues consistent with the topic timeline established at the outset of the AMI stakeholder group.

## Section I: Participating Stakeholders

The EDCs initial progress report submitted on May 15, 2023, provided an overview of how

[1] The EDCs' May 15, 2023 progress report provided an overview of the first three AMI stakeholder meetings. The EDCs' August 16, 2023 progress report provided an overview of the next three AMI stakeholder meetings held through July 25, 2023. The EDCs' November 15 progress report covered an overview of the next three AMI stakeholder meetings held through October 31, 2023.

[2] The December 13, 2023 AMI Stakeholder Group was originally scheduled for November 13, 2023. The meeting was rescheduled to December 13 due to a scheduling conflict with an Electric Sector Modernization Plan meeting.

participants in the AMI Stakeholder Group were identified and notified of the group; a copy of the participant list was included with the May 15, 2023, report as Attachment B. The current participant list as of November 15, 2023, is provided in Attachment A to this report.

A copy of the roll call for the December 13 and January 30 meetings is included with this report as Attachment A.

The AMI Stakeholder Group Ground Rules are included with this report as Attachment B.

**Section II: AMI Stakeholder Group Meetings**

**A. December 13, 2023 Meeting**

This meeting of the AMI Stakeholder Group was originally scheduled for November 13, 2023. The meeting was rescheduled to December 13, 2023, due to a scheduling conflict with an Electric Sector Modernization Plan meeting.

A copy of the December 13, AMI Stakeholder Group meeting agenda and meeting minutes are included in Attachment C of this report. As set forth in the agenda, the December 13 meeting began with roll call and discussion of administrative items.

The first substantive agenda item at the December meeting was a discussion on data access, stakeholder consent, and third-parties' access to data, including a list of questions for discussion from the previous stakeholder meeting and presentations. The following list of priorities were identified by stakeholders:

- Permission-based exchange uses, such as a use case where a customer wants to share information with an entity to help them do something in their home or business;
- Data to be available as quickly as possible;
- Three categories of data use: (i) for billing purposes, such as bulk transfers of data; (ii) real time usage data; and, (iii) for settlement purposes, like demand response programs.

Unitil then presented on its work in the New Hampshire statewide data sharing effort. The presentation is included in Attachment C of this report.

Finally, stakeholders participated in a discussion session and planning for the January 30, 2024, meeting. Stakeholders requested an additional opportunity to ask questions on data access in January.

**B. January 30, 2024 Meeting**

A copy of the January 30, 2024, AMI Stakeholder Group meeting agenda and meeting minutes are included in Attachment D of this report. As set forth in the agenda, the January 30,

meeting began with roll call and review of administrative items. Due to a significant number of new attendees, the facilitator requested that attendees share their names and affiliations in the meeting chat.

NRG provided a presentation on Experiences and Best Practices with AMI Deployments in Other States.

Stakeholders then had a final opportunity to ask any remaining follow-up questions on data access, stakeholder consent, and third-parties' access to data.

Unitil and Eversource representatives provided a presentation on the New Hampshire Governance Concept Paper Status and Schedule.

National Grid, Eversource, and Unitil each provided a presentation on Customer Engagement and Education. Stakeholders asked questions throughout the presentations.

Copies of these presentations are included in Attachment D of this report.

## Section III. Summary of Consensus and Non-consensus Issues

### A. Consensus Issues

No major consensus points were agreed upon during the December 13, 2023, or January 30, 2024, stakeholder meetings.

### B. Non-consensus Issues

In the December 13, 2023, and January 30, 2024, meetings, non-consensus issues included:

- National Grid is in agreement with data access use cases from New York. Eversource is not signed onto all use cases from New York.

## Section IV. Next Steps

The next AMI Stakeholder Group meeting is scheduled for February 27, 2024.

ATTACHMENT A

| Organization | First Name | Last Name | Title | Contact Information | 8/29/2023 | 10/3/2023 | 10/31/2023 | 12/13/2023 | 1/30/2024 |
|---|---|---|---|---|---|---|---|---|---|
| **Eversource** | Jared | Lawrence | Senior VP Cust. Ops. & Digital Strategy, CCO | jared.lawrence@eversource.com | X | X | X | X | X |
| | Danielle | Winter | Regulatory Attorney | dwinter@keeganwerlin.com | | | | | |
| | Daryush | Donyavi | Supplier Services | daryush.donyavi@eversource.com | | | | | |
| | Denise | Magaldi | Supplier Services | denise.magaldi@eversource.com | | | | | |
| | Erin | Engstrom | Director of Regulatory Affairs | erin.engstrom@eversource.com | | | | | |
| | Jeanne | Belliveau | Supplier Services | jeanne.belliveau@eversource.com | | | | | |
| | Jennifer | Schilling | VP Grid Modernization | jennifer.schilling@eversource.com | | | | | |
| | Jessica | Ralston | Regulatory Attorney | jralston@keeganwerlin.com | | | | | |
| | Luis | Pizano | | luis.pizano@eversource.com | | | | | |
| | Mary | Quan | Rates | mary.quan@eversource.com | | | | | |
| | Rich | Chin | Manager, Rates | richard.chin@eversource.com | | | | | |
| | Riley | Hastings | | | | | | | |
| **National Grid** | Carlos | Nouel | VP Transformation Programs | | X | X | X | X | X |
| | Anna | Hofmann | | Anna.Hofmann@nationalgrid.com | | | | | |
| | Cole | Wheeler | | Cole.Wheeler@nationalgrid.com | | | | | |
| | Ian | Springsteel | | Ian.Springsteel@nationalgrid.com | | | | | |
| | Jen | Watters | | Jennifer.Watters@nationalgrid.com | | | | | |
| | John | Lamontagne | | John.Lamontagne@nationalgrid.com | | | | | |
| | John | Spring | | John.Spring@nationalgrid.com | | | | | |
| | Josh | Pasquariello | | Josh.Pasquariello@nationalgrid.com | | | | | |
| | Karsten | Barde | | Karsten.Barde@nationalgrid.com | | | | | |
| | Kosisoose | Odiaka | | Kosisoose.Odiaka@nationalgrid.com | | | | | |
| | Kristine | O'Shaughnessy | | Kristine.Dolan@nationalgrid.com | | | | | |
| | Lauri | Mancinelli | | Lauri.Mancinelli@nationalgrid.com | | | | | |
| | Lindsay | Foley | Project Manager | lindsay.foley@nationalgrid.com | | | | | |
| | Lisa | Morgera | | Elisabeth.Morgera@nationalgrid.com | | | | | |
| | Matt | Motley | | Matt.Motley@nationalgrid.com | | | | | |
| | Meghan | McGuinness | | Meghan.McGuinness@nationalgrid.com | | | | | |
| | Melissa | Liazos | Regulatory Attorney | melissa.liazos@nationalgrid.com | | | | | |
| | Melissa | Lavinson | | Melissa.Lavinson@nationalgrid.com | | | | | |
| | Melissa | Little | | Melissa.Little@nationalgrid.com | | | | | |
| | Michael | Mokey | | Mike.Mokey@nationalgrid.com | | | | | |
| | Nate | Boyce | | Nathan.Boyce@nationalgrid.com | | | | | |
| | Nathan | Holmy | | Nathan.Holmy@nationalgrid.com | | | | | |
| | Nava | Cretu-Kessel | | Nava.Cretu-Kessel@nationalgrid.com | | | | | |
| | Renee | Addario | | Renee.Addario@nationalgrid.com | | | | | |
| | Scott | McCabe | | Scott.McCabe@nationalgrid.com | | | | | |
| | Tanya | Moniz-Witten | | Tanya.Moniz-Witten@nationalgrid.com | | | | | |
| **Unitil** | Jeremy | Haynes | | | X | X | X | X | X |
| | Kevin | Sprague | VP Engineering | sprague@unitil.com | | | | | |
| | Patrick | Taylor | Regulatory Attorney | taylorp@unitil.com | | | | | |
| | Chris | Dube | | | | | | | |
| | | | | eisfeller@unitil.com | | | | | |
| **Cape Light Compact** | Rebecca | Zachas | Attorney | rzachas@kolawpc.com | X | X | X | X | X |
| | Mariel | Marchand | Power Supply Planner (Lead) | Mariel.marchand@capelightcompact.org | | | | | |
| | Audrey | Kiernan | | akiernan@kolawpc.com | | | | | |
| **IGS Energy** | Tracie | Gaetano | Senior Business Analyst | Tracie.Gaetano@igs.com | X | X | | | |
| | Tony | Cusati | Director of Regulatory Affairs (Primary Spokesperson) | Tony.Cusati@igs.com | | | | | |
| | Adam | Weaner | Senior Operations Analyst | adam.weaner@igs.com | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Vistra Corp./TXU** | Kristina | Montgomery | | Kristina.montgomery@vistracorp.com | X | X | X | X | X |
| | Sheri | Wiegand | | sheri.wiegand@vistracorp.com | | | | | |
| | John | Schatz | | john.schatz@txu.com | | | | | |
| **Actual Energy** | Diane | Mero | | diane.mero@actualenergy.com | X | X | X | X | X |
| | Stephanie | Passley-Lee | | stephanie.passley-lee@actualenergy.com | | | | | |
| | Sara | Simkovitz | | sara.simkovitz@actualenergy.com | | | | | |
| | Penny | Navaro | VO Operations | penny.navarro@actualenergy.com | | | | | |
| **NRG Energy** | John | Holz | Senior Director, Market Development & Regulatory Affairs | john.holz@nrg.com | | X | | | |
| | Marc A. | Hanks | Director, Regularoty Affairs | marc.hanks@nrg.com | | | | | |
| **Green Energy Consumers Alliance** | Larry | Chretien | Executive Director (Primary Spokesperson) | larry@greenenergyconsumers.org | X | X | X | X | X |
| | Elisa J. | Grammer | | elisa.grammer@perennialmotion.com | | | | | |
| **Office of the Attorney General** | Don | Boecke | | donald.boecke@mass.gov | | X | X | X | X |
| | Elizabeth | Anderson | | timothy.newhard@mass.gov | | | | | |
| | Tim | Newhard | | elizabeth.a.anderson@mass.gov | | | | | |
| | Chris | Modlish | | Chris.Modlish@mass.gov | | | | | |
| **Peregrine Group** | Paul | Gromer | | pgromer@peregrinegroup.com | X | | | | |
| **Department of Energy Resources (DOER)** | Aurora | Edington | Grid Modernization Policy Manager | aurora.edington@state.ma.us; Aurora.Edington@mass.gov | X | X | X | X | X |
| | Colin | Carroll | Legal Advisor | Colin.Carroll@mass.gov | | | | | |
| | Lou | Sahlu | Energy Efficiency Economist | lou.sahlu@mass.gov | | | | | |
| | Jerrylyn | Huckabee | Energy Efficiency Coordinator | jerrylyn.huckabee@mass.gov | | | | | |
| | Marian | Harkavy | | Marian.Harkavy@mass.gov | | | | | |
| **Colonial Power Group** | Mark | Cappadona | President | mark@colonialpowergroup.com | | | X | X | X |
| | Stuart | Ormsbee | Vice President (Spokesperson) | sormsbee@colonialpowergroup.com | | | | | |
| **WeaveGrid** | Steve | Bright | Senior Manager, Policy and Regulatory Affairs | steve@weavegrid.com | | | X | X | X |
| **City of Boston** | David | Musselman | Municipal Energy Unit Director | david.musselman@boston.gov | | | | | |
| **CleanChoice Energy** | Andrew | Strauss | | andrew.strauss@cleanchoice.com | | | | | |
| **David Energy** | Jaden | Crawford | Lead | jaden@davidenergy.com | X | | X | X | X |
| | Paty | Nosal | | patty@davidenergy.com | | | | | |
| | Rice | Lummis | | rice@davidenergy.com | | | | | |
| **Low-Income Weatherization and Fuel Assistance Program Network** | Jerry | Oppenheim | | jerroldopp@democracyandregulation.com | X | | X | X | X |
| | Brian | Beote | | BBeote@actioninc.org | | | | | |
| **Just Energy** | Charlie | Iannello | | charlie@csienergy.net | | | | | |
| **Constellation** | Gretchen | Fuhr | Senior State Government Affairs Manager | gretchen.fuhr@constellation.com | | | X | X | X |
| | David | Creer | | david.creer@constellation.com | | | | | |
| **Acadia Center** | Kyle | Murray | Senior Advocate & Massachusetts Program Director | kmurray@acadiacenter.org | X | X | X | X | X |
| **Mission Data** | Michael | Murray | President | michael@missiondata.io | | X | | | |
| **UtilityAPI** | Sebnem | Tugce Pala | Director of Regulatory Affairs | sebnem@utilityapi.com | | X | X | X | X |
| | Katie | Papadimitriu | | katie@utilityapi.com | | | | | |
| | Josh | Keeling | | josh@utilityapi.com | | | | | |
| | Deitrea (Dee) | Martir | | dee@utilityapi.com | | | | | |
| **National Consumer Law Center** | John | Howat | Senior Energy Analyst | jhowat@nclc.org | | X | X | X | X |
| **Landis + Gyr** | Marguerite | Behringer | Director of Regulatory Affairs and Industry Relations | Marguerite.Behringer@landisgyr.com | X | X | X | X | X |
| | Jeff | Wamboldt | | Jeff.Wamboldt@landisgyr.com | | | | | |
| | Michael | Vecchi | | Michael.Vecchi@landisgyr.com | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Good Energy** | Patrick | Roche | | patrick@goodenergy.com | X | | X | X | X |
| **Oracle** | Wendy | Lohkamp | | wendy.lohkamp@oracle.com | | X | X | X | X |
| | Samantha | Caputo | | samantha.caputo@oracle.com | | | | | |
| **Stack Energy** | Greg | Geller | Founder & CEO | greg@stackenergyconsulting.com | | | | | |
| **NYSERDA** | Kyle P. | Monsees | | kyle.monsees@nyserda.ny.gov | | | X | X | X |
| | Lea | Springstead | | Lea.Springstead@nyserda.ny.gov | | | | | |

**Attachment B: Stakeholder Group Ground Rules**

Roles and Responsibilities: Members

- Member Organizations shall designate an organization spokesperson who shall act as the point of contact to receive all communications, meeting invites, updates, etc. regarding the AMI Stakeholder Group. Member Organizations are allowed to be a member of the AMI Stakeholder Working Group at the time when topic of their interest is on the agenda for discussion.
- Member Organization spokespeople and participants will make every attempt to attend all applicable meetings, to be on-time, and to review all documents disseminated prior to the meeting.
- If a representative or his\her alternate cannot attend a meeting, the representative should let the Facilitator know prior to the meeting (by e-mail).
- All AMI Stakeholder Group participants are charged with participating in a constructive forum where diverse points of view are voiced and examined in a professional and balanced way. Personal attacks are not permitted.
- All AMI Stakeholder Group participants agree to act in good faith in the discussions. 'Good faith' means that they will be forthright and communicative about the interests and preferences of their organization and will actively seek agreement wherever possible.
- It is the responsibility of the AMI Stakeholder Group spokespersons to keep their organizations informed of developments in the working group process.
- AMI Stakeholder Group participants may confer with each other in between meetings and are encouraged to do so.
- AMI Stakeholder Group participants not permitted to quote or otherwise represent other members of the working group process to the press or other outside entities (including in blogs, social media, etc.), or to speak on behalf of the AMI Stakeholder Group.
- Member Organizations will provide the AMI Stakeholder Group service list with any materials they intend to present consistent with a meeting agenda at least one week prior to the meeting at which the materials will be discussed.

Roles and Responsibilities: Facilitator

- The Facilitator's primary function is to manage productive and well-informed meetings. The Facilitator is not authorized to provide substantive feedback, clarifications, points of agreement or disagreement on meeting discussions, etc. The Facilitator's responsibilities are limited to administrative/ministerial duties only.
- The Facilitator will be responsible for taking meeting minutes, including recording points of agreement and disagreement. The Facilitator will maintain a master list of final consensus positions and proposals, as well as a summary of areas of disagreement.
- The Facilitator will impartially and in a non-partisan manner (not favoring any organization over another) facilitate all AMI Stakeholder Group meetings to ensure that the group is able to discuss the meeting's agenda topics with all member organizations having sufficient time to discuss their point(s) of view, requests, concerns, clarifications, etc.
- The Facilitator and the Electric Distribution Companies ("EDCs" collectively and Eversource, National Grid and Unitil separately) will develop each meeting agenda to ensure that all necessary topics are discussed and, where possible, consensus is reached so that the EDCs, with the assistance of the Facilitator, may prepare both the quarterly and final AMI Stakeholder Group's reports required by the Department of Public Utilities ("DPU").
    - All AMI Stakeholder Group member organizations are permitted and encouraged to submit proposed agenda items no later than one week in advance of a stakeholder

meeting. The Facilitator will construct agendas based on the established topic for that meeting, which should be germane to one of the four focus areas.
    - The EDCs and Facilitator will review the submissions and make a final determination as to the meeting agenda.
    - Any submitted agenda items that are not included in the next scheduled meeting agenda and are germane to one of the four focus areas will be included on a future meeting agenda to ensure that all submitted agenda items are addressed. Suggested agenda items that are not directly relevant to the four focus areas will be reviewed by the Facilitator and EDCs and added to future agendas if time permits and if they determine they will add value to the AMI scoping and design process.
- The Facilitator will prepare draft agendas and meeting summaries in a timely fashion for distribution to the AMI Stakeholder Group members. Agenda will be distributed at least three business days prior to a scheduled meeting to ensure that all member organizations have sufficient time to prepare for the meeting. Meeting summaries will be distributed within 7 business days following a meeting.
- All documents will be posted on a SharePoint site maintained by the Facilitator and the EDCs for the duration of the process, and the Facilitator will provide email notice when new documents are posted to the SharePoint.
- The Facilitator and the EDCs will take the lead in assembling the quarterly and final reports the DPU has required.
    - The Facilitator will post draft quarterly and final reports to the SharePoint site. The Facilitator will notify the AMI Stakeholder Group members that the drafts are available for review.
    - The Facilitator, with input from the EDCs, will establish the review schedules and notify AMI Stakeholder Group members via email in advance of the review periods. The review periods will be designed to provide AMI Stakeholder Group members with sufficient time for members to provide at least one round of questions, clarifications, suggestions, etc. before the report in question is filed with the DPU.
    - The Facilitator, with input from the EDCs, will establish a review protocol to ensure that all AMI Stakeholder Group members' feedback on the reports is retained while ensuring appropriate version control. The review protocol will be posted to the SharePoint site.
    - All final filed reports will be posted on the SharePoint site.

# AMI Stakeholder Group Meeting Minutes

## December 13, 2023 | 1:00-3:00 pm

**Attendees:**

**ERM Representatives:**

| | | |
|---|---|---|
| Renee Hoyos | Madison Weaver | Sarah Barreca |
| Emma Jablonski | | |

**Participants:**

| | | |
|---|---|---|
| Aurora Edington, DOER | Carlos Nouel, National Grid | Chris Modlish, AGO |
| Danielle Winter, Eversource | Daryush Donyavi, Northeast Utilities | David J. Creer, Constellation |
| Elisa Grammer, Green Energy Consumers Alliance | Greg Geller, Stack Energy Consulting | Jaden Crawford, David Energy |
| Jamie Goudreault, Unitil | Jared Lawrence, Eversource | Jeremy Haynes, Unitil |
| Jessica Ralston, Keegan Werlin | John Howat, National Consumer Law Center | John Spring, National Grid |
| Josh Pasquariello, National Grid | Justin Eisfeller, Unitil | Lisa Morgera, National Grid |
| Lou Sahlu, DOER | Luis Pizano, Eversource | Marguerite Behringer, Landis+Gyr |
| Mariel Marchand, Cape Light Compact JPE | Mark Cappadona, Colonial Power Group | Melissa Liazos, National Grid |
| Michael Murray, Mission Data | Michael Vecchi, Landis + Gyr | Nathan Holmy |
| Patrick Roche, Good Energy | Pat Taylor, Unitil | Rebecca Zachas, counsel for Cape Light Compact JPE |
| Renee Addario, National Grid | Sara Simkovitz, Actual Energy | Tanya Moniz-Witten, National Grid |
| Jeff Wamboldt, Landis+Gyr | Jerrylyn Huckabee, DOER | |

**Agenda**

1. Roll Call/Administrative items (10 min)
2. Data Access, Stakeholder Consent, and Third-Parties (30 min) (EDCs)
    - What use cases should be considered?
    - What data is and is not included?
    - How can data be standardized and consistent?
    - What do customers need to do to execute data sharing and how is it being processed?
    - Specifics surrounding third-party eligibility and access to data.
3. Unitil Presentation on New Hampshire (30 min)
4. Discussion (30 min)
5. Planning for next meeting (20 min) (EDCs)
    - Customer Education and Engagement
        - No core system implications;
        - Customer engagement platform SOW tentatively targeted for late 2023, with business requirements to be defined in 2024.

## Meeting Minutes

### Roll Call/Administrative items (5 min)

- Renee Hoyos welcomed attendees to the meeting, reviewed the agenda, completed roll call, and reviewed the ground rules and communications processes for the meeting.

### Data Access, Stakeholder Consent, and Third-Parties (EDCs, 30 min)

- D. Ralston: As we get closer to the final report, we wanted to drill down in terms of what people are looking for in data access. We all agree it's important for companies and commonwealth's climate goals. First question, what use cases should we be considering? We'd like to hear from stakeholders and EDCs. Trying to clarify and narrow down.
- M. Murray: Primary use cases is that a customer wants to share their information, usage, bills, etc. with an entity that will help them do something in their home or business. In my experience having done this in New York with Integrated Energy Data Resource (IEDR), there were loads of different use cases, a lot could be boiled down to access. There are others around rate plans and community data, things like that. Those can be encapsulated in permission-based exchange use cases.
- J. Lawrence: Michael's examples are good and consistent with what we're expecting to accommodate. Let's move on to other speakers.
- L. Huckabee - We agree with the first use case listed but would like to make sure data is available as quickly as possible in that use case. One of the services customers are able to get from a third party is DR. It doesn't need centrally verified data but could be data received locally from the meter.
- A. Edington: It would be nice to hear from EDCs what use cases they are planning on, then have stakeholders suggest their own. Michael's examples are great.
- G. Geller: I'm representing NRG Energy. To add to Michael and DOER, there's three useful buckets to think about. Using things for billing purposes, such as bulk transfers of

data if there's a large supplier. Real time use is important if you want to help a customer manage their demand, having access to that data in near real time is important to influence behavior. Third is settlement purposes, like demand response programs. Could be utility program, could be ISO program. That's been challenging in the past, very labor intensive. We need data to settle performance, reduce inefficiencies and automate data. The fixed cost of serving customers becomes too high and you limit participation from smaller customers.

- M. Marchand: I would agree with Greg, that's a helpful list. The Compact was hoping to hear from EDCs. There were some questions left open about how municipal aggregators would access data. It would be great to hear answers to these questions from EDCs.
- C. Nouel: It's worth stating that this is an evolving thing. From National Grid perspective, the biggest thing from aggregators' perspective is developing infrastructure where we can support future use cases when available. Trying to make the platform as robust as possible. In terms of use cases, it's demand response, energy efficiency, things along those lines. There's the aggregated data for grid solutions, those kinds of things. Our view has been to keep it consistent on how we share data. We discussed at the last meeting a solution similar to New Hampshire. From a National Grid perspective, that's what we're interested in - a structured, standard way for third parties to share data so we're not fielding thousands of unique requests. Trying to come up with a list of what is being considered. Aligned with use cases from New York. Our view is to share 15-minute intervals. That should be enough for settlements. If we go to 5 minutes in the future, we'll see how it pans out. 15 minutes should be enough for settlement.
- J. Lawrence: Voicing agreement with Carlos, except we are not signed on to everything from New York. Mariel, your question that you posed last time, we dug into it and customer consent would not be required for aggregation to access the data. If a bilateral agreement is in place and that entity is a DPU-regulated entity, then individual customer consent is not required. We agree with all other comments made. The availability of real time data is not part of our design to provide real time feeds. The meters we are procuring have an app environment that is able to support near-real-time data access applications. Those meters will be able to be loaded with both utility managed apps that allow that in certain contexts and allow third party apps. One piece that gives me a bit of heartburn, we are not interested in getting into home Wi-Fi tech support business, so we will have to work out how customers receive tech support when they encounter home network issues while accessing third-party apps.
- C. Nouel: Similar to Eversource deployments, we will have same delivery and grid edge solutions that will be more customer oriented. Provided by a third-party provider.
- J. Eisfeller: Generally, I agree with everything said by the utilities. I agree with Michael's comment in the chat *(chat log below).* New York is very broad, and we could spend a long time talking about hundreds of use cases and never get to a solution. It's important for this group to focus on priorities and then add to that functionality over time. That priority would be usage billing and account data. We can all accomplish that in a short period of time. All the utilities you see here will have essentially the same AMI systems. The ability to gather data and provide certain services are similar. The other thing is these questions may be covered in our presentation on the top priorities we're discussing in New Hampshire.
- M. Marchand: Jared, thanks so much. That generally sounds good to us and appreciate you bringing that back. So, the customer won't have to do anything as long as the agreement is in place? No Green Button  Connect?

- J. Lawrence: That is correct.
- E. Grammer: I was wondering if Jared could elaborate on DPU regulated entities.
- J. Lawrence: Sorry, but that is all I have to share. Not sure if my colleagues can elaborate or we'll get back to you offline.
- J. Ralston: DPU regulates all utilities and municipal aggregators. There's also oversight on competitive suppliers.
- G.Geller: Questions on Carlos' and Jared's responses in terms of ISO New England settlement. In terms of ISO New England settlements, in the market there are 5 min locational marginal prices (LMPs). Carlos, for settlement purposes, are you all settling with the customer at 15-minute intervals?
- C. Nouel: If there are products where there are 5-minute intervals, and I don't know this for sure, those are likely the largest customers and not part of this deployment. We can't do that for all. It would be too expensive. We could do that for a subset of residential customers. For residentials, that would be highly unlikely in the near future. Maybe large commercial customers would support it. That is not part of this deployment.
- G. Geller: Jared, on real time data access, I think I heard you say that the meters will have that functionally embedded, but that capability may not be turned on at time of deployment for real time data. Is that correct?
- J. Lawrence: That's right, but probably needs more explanation. We will not be doing that on a regular basis. It's not something we will provide around the clock or for extended periods. We are not backhauling customer data to make it available. We envision we will be developing in partnership and accommodating third party apps that will allow near real-time third-party data using customers home network, not the utility AMI data network. Does that answer your question?
- G. Geller: Yes.
- C. Nouel: Similar for National Grid.
- R. Zachas: Is Eversource envisioning for data access that for municipal aggregators that it would be opt-out?
- J. Lawrence: You mean would we allow a customer to opt out of sharing their data? Yes, customers would have that ability. Customers have ultimate control over data.
- R. Zachas: So aggregators would have access to all information unless a customer opted out?
- J. Lawrence: Yes.
- L. Sahlu: So when you talk about third parties having data access, do you have a sense of how far in this process that would be? Would it be soon after all meters are installed, or way in the future but not part of these investments?
- J. Lawrence: The capability exists today, but we do not yet have any Eversource-sponsored apps ready for initial go-live, or it's not part of our roadmap to develop apps along with the initial deployment, but they will be explored after deployment.
- L. Pizano: That's correct. I would anticipate that it would happen during the deployment period. On day one, every single meter will be capable, and every application will need to be fully tested, approved by AMI vendor, but every day there are more applications available. Not day one, but not years and years out.
- M. Murray: We've veered into second bullet on what is and is not included. One thing to highlight is that there may be, for settlement purposes, additional data fields beyond traditional account billing and usage information. The transmission zone where customer is located [inaudible] customer-specific information where there is no other source than

the utility. Another question on meter-based applications is that the application has to be approved by the vendor, so how do we prevent a situation in which there's unfair competition for apps? For example, if Landis & Gyr has an offering for EV charging, and someone else wants to make that app and Eversource approves, can you give us confidence that Landis & Gyr would accept that option or would it affect competition?

- L. Pizano: We're not working with Landis & Gyr. The focus is that it does not impair meter functionality – not taking too much memory, processing power, etc. Making sure it does not interfere with meter functionality. Not looking at whether the application does what it says it will do. I can't give you full confidence, but they are not looking at functional or competition.
- C. Nouel: Michael, you're familiar with work in New York. Happy to share with you information on what we did in New York. At a high level, it can go two ways. The utility identifies a need where the utility chooses the solutions. Or a third party identifies a problem and how to solve it. A big part of the utility's role is making sure apps loaded into the meter are secure or don't affect performance. This is a new world so New York is not the ultimate answer but it's a feasible path to get started. And Michael, your first point. Things like transmission zone, the reality is that those are related to large customers. Don't anticipate residential customers getting to that point in the near future.
- R. Zachas: Following about agreement between supplier and EDC, curious about terms and conditions in that agreement. Standard, or any controversial terms?
- J. Lawrence: Which agreement?
- R. Zachas: Between supplier and EDC.
- J. Lawrence: Let me get back to you on that.
- R. Zachas: I'd like to comment that we are hearing some of this information for the first time, so it'd be nice to carve out 10 minutes in next meeting for these topics.

**Unitil Presentation**

- J. Haynes: Director of Enterprise IT at Unitil. Talk about the work we're doing in New Hampshire with statewide data sharing effort. Unitil, Liberty, and Eversource are collaborating on statewide data platform with a large suite of services. I'll talk about how the platform will use APIs. We plan to provide access to gas and electric data. One of the goals is to enable one stop shop model so I can have one place to go to for data for all of those sources. One of our goals is to remove barriers to data access.
    - Brief timeline for sense of history. Effort started in 2016 with Unitil having scoping discussions on statewide data model in a utility agnostic way. That extended into 2019 grid modernization discussions.
    - In 2021 completed multi-year design process. PUC approved settlement agreement in 2022. This year, some of the accomplishments are the cost benefits analysis, review each of utilities back-end designs, so each utility is responsible for building out back-end interface for cost effectiveness and viability, and at end of this month we are hoping to issue request for proposal (RFP).
    - In 2021, PUC approved creation on data platform council. Group has been responsible for overseeing design conversations.
    - To get into platform design, there are three main components. The platform hub, which is the single-entry point for vendors, third party supplies to request data.

We have the utility APIs. Each utility will stand up an interface that will allow the platform to pull data. Then we have the logical data model that provides mapping between those fields and the Green Button standard. The logical data model sits between raw source data and the APIs themselves. Removes idiosyncrasies between utilities so we're all speaking the same language.

- We decided to design the program around the notion of programmable interfaces. Green Button Connect is our standard for customer-specific data and that standard covers authorization and customer consent. All requests come in through platform hub. It sends requests to individual utilities to retrieve requested data. One important aspect is that we are not storing data in the hub except for a few specific reasons. Instead, the hub will request data when it needs it and will only be stored as needed.
- The hub is our central web portal. The platform hub is responsible for data functionality. It's the hub's responsibility to do that aggregation functionality. The hub will also be our documentation [inaudible]. We'll have the hub certified by Green Button Alliance. The logical data model I referred to earlier defines the customer-specific usage data. We've taken a minimum viable product (MVP) data approval to logical data model. This represents core customer building and usage fields. The initial model is constrained to a limited number of [inaudible] provides a list of expected or allowed values. Settlement requires 24 months of historical customer data. Data will be made available in a timely manner. Not all utilities participating may be able to provide the same fields. Nor will each utility be able to offer the same freshness. Some may be 15 minutes; some may be daily or monthly. The hub will handle time differences. Although we're using Green Button, there is not a standard for aggregated data. Green Button Connect workflow includes customer consent at utility level which requires customer to opt in. It asks the customer the who, what, and why questions about data. Once the customer authorizes, they will not have to reauthorize until the authorization expires. If the customer does not provide data, it will expire after five years. The green button standard specifies use of OAUTH. Data will be encrypted at all points. Aggregated data will be anonymous. From vendor onboarding, I wanted to mention that platform users will be registered under four risk categories based on what information they are accessing. Any vendor consuming customer data must complete a standard cyber security questionnaire. Any vendor that signs on must be part of DataGuard and requires cyber security risk assessment.
- We have a few user stories which are similar to use cases described earlier.
- What are our next steps? Work is wrapping up on PUC items including backend designs and costs for API and data mapping. There are lot of vendors building these types of products. We believe we'll be able to leverage commercial or off-the-shelf software and won't need to start from scratch. Work is underway for a grant proposal for Grid Resilience and Innovation Partnerships (GRIP) funding. We believe the logical data model and standardization could be leveraged regionally and platform could be extended to those regions.

- G. Geller: Very helpful, thank you. My understanding is that the is not the best for some bulk transfers, and it sounds like there could be other mechanisms. Can that be used for those use cases.?

- J. Haynes: Green Button Connect does handle batching you're talking about. For large, aggregated data sets, currently for customer specific data Green Button Connect is the approach we're taking.
- G. Geller: Even if a competitive supplier is trying to pull data for thousands of customers?
- J. Haynes: Yes, the idea is that hub would be able to respond and batch the data appropriately.
- R. Zachas: Thank you, very helpful. In New Hampshire for a customer to share data with third party, how would process work? Customer would have to register with Green Button Connect and DataGuard?
- J. Haynes: Not exactly. That onboarding is strictly on vendor side. On customer side, the Green Button Connect workflow is that the vendor might request John Smith's data, that comes through the hub. If we have authorization already, vendor can pull data without any interaction. If not, the customer will receive a message that will bring up the form and ask for consent. The vendor is able to pull data on demand for as long as that authorization exists. Does that answer your question?
- R. Zachas: Yes.
- M. Murray: To Rachel's question, it is important that the customer doesn't have to register with another online service they've never heard of. They authenticate themselves and that's hosted on EDC's website so they don't need other login credentials. Lesson learned from Texas where customers had to create yet another log in and password for an entity they haven't heard of. Using bill pay relationship for that purpose which is a plus.
- R. Hoyos: Any other questions? We'll move on to general discussion on data access.

**Discussion (Jessica Ralston, 30 min)**

- A. Eddington: What can stakeholders expect to stay engaged on this topic? It's important for the Commonwealth to understand how data access platform development is progressing at the utilities, the implementation plan and associated timeline, and future opportunities for stakeholders to engage.
- J. Haynes: We recognize that data access and all the topics covered in the stakeholder group continue to justify the need for continued discussion. We intend to incorporate and solicit feedback over the course of our project planning.
- J. Eisfeller: Data sharing is going to live on. Unitil would be open to stakeholder discussions moving forward on a quarterly or annual basis. In New Hampshire where we have a stakeholder group, we've learned quite a bit from stakeholders on what's going on in other parts of the country. Unitil will participate in any events like that. We could offer to host but we are the smallest entity in the room.
- C. Nouel: This grid has been helpful as we see the requirements for this system, data is a conversation that will continue to evolve.
- Edington: That's helpful with the openness to some sort of check in with stakeholder groups.
- J. Howat: This is an interesting discussion. At NCLC we're concerned about data privacy issues, so in terms of ongoing discussions as the systems in Massachusetts evolve, we'd be interested. Some of the issue areas here from NCLC's perspective involve

education components. What is being done so that customers understand the ramifications of releasing data to third parties? Also have an interest, sort of outside of EDCs, but what controls are applied to vendors with what they do with customer data. Once it's out there it's out there. Customers need to understand that. Thank you for discussion today.

- C. Nouel: The first document the EDCs put together is compliance with state and federal requirements around privacy. The EDCs have a big commitment to secure data. Right now data will be in the hands of a lot of people. It's important that all of us take that with the right level of security. The rules and expectations are set clear for anyone who gets to receive that data.
- M. Murray: If you look at how customers are informed about how their data will be used, the wireframe is a good example. It has two pieces of information. How is a third party going to use that information? That statement is enforceable by US Federal Trade Commission (FTC), so if you violate, the FTC can go after you. The second is the terms from the utility. The utility can say we have not vetted this company, proceed at your own risk. Both of those are important and are represented on the consent screen. Couple that with annual notices under data guard. There's eligibility requirements, and that's what the third parties have to agree to. Some of those are technical legal, cyber security. Different jurisdictions have that debate. In our mind, the DPU needs to decide what are the requirements for third parties. It sets the threshold for what the entities need to comply with. The third parties are not necessarily third-party companies. Could be universities, nonprofits, bill assistance. Could be useful for DPU to establish consistent requirements.
- G. Geller: One more question on customer authorization. For customers that have previously granted authorization to competitive suppliers, are those customers going to have to reauthorize competitive suppliers or will that previous authorization continue for a certain period of time?
- C. Nouel: Subject to potential reconsideration, they should recertify. My logic is that what you agreed to has changed with AMI. The data being shared is different than what consenter agreed to first.
- J. Lawrence: I agree. Is anyone aware of instances in other states that differ?
- G. Geller: That's a good question, I'll take that back.
- M. Murray: I have some familiarity. Regulated energies and unregulated ones are treated differently. In general, they do not need another customer consent process because they are regulated. For the unregulated or Green Button use case, it's a bit of a false dichotomy, but if you are not a licensed entity and you're using Green Button, it's not only recommended but technically required. If previously you were getting monthly data and now it's 15 minutes. You can request less, but you cannot request more without subsequent authorization.
- L. Huckabee: The question is, if that's what happens in New Hampshire, is there a general sense of how the Massachusetts EDCs are feeling about this approach? Is there any problem with this general framework? Is this replicable or is there something wrong with it?
- J. Eisfeller: We support approach. We plan on using the same back-end systems, Green Button . We should be able to provide Green Button data and plan on using it in Massachusetts and in Maine. We plan on leveraging the same technology in the same states. We're pursuing a GRIP Grant for New Hampshire and I think a regional approach would be well received.

- C. Nouel: From National Grid perspective, we're part of the proceedings in New York so we're building our side of the New York model, but I think a lighter weight version of this is a good thing. This is a quicker way to get us to the end. Not the ultimate destination, but the outcomes we want to deliver. We are building flexibility into our back-end systems. I don't see significant concerns.
- J. Lawrence: I'll refer everyone to the matrix we shared prior to the last meeting. That framework brings forth the best elements that are largely consistent with the other models.

**Planning for next meeting (EDCs, 20 min)**

- R. Hoyos: Opened up the topic to participants to discuss topics of interest for the next stakeholder meeting.
- C. Nouel: I personally have found that the matrix is a good way to start the conversation. If it is okay with the group, the EDCs can put together a similar grid for this topic. Hoping to get more community organizations involved with this topic. Making sure we get the most robust customer engagement plan we can. I would suggest we start with a matrix and then have discussions from there.
- J. Lawrence: At Eversource, we are in the later states of completing our RFPs for the AMI customer engagement portal. We could share functional business requirements we will have. This lends itself to stakeholder input because we are looking for input on content that will be delivered. We are timing the customer engagement portal to go live a few months before we start installing meters in 2025 and we want to make sure we are hitting customers with the right messaging. The EDCs focus on designing and delivering the functionality at this stage, but it will be useful to hear from stakeholder representatives on key messages and stakeholder engagement plans as we build the campaign content.
- M. Murray: I don't know where Eversource is at on this, in terms of business requirements and matrix, there are other jurisdictions that have done some work requirements they've used in the past. I'm happy to share if that's of interest, but I think that New Hampshire is a better place to start because it's been memorialized.
- J. Lawrence: Are you talking about data sharing or customer engagement?
- M. Murray: Well, they are related. Where is customer engagement in the platform?
- J. Lawrence: We've done next to nothing on AMI customer engagement in New Hampshire because we do not have approval to deploy AMI there.
- C. Nouel: We are actively deploying it in New York so we can share what we've deployed in New York. So, we can share lessons learned.
- L. Huckabee: I think that if there is a matrix, I assume a broad explanation of where you are on that topic and solicit feedback. If that's the case, that makes sense. I would encourage a presentation by EDCs first thing in the process. I expect there may be different stakeholders present for this particular process, and to be clear about what you know already versus what you need to know.
- M. Murray: When is the next meeting?
- R. Hoyos: January 30.
- R. Zachas: Would like to set aside a few minutes for final questions.
- R. Hoyos: For the next agenda, we will include follow-up on this data access presentation, EDC presentation on customer education plans, and Q&A follow-up. It

sounds like we anticipate maybe a slightly different set of stakeholders. Are folks thinking about opening it up to a larger group of people?

- C. Nouel: I think there are a lot of community groups that will be interested to hear from. Nuances on specific communities, topics that are relevant to plans so that we can be as effective as possible when deployed.
- A. Edington: I wanted to note that the electric sector modernization plans and all the work there with stakeholder engagement. As we're talking about this, I encourage the EDCs to connect with your stakeholder engagement folks on best practices from those meetings.

**Chat Log**

[1:13 PM] Michael Murray (Guest)

IEDR use cases are published here: https://www.New Yorkserda.New York.gov/All-Programs/Integrated-Energy-Data-Resource-Program/Use-Case-Development

[1:15 PM] Michael Murray (Guest)

We (MIssion:data) don't think all of IEDR's use cases are worthwhile or top priorities, but permission-based access to usage/billing/account data is represented there

[2:24 PM] Carlos Nouel

BRB

**Stakeholder priorities for data access:**

- Michael Murray suggested primary use case is customer who wants to share information with an entity to help them do something in home or business, encapsulated in permission-based exchange uses.
    - J. Lawrence, L. Huckabee, and A. Edington in agreement
- L. Huckabee suggested priority for data to be available as quickly as possible
- G. Geller suggested three buckets: billing purposes, such as bulk transfers of data; real time usage data; and, settlement purposes, like demand response programs.

# AMI Stakeholder Group Meeting

DECEMBER 13, 2023

PHOTO BY JON MOORE

Sustainability is our business

# Meeting Agenda

**1. Roll Call/Administrative items** (10 min)

**2. Data Access, Stakeholder Consent, and Third-Parties** (30 min) (EDCs)

- What use cases should be considered?
- What data is and is not included?
- How can data be standardized and consistent?
- What do customers need to do to execute data sharing and how is it being processed?
- Specifics surrounding third-party eligibility and access to data

**3. Unitil Presentation on New Hampshire** (30 min)

**4. Discussion** (30 min)

**5. Planning for next meeting** (20 min) (EDCs)

- Customer Education and Engagement
  - No core system implications;
  - customer engagement platform SOW tentatively targeted for late 2023, with business requirements to be defined in 2024

# Roll Call

- Eversource
- National Grid
- Unitil
- Cape Light Compact
- IGS Energy
- Vistra Corp. / TXU
- Actual Energy
- NRG Energy
- Green Energy Alliance Consumers
- Office of the Attorney General
- Peregrine Group
- Department of Energy Resources (DOER)
- Colonial Power Group
- WeaveGrid
- City of Boston
- CleanChoice Energy
- Low-Income Weatherization and Fuel Assistance Program Network
- Just Energy
- Constellation
- Acadia Center
- Mission Data
- UtilityAPI
- National Consumer Law Center
- Landis + Gyr
- Good Energy
- Oracle

# Ground rules and communication process

Meetings

- Agenda items due 7 days prior to meeting
- Agenda sent 3 days prior to meeting
- Meeting summary available 7 days after meeting

Report Schedule

- 4th Quarter Report Due in February

Communication

- Email management process for ERMAMIStakeholdergroup@erm.com

# Data Access, Stakeholder Consent, and Third-Parties

EDCs, 30 minutes

- What use cases should be considered?
- What data is and is not included?
- How can data be standardized and consistent?
- What do customers need to do to execute data sharing and how is it being processed?
- Specifics surrounding third-party eligibility and access to data

# Unitil Presentation on New Hampshire

Unitil, 30 minutes

Unitil

# NH Statewide Data Sharing

December 2023

# Project Overview

- New Hampshire electric and natural gas utilities Unitil, Liberty and Eversource are creating a state-wide Data Platform that will provide opportunities for utilities, their customers, and third parties to access standardized energy data and to participate in data sharing.
- The Data Platform will enable a suite of leading-edge data services with a single set of application programming interfaces (API).
- Provides secure access to electricity and gas customer data including usage (whether smart meter data or monthly usage from traditional meters) and billing and customer account data.
- Goal of “one-stop shopping” for multiple users, including entrepreneurs and DER providers, community choice energy, and state agencies, regardless of the underlying heterogeneity in digital records across the state’s three utilities.
- Removes barriers to contemporaneous electronic data access…

# Brief Timeline

- 2016 – Unitil and NH Office of Consumer Advocate begin initial scoping discussions. Development on a "logical data model" for NH energy data. This work extends to Grid Modernization discussions with the PUC in 2019.
  - This design process yielded a common data model for structuring customer data across the state's three electric and gas utilities.
- 2021 – Multi-year design process completed by a large stakeholder group.
- March 2022 – NH PUC approves a unanimous settlement agreement ratifying the overall design of the Data Platform, with the common data model and customer consent procedures being key components, and established a process for assessing costs and benefits.
- August 2023 – Completion of Cost Benefit Analysis by Dunsky
- October 2023 – Review of utility backend design and costs by third party with PUC report.
- December 2023 – Issuance of RFP for platform hub development and operation

*The Commission supports making utility data available while implementing strong privacy and security standards to protect the data of utilities and their customers. Impaired access to customer usage data is a potential barrier to competitive market entry.*[6]

[6] Order No. 26,589. New Hampshire Public Utilities Commission. Docket No. DE 19-197 dated March 2, 2022.

# The Team

- In 2021, the New Hampshire Public Utilities Commission approved the creation of a Data Platform Governance Council (“Data Platform Council”).
- The Data Platform Council has met weekly since 2021
- The council has overseen the design of the Data Platform (including a standardized data model) and the issuance of requests for information and requests for proposal for different aspects of the Data Platform.
- The utilities Eversource, Liberty and Unitil will lead the Data Platform development effort.

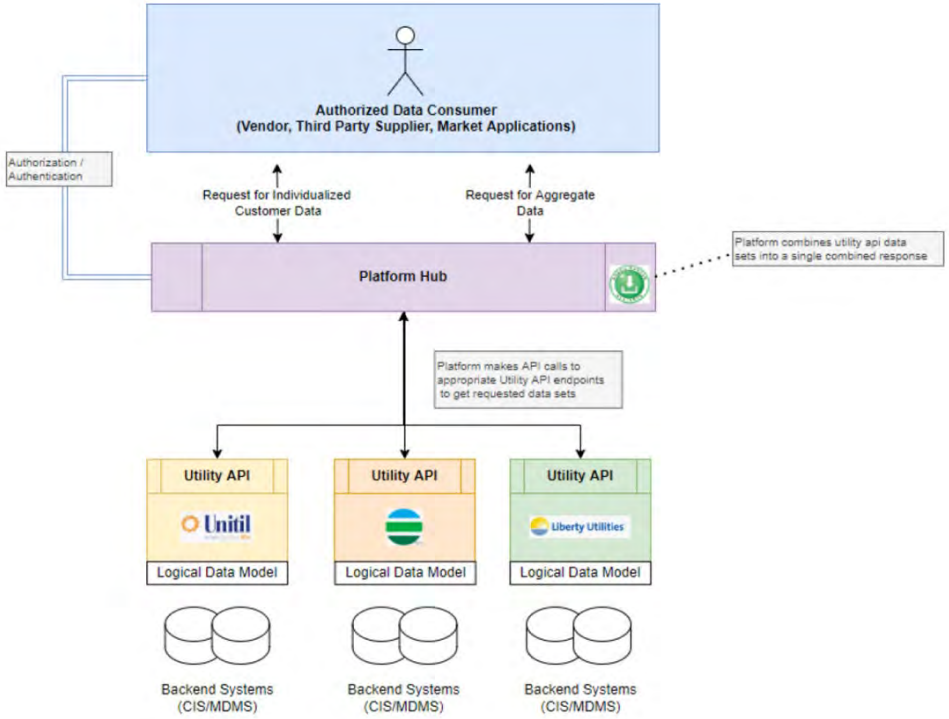
Data Platform Council Members:

- Eversource
- Liberty
- Unitil
- NH Department of Energy
- Clean Energy New Hampshire
- Community Power Coalition of New Hampshire
- Office of the Consumer Advocate
- Towns and cities pursuing community choice aggregation DER providers, including Google/Nest

# Our Approach

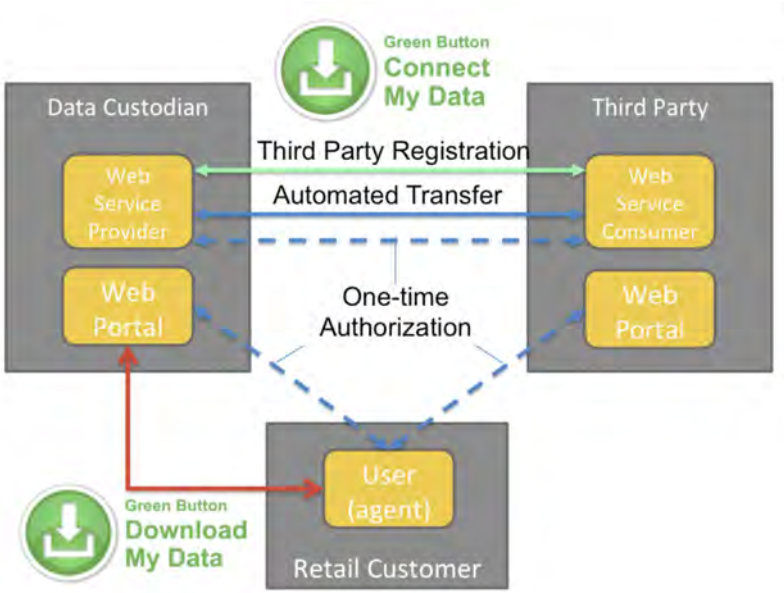
The Data Platform consists of three core components:

- The **Platform Hub**, which serves as the single entry point for requesting and receiving customer specific data, as well as data aggregated by municipality and customer class according to pre-determined privacy and aggregation standards.
- Utility-specific interfaces (**Utility APIs**), which gather data from back-end customer information systems and normalize the data into a common model and format to send to the **Platform Hub**.
- The **Logical Data Model**, which defines all data fields that the platform provides and describes how those fields map to the Green Button standard.



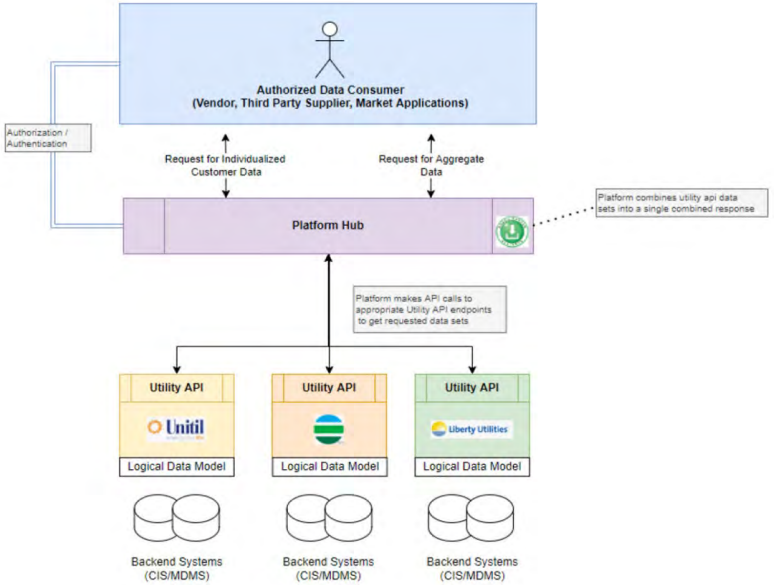
# An “API Centric” Model

- The team made a decision to design the platform around industry standard Application Programming Interfaces (APIs).
- Green Button Connect is the API standard that will be leveraged for the delivery of customer specific data from the Platform Hub.
  - This allows for a standardized programmatic approach for consumers to interact with the platform, provide authorization and authentication information and securely request and receive data with minimal manual intervention.
- Authorized requests to the Platform Hub are sent to utility-specific interfaces (APIs), which gather data from back-end customer information systems and normalize the data into a common model and format before securely returning it to the hub.
  - We call this our “API of APIs” approach
- Data is stored in the hub only for as long as needed to perform processing, aggregation and performance based caching.



# The Platform Hub

- Central web portal for third party registration and data access.
- Implementation of the “API of APIs” which will allow for a single access point allowing authorized third parties to programmatically request multi-utility customer data.
  - These requests to the “API of APIs” are then “delegated” to the Utility APIs for the retrieval of individual customer or aggregated customer data. Then the Hub returns the resulting standardized data set(s) and/or any error messages to the Third Party.
  - The “API of APIs” is responsible for combining individual utility data sets into a single combined data set for delivery to the authorized third party.
- Centralized customer access point to provide authorization.
- Data Aggregation functionality (combining data sets, applying privacy considerations, etc.).
- The Platform Hub will also serve as the central repository (“Landing Page”) for hosted content and links.
- The hub will be certified by the Green Button Alliance.



# Data Model “MVP”

- The customer specific billing and usage data provided by the platform hub is initially constrained to the fields defined in the minimum viable product (“MVP”) version of our Logical Data Model
- Logical Data Model provides a common data dictionary for the platform, allowing all participating utilities to provide the same normalized data even though their backend representations may be unique.
- Defines how these fields map to the Green Button standard
- Logical Data Model is defined to be extensible and additional data points will be added over time

**MVP Data Fields for Logical Data Model**

| Billing Data Fields | | | |
|---|---|---|---|
| **DE19-197 Field** | **Green Button Location** | **Enumerated / Allowed Values** | **Example** |
| Account Number | Retail Customer Schema > CustomerAccount | | 1089999 |
| Premise | | | |
| Customer Name | | | Bob Smith |
| Customer Email Address | | | smith@mail.com |
| Customer Phone | | Home / Mobile / Business | |
| Account Address | Retail Customer Schema > ServiceLocation | This should be multiple addresses: Contact and Service | 123 Main Street, Salem NH 03079 |
| Customer Rate Code | | | D1 Res |
| Meter Number | Retail Customer Schema > ServiceLocation > Usage Point | | 234433 |
| Meter Reading Previous | | Register Read End KWH or KW at end of cycle "meter reading previous" | 345678 |
| Meter Reading Current | | Register Read End KWH or KW at end of cycle "meter reading current" | 345878 |
| Overall Consumption Last Period | UsageSummary > OverallConsumptionLastPeriod | | 809 |
| Overall Consumption This Period | UsageSummary > CurrentBillPeriodOverAllConsumption | | 784 |
| Billing Period | UsageSummary > BillingPeriod > Duration and Start | | |
| Commodity | UsageSummary > Commodity | Gas or Eletctric | "E" |
| Bill Amount | UsageSummary > Amount | Current bill total | 106.5100 |
| ***Balance Forward?*** | | | |
| Customer Charge | UsageSummary > CostAdditionalDetailLastPeriod (bill line item collection) | | $17.00 |
| Delivery Charge | UsageSummary > CostAdditionalDetailLastPeriod (bill line item collection) | itemKind: 2 Energy Delivery Fee | 0.0233 |
| Stranded Cost Charge | UsageSummary > CostAdditionalDetailLastPeriod (bill line item collection) | | 0.0432 |
| System Benefit Charge | UsageSummary > CostAdditionalDetailLastPeriod (bill line item collection) | | 0.00456 |
| Consumption Tax | UsageSummary > CostAdditionalDetailLastPeriod (bill line item collection) | itemKind 5: Tax | 0.00005 |
| Energy Service Charge Fixed | UsageSummary > CostAdditionalDetailLastPeriod (bill line item collection) | | 0.0823 |
| Quality of Reading | UsageSummary > QualityofReading | 0 - valid<br>7 - manually edited<br>8 - estimated using reference day<br>9 - estimated using linear interpolation<br>10 - questionable<br>11 - derived<br>12 - projected (forecast)<br>13 - mixed<br>14 - raw<br>15 - normalized for weather<br>16 - other<br>17 - validated<br>18 - verified<br>19 - revenue-quality | valid |
| Service Supplier Kind | Retail Customer Schema > Service Supplier > Supplier Kind | Utility, Retailer, Other, LSE, MDMA, MSP | retailer |

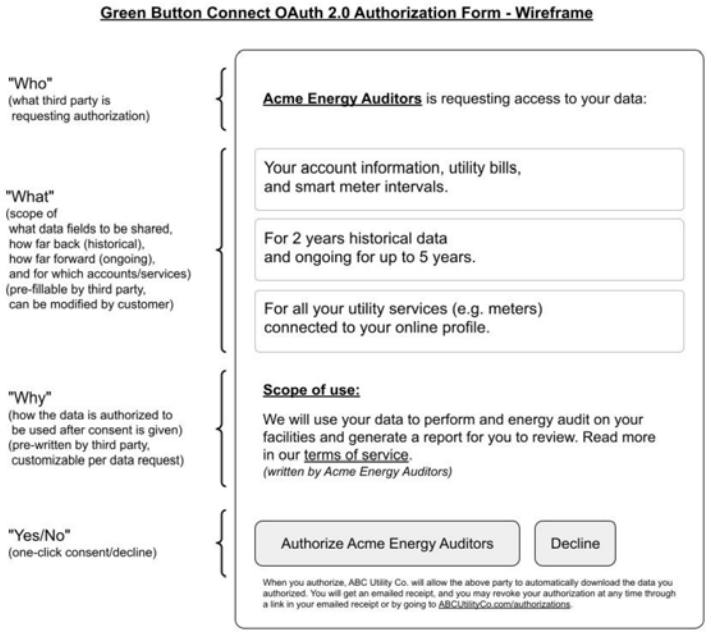
Sample excerpt from Logical Data Model

# Additional Data Considerations

- If available, at least 24 months of historical customer data will be provided by the NH Utilities via their **Utility APIs**.
- Data will be made available by each utility (via their **Utility APIs**) in a timely manner as long as the customer's utility account and authorization remain active.
- Data model abstraction allows for the fact that all participating utilities may not be able to provide every field nor at the same level of "freshness".
  - AMI ready utilities like Unitil will be able to provide 15 minute interval data, while others may only be able to provide daily or monthly data.
  - **Logical Data Model** and **Platform Hub** will handle these potential timing differences.
- The Green Button Alliance does not (yet) have a standard for aggregated (non-customer specific) data. For this class of data, the **Platform Hub** will implement its own model based on a well known file format such as JSON, XML, or CSV.

# Security and Privacy

- Green Button workflow requires the customer to explicitly (electronically) “opt-in” for all data sharing.
- As part of the electronic workflow, the customer is asked to authorize which specific data they are authorizing to be shared, to whom it will be shared, and for what duration.
- The customer can revoke sharing permissions at any time and is reminded annually via email. Authorizations stand for 5 years if no action is taken.
- Data requests and customer authorization are handled securely by the OAUTH 2.0 standard specified by Green Button. This is the same security protocol used by Google and other major industry providers.
- Data is encrypted at all points of the transaction lifecycle



# Aggregation Assumptions

- Usage data aggregation granularity will be at the town, state, and/or customer and/or rate class level.
- Aggregated data files will contain *anonymized* usage data only
- No information that can tie usage back to a specific customer (Account numbers, names, locations)
- The Platform Hub will support two levels of aggregation thresholds:
  - A minimum of 100 or more customers per data set without a contractual relationship
  - OR a 4/50 rule wherein there are a minimum of 4 customers and none which account for > 50% of the overall aggregated data.

# Platform Users

- Platform users (data consumers) will register into one of four risk based categories:
  1. User of anonymized and aggregated data or municipal-level energy usage data No customer permission required.
  2. User with customer permissioned access to fewer than 100 customers' data at any time.
  3. User with customer permissioned access to 100-1,000 customers' data at any time.
  4. User with access to greater than 1,000 customer records at any time.

- Platform users consuming customer permissioned data must complete a cybersecurity questionnaire.
- The council has 35 days to respond to the applicant with notice of approval or rejection.

# DataGuard Privacy

- Platform Hub users must be a signatory to DataGuard
- DataGuard is a voluntary data privacy program started by the DOE for any company handling energy use data.
  - https://www.smartgrid.gov/files/documents/DataGuard_VCC_Concepts_and_Principles_2015_01_08_FINAL.pdf
- Platform Hub users shall provide annual attestations that the submitted controls substantially still exist.
- Platform Hub users receiving non-aggregated customer data shall be required to implement the Cybersecurity Risk Management Program provisions of DataGuard Section 4(a)-(e).
- Customers shall be provided annually a report of who has been approved to access their data and informed how they can make adjustments if desired.

# Platform User Stories

The NH Data Platform was designed from the beginning to serve numerous use cases and stakeholders, whereas other efforts have often focused only on smart meter data.

Examples:

- A customer wishes to share his/her historic or ongoing energy information (usage, cost/billing info, etc.) held by a utility with a Third Party (any non-utility entity such as DER, CPA, non-profit, competitive supplier, etc.) in order to determine whether a certain service is a good fit for the customer. For example, this could include sending energy information to:
  - a rooftop solar provider for getting a price quote
  - a competitive supplier to receive a price estimate
  - to a storage provider to determine the appropriate size of behind-the-meter battery storage; and many other examples…
- An individual customer wants to get customized recommendations about the potential energy and economic impacts of changing energy suppliers or rate plans, installing PV/batteries/other DERs, or making other changes to their energy use.
- A community wants to analyze the options for taking actions to lower costs and/or environmental impacts of all the residential, municipal, and business energy use in their jurisdiction. This process examines the most cost effective options for each individual load shape in the population and then aggregates those options to explore policies at the community level.

# Next Steps

- Work is wrapping up on a PUC ordered review of the utility backend designs and costs for APIs and data mapping

.

- RFP being completed for early 2024 release to solicit a vendor to provide the development and operation of the Platform Hub components.
  - The landscape for capable vendors in this area has improved significantly over the past few years. Whereas Smart Meter Texas was a custom built platform at considerable expense, the risk of custom software is no longer present thanks to commercial developments and downward price pressure in cloud computing and utility/DER integration platforms.
  - The project team has already received responses from over eight (8) potential software vendors in response to an RFI for the Platform Hub and we are able to select for attributes such as platform maturity, track record and technical support offerings rather than assessing software developments capability in a purely hypothetical sense.

- Work is underway on a grant proposal for GRIP funding that could both help to buy down the price of the platform and also enable additional functionality.

- The design and standardization of data here could be leveraged regionally. New Hampshire utilities also operate in nearby states such as New York, Massachusetts and Connecticut, so our common data model would ensure that regionally-deployed DERs such as smart thermostats, EV chargers and behind-the-meter batteries will be able to re-use their software infrastructure in neighboring jurisdictions if and when the Data Platform is more widely deployed.

# Questions?

Jeremy Haynes
Director, Enterprise IT
Unitil Systems
haynesj@unitil.com

# Discussion

30 minutes, Jessica Ralston

# Planning for Next Meeting: January 30

EDCs, 20 minutes

- Customer Education and Engagement (excerpt from a previous slide titled “Proposed AMI Stakeholder Group Schedule”

  - No core system implications;

  - customer engagement platform SOW tentatively targeted for late 2023, with business requirements to be defined in 2024

# Thank you

If further information is required, please contact:

Renee Hoyos
Principal Consultant
Impact Assessment & Environmental Justice
865.607.6618
Renee.hoyos@erm.com

ERMAMIStakeholdergroup@erm.com

# AMI Stakeholder Group Meeting Minutes

## January 30, 2024 | 1:00-3:00 pm

**Attendees:**

**ERM Representatives:**

| | | |
|---|---|---|
| Renee Hoyos | Madison Weaver | Sarah Barreca |
| Emma Jablonski | Liz Valsamidis | |

**Participants:**

| | | |
|---|---|---|
| Amy Sarcia, National Grid | Aurora Edington, DOER | Bernetta Morton, GoMortonGreen/BeMoreGreen2 |
| Bill Cleary, Oak Bluffs Energy Committee | Brett Feldman, RI Energy | Brian Beote, Low-Income Weatherization and Fuel Assistance Program Network |
| Chris Dube, Unitil | Chris Modlish, Massachusetts AGO | Danielle Winter, Keegan Werlin |
| Domenic Chiavone, LPA Lighting Partners | Daryush Donyavi, Northeast Utilities | Denise M Magaldi, Eversource |
| Elisa Grammer, Green Energy Consumers Alliance | Greg Geller, Stack Energy Consulting | Gregory Caggiano, Franklin Energy |
| Jaden Crawford, David Energy | James Collins, ABCD | Jamie Goudreault, Unitil |
| Janet Besser | Jared Lawrence, Eversource | Jen Watters, National Grid |
| Jenn Drew | Jeremy Haynes, Unitil | Jerrylyn Huckabee, ENE |
| Jessica Chiavara, Eversource | Jessica Ralston, Keegan Werlin | John Holtz, Green Mountain Energy |
| John Howat, National Consumer Law Center | Josh Keeling, UtilityAPI | John Prusinkski, Berkshire Environmental Action Team |
| John Schatz, TXU | Josh Pasquariello, National Grid | Justin Eisfeller, Unitil |

| | | |
|---|---|---|
| Kristinia Montgomery, VistraCorp | Kyle Murray, Acadia Center | Leah Gibbons, Stack Energy Consultants/NRG |
| Lindsay Griffin, Vote Solar | Lisa Morgera, National Grid | Lou Sahlu, Mass DOER |
| Luis A Pizano, Eversource | Mamadou Balde, All In Energy, Inc. | Mariel Marchand, Cape Light Compact JPE |
| Mary Quan, Eversource | Mark Lambert, Unitil | Mary Wambui, PUOA |
| Matt Motley, National Grid | Michael Murray, Mission Data Coalition | Michael O'Brien Crayne, Rhode Island Energy |
| Michael Vecchi, Landis + Gyr | Nathan Holmy, National Grid | Nick Corsetti, National Grid |
| Oliver Tully, Acadia Center | Pat Taylor, Fitchburg Gas and Electric Light Company (Unitil) | Patricia Baumer, Greater Boston Real Estate Board |
| Penny Navarro, Actual Energy | Peter Armstrong, Retired ME Professor | Renee Addario, National Grid |
| Riley Hastings, Eversource | Rosemary Wessel, Berkshire Environmental Action Team | Samantha Caputo, Oracle |
| Shamus O'Brien, Eversource | Sheri Wiegand, TXU | Timothy Newhard, AGO |
| Thomas Beausang, WideSky | | |

**Agenda**

1. Roll Call/Administrative items (5 min)
2. NRG Presentation on Experiences and Best Practices with AMI Deployments in Other States (10 min) (Leah Gibbons, NRG Energy)
3. Final Follow-up Opportunity: Data Access, Stakeholder Consent, and Third-Parties (15 min) (EDCs)
4. Unitil and Eversource Presentation on New Hampshire Governance Concept Paper Status and Schedule (Justin Eisfeller, Riley Hastings) (15 min)
5. National Grid Presentation on AMI Customer Education and Engagement (15 min) (Nick Corsetti)
6. Eversource Presentation on AMI Customer Education and Engagement (Jared Lawrence) (15 min)
7. Unitil Presentation on AMI Customer Education and Engagement (Mark Lambert) (15 min)
8. Discussion (20 min)
9. Planning for next meeting (10 min)

## Meeting Summary

### Roll Call and Administrative Items

Renee Hoyos welcomed stakeholders to the meeting, reviewed the agenda and ground rules, and did a roll call of organizations. Renee also requested stakeholders submit their names and organizations to the chat log to record new attendees. Renee introduced the first presenters.

### NRG Presentation on Experiences and Best Practices with AMI Deployments in Other States

- L. Gibbons: Thanks for having us. Thank you for the opportunity to share NRGs perspective on the importance of AMI and interval data and value it provides. As Director of Regulatory Affairs at NRG, I spend my time on policy advocacy and protecting consumers. I have participated in proceedings related to data access. NRG companies are focused on delivering values to customers we serve across the country. We want consumers to take more control of how they use energy and manage their budgets. We are heavy users of AMI data. We look forward to participating in the conversation.
    - From our perspective, the key to unlocking innovation with deployment of AMI is ensuring customers have access to data. There are three key elements. The obvious one is deploying the meters. That opens the door to customers being able to take control of their use. The second thing is that load needs to be settled at RPO using that data. If a customer shifts usage to lower demand time, the supply can also shift to align the economics. One key thing is for utilities to settle their load on based on interval data. When you have shifts in the market, it creates a pressure on those costs. The third piece is the near real time data access. That is essential. It allows all participants in the market to educate and engage customers on how much they're using and spending at different times of day. Today they see their bills 30 days after the fact. We need to communicate in real time so that customers can react. We need all of our customers' data, every day, all at one time with sufficient granularity. Getting down to the watt allows us to communicate with our customers.
    - When we talk about real time access, it's 48-hour data. There's a need to validate and clean up data, but that technology is also evolving. There might be a time in the future when it can cleaned up and shared faster. In terms of customer authorization, we agree that customers own this data and have the right to grant access to it. We've seen that usage data authorization is a standard term in most retail supply contracts. It's really something that the customers grant suppliers access to (the data) at the time they enroll, which I think works really well.
    - The other thing that I've noted here is, so this is this flat file data access that we talked about and that we really need. That's one way. It's not the only way that data access can be provided, and I think y'all have been talking about green button. And then there's EDI. And so those are really kind of the three big ways that that data access is provided to the market and all three of those have potentially unique uses. They're not mutually exclusive, but from a retail person for suppliers' perspective who are serving thousands or maybe even tens of

thousands of customers, we have found that a flat file formatted data file with hourly data for all the suppliers' customers is essential.

- To give a sense of AMI data in other markets, this is high level snapshot. It's really the states I'm most familiar with, from the work I've done in the past, but really you have primarily here mid Atlantic if you count Ohio stretching over into that region. The big picture here is that the commissions in these states direct the utilities in these states to make data available via secure portals. In Ohio, they're still in discussions but they're well down the path. The cost associated with making all that data available, we're recovered through base rates or AMI writers as part of those AMI deployment plans. And so, through all of these jurisdictions, suppliers have access to their customers 48-hour old interval data every day. All at one time with low level precision. Many of the utilities, but not all of them, are calculating PLC's and setting ICAP tags and settling load based on that data.
- There's a little work to still be done, but there's great access and the data is flowing well. One thing we've learned is that it's important to work on the data access issues early in the process, so that the utilities have their systems open and they're working on deployment and rolling out the AMI they can and make all these program changes to implement this all at the same time. It's a lot more cost effective.
- In Pennsylvania, we found that as utilities activate those meters, making it available to suppliers works well. FirstEnergy did a good job as they rolled in over time. It essentially allowed us to test how the data was coming out. For timing, it's helpful to make data available early in the process so suppliers can build out their systems, test, and get familiar. The sooner we can get the data, the sooner we can figure out how to get it in our system and offer innovative products and services.
- This is an example from FirstEnergy utilities in Pennsylvania. This is an example of what the file format looks like for the data they provide to retail suppliers. This is a supplier portal that existed pre-AMI predated data access but a supplier portal where suppliers can log in with secure credentials and they can get data on their customers exchange files. Each day the utility loads a file to the portal. It's basically this nice place where we can go access information, so they've taken those portals that already exist and they've created this flat file, the CSV file format, and each day the utility will load a new file or set of files into that portal, and each day the suppliers can go in and download those. We always know what time of day these file transfers happen and so we program our own systems to go in and grab it. The file includes a rolling 10 days' worth of data, so each day there's a new day added and each day the oldest day drops off and you can see here if you can.
- I'm not sure how it's showing for everybody, but essentially what it includes is the customer numbers - utility account numbers, meter numbers and any multipliers that are needed and then the kWh data for every interval for every customer account. So, each row is a new customer, and each column is data point and so here you see they've got a couple different file samples. They've got 15-minute data available and then the hourly says that that's available.
- These are relatively simple for the utilities to set up, and then it can all be automated so there's no need for manual intervention. And suppliers can

automate their systems to grab the files. “StS” means System to System. All the utilities in Pennsylvania were mandated to provide the solution in addition to other solutions for data access. So, the Pennsylvania utilities, for example, also have an API solution where you can pull one or two accounts or 10 accounts or 100 accounts at a time. But they also provide this format. The NRG companies have been accessing these in PA and MD for the last five years if not longer, and it’s worked very well with the exception of a few hiccups. We’re able to take that data and turn it around.

- And as I said at the outset, the first step is really engaging and educating customers and providing them with the information in a quick and convenient and easy to understand way. You see that reflected at the on the top part of this chart, we do weekly email summaries to customers. We have our own web portal that customers can go in and see what their data looks like in our Texas market. We have Google Hub which customers can talk to, and it'll pull up information about their usage in real time. We can also do mobile alerts, whether it's high use or high bill.
- Customer can set their preferences up and then once you get them engaged and get their attention, then you actually have the ability to offer them more choices that builds on that new knowledge that they have, whether it's a payment plan, free nights and weekends, something like that or some other value-added product or service through a partnership. And then they keep building. You keep going around the circle and they keep building their experience with more informed and engaged customers. Then you really do have a platform from which you can take things to the next level and offer even more innovation, whether it's EV, demand response, smart appliances. It's an evolving market and who knows what's going to be on the horizon. We have a smart house in downtown Houston and we use it to test new technologies and in-home applications. We’ve been experimenting with solutions for ten years, and we’re excited to be able to deliver value to MA customers. Happy to answer questions.

- Josh Pasquariello: I know you mentioned a flat file is the best way to exchange this information here. Has this information also been exchanged via EDI, and if so, what kind of changes to usage transactions needed to be implemented to prepare for that?
- L. Gibbons: EDI is absolutely another means for transmitting the data. We use it as well. There are certainly EDI transactions where you can go and pull 12 months’ worth of interval usage data through EDI and we definitely do that for accessing usage for potential prospects for commercial and industrial customers. So, if we want to bid on and price out a customer in the commercial industrial space, we will use EDI to pull that data. I'm not sure exactly what's involved in doing it, but we do have those transactions and we use them daily. I think as I understand it from our technical and IT folks, it's not got the ability to handle the levels of transactions that we're talking about. It's a lot of data, so I think it's our need to get it so quickly.
- J. Keeling: Thanks for the presentation. A lot of the comments about the preferred approach referred to the business process, latency, frequency, etc. but don’t seem specific to the flat file approach. What is it in EDI or Green Button Connect where you took a different approach?
- L. Gibbons: For us, we’re serving residential customers. We use other API solutions, not Green Button Connect. There were other API solutions, and because we have so many

customers, we have crashed systems. It creates such a volume of request for that data. Even in Texas, where we serve 2 million customers with Smart Meter Texas™, even in that system we're pulling CSV files every day because it's faster and easier. We're talking about millions of customers of hourly and 15-minute data. It's the easiest way to do it. We provide Green Button Connect to customers in Texas, so we're familiar with it. As I understand it, it does not have the ability to handle the level of transactions we're talking about. We came up with a process in Pennsylvania with this flat file approach, and people agreed it's an easy way to pull that amount of data. From a utility perspective, it wasn't too tough to put together. It's not to suggest that the other solutions also aren't necessary, we need EDI too. It's just because suppliers need to transact with the utilities already, it creates another way of pulling data.

- J. Keeling: I don't disagree with those examples. We have good examples in California where we have Green Button Connect platforms that are performing daily transactions for hundreds of thousands of endpoints. So, it's certainly feasible and your point is well taken on the need for very clear performance standards and design in whatever method is taken, because we have great examples across the board on all these standards of cases where we clearly did not either design the systems appropriately for the use cases or are just not enforcing the requirements that are necessary for those use cases on an ongoing basis. So, really important moving forward. Thank you.
- J. Haynes: Josh touched the point I was going to make, that in New Hampshire we've thought a lot about that problem - throttling, rate limiting, making sure that our customers are consenting. My question was if that was something you had considered as far as limitations go. Is that something that your participating utilities have considered, incorporating limiting or rate throttling to use the flat files?
- L. Gibbons: In the markets where I've been active in Pennsylvania, Maryland, DC, Delaware, where we all have the CSV file format for some from a retail supplier perspective now, that is the solution. That's one of the solutions that the suppliers use. That's not to say that they don't have their API solutions that provide access in other ways. If we're using data daily and sending customers emails on weekly basis, throttling is not an option. We've gone to the flat file solution to avoid those issues. The consent piece, that's important. The commissions in the states that have implemented already, we talked about consent in all those cases, and I think from a retail supplier perspective, it's acknowledged that it's part of your enrollment process, right, and you're collecting consent at the time of enrollment. If I'm pulling data from the utility or even if I'm submitting an enrollment for a customer to enroll and switch service, there's an acknowledgement there that I have consent, right? And so that's sort of how it works, I think for other third parties that are trying to pull data, there's clearly got to be some other mechanism for capturing that consent. But at least from the retail supplier perspective, that's how it works.
- J.Crawford: Thanks for the presentation. I want to mirror what you said about flat files and means of access. I think a point of comparison in these is New York. We do connect to that via an API for certain things, but we have found that when we're talking about transactions, especially with billing for settlement, we end up pulling those flat files directly from the consumer choice action where we're able to get more of a transaction grade data. We have found discrepancies between the Green Button Connect and the other data sources, and so I think some important things to think about with Green Button Connect is that it can be set up to be very reliable, but it has to be set up

specifically because Green Button Connect is set up for access by third parties that aren't set up to transact with utilities as a load serving entity. The quality of those data sets and the volume that we need them, I'm echoing what we're saying from the perspective of another supplier that this is a critically important issue.

- J. Haynes: These are not limited to Green Button Connect. This applies to any software. This is not a Green Button Connect issue, it's protected software issue.
- J. Crawford: [inaudible] I'm speaking specifically as an LSE, right as a retail choice supplier versus as a third party. It's a third-party demand response aggregate.
- J. Haynes: These green button implementations are relatively new compared to how long EDI's been around, right? So, I think as the implementations mature a lot of the concerns that you expressed will work their way out. Folks are thinking about these things at the outset. I think all that will help some of the things that you've described.
- J. Keeling: I think you're going to see that particularly when, for instance, an IDR, where you'll have a statewide platform that's used for a wide array of use cases across all the utilities under pretty regular basis all through green button connect. Just echoing Jeremy's point here as well.

**Unitil and Eversource Presentation on New Hampshire Governance Concept Paper Status and Schedule (Justin Eisfeller, Riley Hastings)**

- R. Hastings: We've been working since just before COVID, so over 4 years, on a project for New Hampshire energy data platform. As part of that process, we realized it could be helpful to have grant money to support that project. We're going to discuss a grant concept paper.
    - The agenda today, we're going to talk about the grant concept paper, the grant overview, the technical specifications, community benefits and risks, and the project implementation schedule. What is a GRIP grant? It's Grid Resilience and Innovation Partnerships US DOE grant program. There are three topic areas that fall under the GRIP umbrella. This specific energy data hub platform is under topic 2, Smart Grid projects focused on innovative and ambitious uses of cutting edge, market ready technologies. These technologies can include new devices, materials, engineering designs, or software tools. So obviously this energy data hub would be under the software tools category and priority investments related to this project include enhancing interoperability and data architecture of systems that support two way flow of both electric power and localized analytics to provide information between system operators and consumers and allowable investments include the purchase cost of the software, the expenditures for purchasing, installing such equipment that allows smart grid functions to operate and be coordinated among multiple electric utilities in between the region and other regions and documented purchase costs of data analytics.
    - What specifically is this grant proposal? This came out of New Hampshire. This is phase two of this grant. We submitted a concept paper for phase one for just New Hampshire data hub. When we attended the session for phase two of these grants, they were expecting minimum grant size of $10 million. So, our group was figuring out how we would reasonably make use of $10 million, so we've changed to a regional approach and reached out to other states in New England.

Later, we'll talk about who the regional partners included in the concept were, but preliminarily we're planning to request 14.5 million in grant monies and some of this money would go to reducing the cost to ratepayers for a platform if it were to be built and the grant requires a 50% match from participating companies. So, this implies a total project size of $29 million shared across the regional partners that will be explained later.
    - The monies are expected to buy down the platform and assist with project offerings. Some of those project offering include services provided by partner organizations to provide benefits to customers and invest in community outreach, education, etc., have parties be able to pull energy data out of the platform, and providing municipal benefits, particularly for Justice40 communities. Regardless of the grant money, there would be benefits for customers. Our hope is that there will be greater benefits and those will be seen more quickly if we had the money.
    - And with that, I will pass it on to Unitil to talk more about the technical specifications of the platform.
- J. Eisfeller: Thank you, Riley. Good afternoon. I'm from Unitil and as Riley had said, I've been involved in the efforts in New Hampshire from the start. We started back in 2016 working on this. So, it's been a concept for quite a while. And it's finally making progress.
    - This slide is the actual platform itself, I think you've had two presentations on this already from Jeremy. The energy data sharing hub is one aspect. Here it's represented as three utilities sharing data, since it's based in New Hampshire. It all starts with our back-end systems that store the usage internal and customer information data. Some utilities may have to make changes to share the data discussed here. The next component is the logical data model, which was agreed upon by the various stakeholders in New Hampshire, and it identifies 33 data fields and the formats for sharing that data. Each utility will provide data in those formats if available. Unitil plans on leveraging a Green Button Connect API to both share directly to customers at the utility level, as well as to pass back and forth the information necessary for the hub. I would expect that the other utilities will do something similar, so the expectation is that the utilities can share data directly as part of their services, but also share it through the hub.
    - The hub is designed to provide both customer data and aggregated data, and the aggregated data has been specified already in the settlement agreement. In New Hampshire the customer data being provided will be provided via Green Button Connect functionality, which would provide an interface with the authorized data consumer to seek approval for sharing of the data as well as get access to the data itself through APIs.
    - So that's the basic design of the platform. There's a lot more to it than this. You heard some of the discussion earlier about throughput and design details. That is all being contemplated in New Hampshire as well. I would say that we've got a variety of stakeholders involved in that design and many of them have used Green Button Connect and expressed some of the same concerns that we heard earlier.
    - These are the components described in the concept paper. You submit a concept paper, which is a high-level description of what you propose to do and what you're seeking to recover. The first item is the hub. The second is the third-party registration process which does include a security assessment, Green

Button Connect, and how data is structured in the platform. The next component was utility specific integrations and as I had mentioned, there's expectations that there's work on the back-end systems and then integration component and potentially the normalization of data to fit the data model and the logical data model itself. We provided details on the 33 data fields and how we expect to use that common approach. And then the last component, which is new, this is something that we had not included a lot of detail in our previous concept paper submittal, which is the Community dashboards and further leveraging of the hub for providing services and community outreach.

- This next slide highlights the benefits. As part of the New Hampshire effort, the governance council solicited a report on benefits for the customer base. We hired Dunskey consultants, leveraging a report on Green Button Connect. They did surveys of the various customers and, umm, various use expectations of the platform and are providing us a model for benefits which we expect to combine with the cost to provide the Commission and New Hampshire a cost benefit study and in order for them to make the final decision on implementation. There is an expectation that the benefits are achieved over a period of time. Our expectations with the grant is to expedite the platform. A lot of money will be spent on customer education services, to customers and outreach and community involvement. We're trying to achieve 10 years in 5 years to pay down the platform cost as soon as possible. That's the main objective of the grant.
- We've got four utilities who have agreed to support this effort. I expect additional support if the DOE supports the proposal. We expect within a month or two whether we are encouraged by the DOE to proceed. We already started to reach out to hub vendors. We had an RFI process a year ago where we solicited initial proposals on building on the platform. We're using that as input into the RFP that we expect to release shortly, and we've also had a lot of interest from communities like those that are participating in this call.
- As Riley mentioned, a big part of the plan is the community benefits plan to expedite the platform and provide benefits. We're going to reach out and work with vendors and communities to raise awareness and use of the platform, as well as provide services for that use. Various partners to date that have shown interest are listed below and we would solicit further involvement as well as part of the grant process and the concept paper.
- As part of the grant process, you're required to list various risks. The top three risks are regulatory risks, this is potentially a growing risk as more utilities participate. We will be reaching out early and often to inform the commission of the approach. The more utilities, the more complex it will become. Initially we have to establish an efficient and effective way to communicate and make decisions. We expect to leverage the approach that we started in Hampshire, which is a stakeholder-based approach. There's a governance council with established rules and decision making. We expect to extend that same approach with some type of program and change management working group to incorporate the regional players of interest.
- The third risk is technical execution. This is a software project. There's some complexity and the more components that we have, the more utilities we add, it introduces additional costs and uncertainty. The good news is that the design is

well underway, and it is agreed upon that the RFP is just about done. We've incorporated feedback and input from a variety of stakeholders and utilities. And we've had consultants involved in the discussion of the design and the review of the RFP and the review of the back-end designs so we're getting educated feedback as well.
    - Here's the timeline of the proposal. We partnered with West Monroe Partners to facilitate the proposal. They're going to be setting up all the meetings for the regional discussions, setting up vendor calls, which will be a big help to utilities. I think there's a fair amount of effort already just attending all those discussions and so having someone to facilitate that will keep it on schedule and keep things moving and allow us to accomplish a lot in the next few months.
    - We're first going to seek to get agreement on the planning and governance approach and we need to be able to make decisions quickly, that's something that I expect that we're going to do in the next few weeks. Everyone has already begun discussions with their various regulatory agencies to raise the awareness of what we're doing and to start the approval process. I expect that we'll start the coordination work with West Monroe in late February and proceed on with the schedule that they've highlighted below. This is actually their schedule that they have proposed with the various work streams, and the plan is for them to facilitate those work streams and the development and writing of the proposal. The proposal deadline is May 22nd, so there is some time, but it'll be a lot of work between now and then.
    - This is the expectation for delivering the project, with years 1 and 2 on building the platform, and years 3 and 4 on deploying the functionality.
    - Any questions?
- M. Behringer: It seems like the key if the main goal is the central hub, will there be any other components or partnerships kind of developed beyond the community side? I assume all the utilities have the same or at least some form of baseline AMI, for example to kind of generate and gather that data. Or how does that work?
- J. Eisfeller: It's a share-what-you-have-available approach. There is interval data from all utilities, but that's primarily from the commercial/industrial side of things. Unitil has an AMI system. I would say we have interval data for about 15% of our customers in New Hampshire outside the commercial/industrial, so that'd be residential customers. There are some customer types where we have some interval data available and we're migrating to interval data for all of our customers in the next couple of years. So, on the timeline that this platform is released, we'll have AMI or interval data for all of our customers and all three states. I should also state that this is also gas utilities as well, so we plan on providing our gas information via the platform as well. So, gas customers would have access to whatever data is available. There's not a requirement that you have AMI to participate in sharing data by the hub. You can share monthly read data and billing data without the need for AMI systems.
- M. Behringer: Thank you.

**National Grid Presentation on AMI Customer Education and Engagement**

- N. Corsetti: I joined our Massachusetts AMI team in November as Director of Customer, Community, and Regulatory Engagement. One or two quick points, National Grid is in a

unique place because we piloted AMI in other locations, so we're continuing to incorporate lessons. We are open to feedback from stakeholders here today. Open to having discussions and recognize there's a lot to learn.
    - Our overarching strategy, or our mantra internally is listen, test, learn. We're all about iterative feedback and there is a massive awareness campaign we will do before deployment. We're in a unique position to learn from our counterparts in New York across all the topics covered today.
- Jen Watters – as we refine our communications from Massachusetts, we're really building on the strong foundation of lessons that we learned in upstate New York and we're further validating our approach to really ensure that it aligns strongly with Massachusetts needs and perspectives in upstate New York.
    - We completed extensive research to inform our communications design, including interviews, focus groups and testing with our customer council. These efforts include feedback from seniors, income eligible customers, and other sensitive populations. We learned a lot to build trust and gain buy-in. These lessons were baked into our communications and in upstate New York, we continue to learn and evolve our materials through a series of customer experience surveys. In Massachusetts, we plan to take a similar listen-to-learn approach, starting with research through our customer panel and focus groups. In addition to general population, we'll make sure EJ populations are considered in these efforts.
    - As smart meters are rolled out, we will pay attention to their knowledge. Prior to communications, 1-2 months after meter installation, and long-term tracking. In New York, we're seeing good indications. In addition to general population, our research plan will enable reporting on LMI customers and EJ communities. That's our research plan in a snapshot.
- J. Huckabee: Could you explain a little about how you're defining EJ communities in your territory? There's a lot of conflicting definitions and I'd like to know how you're defining it
- J. Watters: We are going off the definition from the state of Massachusetts.
- J. Huckabee: There's a different definition from state EJ office and the energy efficiency investment plans.
- N. Corsetti: These align with the metrics that the DPU has asked to track along the way. The definition they directed us to is on the mass.gov website, so whether it conflicts we can't speak to. It is on the mass.gov website.
- R. Addario: We're leveraging the communications flow we used in upstate New York with a 90, 60, and 30 day approach. So, 90 days before we installed the smart meters, customers are going to see broad based mass media in their region. This includes tactics like radio ads, digital billboards, bus wraps, and more. 60 days before installation, customers will start to receive a direct mail letter and an email telling them that we're coming. 30 days is a bill insert and robust welcome brochure with lots of details about what to expect on Installation Day, has benefits of the smart meter, and lots of FAQs, as well as an email or a letter where they'll have access to an overview video about our smart meter plan. 10 days before install, they'll get an alert based on their communication preferences, and on installation they get a door hanger letting them know that their install has taken place and where to go if they have any questions, we'll send a post install, follow up letter as well as ongoing education and communication materials.

    - After, in addition to direct Communications, we're also going to be out in the communities with the display set up at public events, organizational events or at partner agencies where we'll have collateral materials for customers and an AMI subject matter expert who can answer any questions that they may have.
    - As Nick and Jen stated, it's important to us to continue to cross promote and communicate our bill help program offerings to those LMI and EJ segments and all of our marketing materials, which will also be translated accordingly based on deployment area demographics.
- Sarcia: I'm excited to share information about the AMI powered features we've made available to our Upstate New York customers to provide them further insights into their electricity usage. The aim is to provide Massachusetts customers the tools we offer in New York. Three tools are the gird customer web portal and mobile app. The near real time gives customers 30-minute data, as well as highest energy use days which depicts the calendar month and the pink circle with the highest usage, which will bring up their electricity over the course of the day. Next is Green Button Connect where customers can download data in a spreadsheet. We are also delivering data directly to email inbox with a summary of electricity usage and tips for reducing usage. The high usage alert on bottom left is only emailed to a customer if that customer is trending 20% or more compared to the year prior. We're in the midst of making real time load disaggregation available. We plan on enhancing the current Green Button Connect with AMI data.
- M. Murray: Is there a cost to the customer for the disaggregation services?
- Sarcia: No, the cost was included in the DPU-approved plan.
- P. Armstrong. Following disaggregation, what level of disaggregation customer can expect?
- Sarcia: Are you asking how quicky it can be seen on the mobile app?
- P. Armstrong: I guess that's part of it. I have only heard about customer access to 15-minute and 60-minute meter data; we had to use much higher time resolution when testing disaggregation processes to make a summary of what appliances, etc. were operating at any time.
- Sarcia: I'm not sure if I understand your questions. The disaggregation on the mobile app is close to real time. It's not just a total load disaggregation, it's broken down by appliance. If you have an EV, you can see how much you're using by watts. The more time the customer spends with it, the more specific it gets.
- P. Armstrong: I'd love to get some links to more information on accuracy.
- K. Murray: Thinking practically about using this, let's say a customer switches from gas infrastructures to heat pumps. Would they get constant emails about their use increasing? Or any large electric addition to home.
- Sarcia: They're limited to once a month, so the customer would not be bombarded. I can look at it more too to see if there would be subsequent months or how often that frequency would occur.
- L. Sahlu: I'm referring to slide 5 on the pre-deployment baseline survey. That is slotted for June 2024. I'm just curious if you'll be able to do all the survey and get the results from the survey and be able to go forward, incorporate whatever lessons learned from the survey as scheduled here. The 90-day deployment starts July 24th, so what is the plan in terms of having the survey collect the service and get the results for the service

and incorporate through the deployment going forward which you have sufficient time to do that?

- J. Watters: The timeline is an example. We are going to be doing research through a customer council and focus groups ahead of time, so those will be folded into the communications plan. The pre-deployment survey is primarily around awareness, so the plan is primarily to have insights from preliminary research activities and information from NY.
- N. Corsetti: Under your timing question, that will take time and might be learn-as-you-go. We've executed the same cadence in our New York jurisdiction that Jen just described and that has worked just fine. We have the right amount of time and bandwidth to incorporate learnings as we as we receive them, even for awareness as we finalize communications materials and start the personalized outreach to customers. We don't have concerns, but we're not deploying all of our meters in July. It will be a small test sample, much like the approach you took in New York, and that will grow over time and our learnings will reflect where will reflect and be integrated into that accordingly.
- L. Sahlu: So are you saying that the predeployment survey would start way before June 24th, 2024?
- N. Corsetti: Yes, we will have time to incorporate.
- G. Geller: With respect to real time usage and alerts, can you help me understand when that is going to be paired with time sharing rates, etc. If customers get information but don't have a mechanism to act on it, they might start tuning it out. Can you help with how the timing would align?
- N. Corestti: These are new features we want to get this right so we can use internal data out of the box for customers. We are looking at incremental improvements, we don't expect to have full capabilities from day one. And there's also the reality that there is no TBR structure in place either in Massachusetts. So right there are a lot of dependencies, but it will be one step at a time, is how we've been approaching it, and that's how we've articulated our strategy in these sessions to date on this front.
- G. Geller: I can appreciate that. I think to the extent that we can match the two, that's going to help customers act on the data as much as possible. I just get concerned that if we provide them the data without anything to do about it, to change their behavior and realize the benefits of it, that we're going to lose them.
- J. Huckabee: Can I add something on that? So there in the grid modification order, there is mention from the DPU about time varying rates, so they are expecting a docket on time varying rates kind of toward the end of the deployment process for AMI. It's already generally baked into the timeline by the department.
- M. Murray: I'm wondering how customers can share disaggregation data with third parties. If customers were dissatisfied with the app, how would they affect the exchange of disaggregation insights?
- N. Corsetti: We have not fully explored that. We will take it back and get you a response. To be mindful of time, we don't need to finish our slides and happy to give the time back so they have 15 minutes each and we can do follow up.

**Eversource Presentation on AMI Customer Education and Engagement**

- J. Lawrence: We recognize that we are one of the last utilities to go down this journey, so a lot of what we have is similar and I will not repeat everything. To highlight unique

insights, we need to understand where our customers are in their awareness of AMI technology. The takeaway here given high level of unfamiliarity, but that 68% expect a positive experience, offers an opportunity to get insights as we move forward. Similar techniques here in terms of combining insights from our online community as well as in person events particularly targeted our EJ communities where we'll be of course tailing our outreach as National Grid showed, we start with establishing a baseline of awareness and then continuing that level of engagement and understanding where our customers are post installation as well.

- This slide shows the details of our communications plan, we have 90, 60, 30 then 1-day plan. Including letter, email or text, and doorhanger. We will be planning community events to raise awareness and level of engagement. We'll have dedicated call center support to deal with unique issues that come up with the experience of receiving your first AMI meter and all of the questions and opportunities that opens there. There's an art in transitioning from targeted communications. Those customers who receive the AMI meters in the early part of our deployment forward including those AMI messages in our broad kind of mass market communications to all of our customers, once the AMI meters are largely deployed.
- We were asked to tie some connections to our ESMP stakeholder strategies. We just included this to show that a lot of the same themes that we're emphasizing with our AMI deployment are also critical features of our ESMP engagement strategy as well.
- We've kind of broken down our MVP features versus our fast followers based on whether or not they require some buildup of interval usage, data history to provide more valuable insights. The key features of our MVP on launch to be available to all customers in the days leading up to AMI meter. On the day that they receive the door hanger, they'll be able to access features immediately. The MVP includes customer information about installation, the ability to see their near real time usage data, being able to upload it up to that previous day, the Green Button Connect functionality that we've discussed so much today and in previous discussions, will be part of our MVP functionality as well. Just general insights of the usage overall, not really insights related to load disaggregation at this point because there is not robust history on the customer level to be able to start to generate those more detailed insights and inferences about what's happening behind their meter.
- You can see the features we'll be working to deliver – not in the MVP because of the scarcity of resources – but rather a little bit later on into our deployment once those customers who have received those AMI meters have the usage history to drive some things such as the high usage alerts. Our view is that we need to establish a baseline of interval data with a customer so that we can make recommendations to them about how they might want to set those high usage alerts. Those usage insights that are included down here that includes a load disaggregation capabilities that were asked about previously when National Grid was talking. So that would be part of our portfolio as well.
- The other thing is the rate comparison tool. We talked about in previous AMI stakeholder group meetings, we expect our TVR capability to be ready for the market roughly a year after our first meters are installed. We don't really see a

need to, nor do you want to confuse customers with a rate comparison tool prior to their being a range of rates to choose from. So, our intention is to kind of hold back that rate comparison capability until we're prepared to accommodate TVR's with our systems and our meters.

  - This is a few snapshots of some of the widgets that will be associated with our customer engagement portal because we are in the early stages of design with our vendor partner. These were borrowed from some of our vendor partners and other clients, so this is not necessarily what the Eversource experience will look like. But this is just a snapshot of some of the capabilities and just to give you a high level of the types of experiences that customers will have in the Eversource customer engagement portal. I don't know if anybody has any questions for Eversource before I turn it over to Mark.

- J. Huckabee – I may have missed this, but did you say whether you'd be doing any sort of mass market promotion?
- J. Lawrence: Yes, our website will contain a lot of information. Each market we're targeting will receive mass communications by letter, email, and text. That's centered on the zip codes we are targeting.
- M. Marchand: Thanks Jared. I see that Slide 6 refers to third party data sharing and customers being able to authorize a third party to access data via the platform. Following up on the last meeting where we discussed municipal aggregators being able to access interval level data by signing a bilateral agreement with the utility, I wanted to confirm that was still the case and that each customer of a municipal aggregator wouldn't need to provide authorization for data sharing through this platform.
- J. Lawrence: As long as [the requesting entity] is a DPU regulated entity with a bilateral agreement, they would be allowed to have access to customer data within their aggregation, unless the customer opts out. While we have bilateral contracts with the suppliers, and those agreements include language on customer data protection, we do not have agreements with the aggregators. So we are going to need to draft agreements with similar data protection Ts&Cs for the aggregators to sign. Those Ts&Cs will be generally similar to the data protection requirements in the supplier services agreements, but the EDCs' legal counsel will of course make the final recommendations.
- M. Marchand: It's great if aggregator can get data, but we need our supplier to get the data.
- R. Hoyos directed attention to a question in the meeting chat from N. Seidman: "does Eversource have a rollout plan by geographic area? e.g., what area is going first?"
- J. Lawernce: We have not yet detailed our rollout plan down to the circuit. We plan to work on Massachusetts first then work our way east.
- M. Marchand: Just in terms of the tool, the rate comparison tools, which rates will be available for customers to view on that? Will it be any suppliers' rates or is it just going to be Eversource basic service time of use for regular basic service? You do have any ideas on that?
- J. Lawrence: It is our intention, of course, subject to further design, that any rate that qualifies for rate ready billing would be able to be compared in that rate compression tool.

**Unitil Presentation on AMI Customer Education and Engagement**

- M. Lambert: This is transformative customer engagement. If you've been in the utility business, this is transformative. When we look to connect customers with value-add services and empower them with data, we are also looking at as we deploy AMI systems the opportunity to deploy this intuitive customer engagement hub as well. It will have the ability to see what their bill amount would look like, whether they're on a regular residential plan, an EV, time of use plan, a heat pump rate, or any different rates that are offered to them. Educating our customers on how they can be engaged is a huge part.
    - We're slightly different at Unitil, much smaller customer base. In 2007, we deployed first generation of AMI. We used Landis + Gyr with a power line carrier system. Each customer had multi utility end point. It was integrated to all our major systems and launched us into our second generation of AMI. Grid sensing meters providing analytics in near real time. Since we did an extensive outreach plan in 2006, there's probably nothing more important than to ensure that we educate customers along the way. We plan to do the exact same thing. Our upgrade is going to start in 2024 with our Massachusetts customers through direct mail, email, text message, door hangers, and partners with Utility Partners of America to manage deployment and call center coverage. We recognize that our customer service call center has to help educate. We'll do it in multiple languages to support EJ communities. Almost all of our customers live in EJC communities. As we look at that definition, we went to mass.gov and are using those definitions. We recognize that they need to have the same opportunities to engage with us and we're going to spend a lot of time with our customers.
    - With customer data portal, we have the following features. We intend to continue to build off of these. They can have an interactive usage chart overlaying temperature. We've had a rate comparison tool already deployed, which provides customers the opportunity to see rates offered to them. Green Button Download, Obviously, that we all have access to and all of these will be done or have the capability being done over a mobile application. Just shortly in the second quarter of this year, Green Button Connect and high usage and high bill alerts where they'll get a notification. We're envisioning a mid-billing cycle alert to engage customers and self-serve where they may be compared to other months. We have a roadmap that seeks to change customer energy behavior. It begins with that proactive alert or notification. We can see this opportunity as a customer once they've received this notification, clicking on a hyperlink, it takes some into their own personal journey with their unique behind-the-meter disaggregated load at front and center. AI takes customers through and starts to learn their patterns over time and helps them make better decisions, specific and unique to them. They could purchase products over at a marketplace shop for rate options, DR Programs, EV Chargers and the like.
    - This is an example, our vision of disaggregation and presence detection. Either it's a mobile app or on their computer to help them manage their customer experience as this becomes more dynamic. This deep learning how and when they're learning their energy will help them engage and learn their behavior.
- J. Huckabee: This is not for Unitil. Did National Grid and Eversource make any commitments to offering DR with their AMI investments?

- N. Corestti: We have existing programs, but I don't think we have anything called out with AMI other than trying to integrate the two.
- J.Lawrence: Not aware of any, but I will follow up.
- J. Huckabee: The EEAC made an explicit recommendation to pilot demand response programs using AMI investments. The plans haven't been filed yet, but there is an active recommendation on the table and we expect to see something in the April 30th draft plan.
- M. Lambert: That's what we were looking at too, just looking toward the future as well.
- G. Geller: In terms of process, NRG gave a presentation on access to data, I saw some reference to that in the presentations here. How are we going to address those kinds of issues in this working group going forward? I know we've kind of talked about data access in the past, and now we're kind of talk about customer engagement, but I think they're somewhat connected. How are going to get to consensus?
- R. Hoyos: Do the EDCs have any input? At ERM, our job is to facilitate these meetings. We have a few more meetings to discuss customer engagement and how it is related to data access. As we move forward, we can include some of those elements.
- J. Lawrence: I would say, without overcommitting on behalf of our peers, we are comfortable the details laid out in the framework. I think to the extent that new wrinkles come up, like the flat files that was raised today by NRG, I think we take that under advisement and potentially discuss it in a future meeting. That wasn't something that was on the agenda so I would say that you know our understanding of it at Eversource right now is that the features that we talked about in that framework and got feedback on those are part of our plan at the moment. The flat data files are on our radar but not currently part of our committed plan and so I guess the question is, yeah.
- G. Geller: But if we can, maybe I think the next meeting is, you know probably about a month away if between now and then you all can take that under consideration and come back to the next meeting with the reaction and there's any clarification that would be helpful for us to provide then we're glad to do that as well.
- R. Hoyos: Speaking of the next meeting, we usually take a few minutes to discuss items for the next meeting. We can take ideas now, or send them at our email address. Like I said, we have two more meetings on the core system implications, customer engagement and business requirements. So those will be the items that we can be discussing in the next two meetings.

## Chat Log:

[Tuesday 1:05 PM] Liz Valsamidis

Thank you for catching that misprint. We'll update the deck and meeting notes to reflect the group as Green Energy Consumers Alliance.

[Tuesday 1:08 PM] Renee Hoyos

We would like to capture all participants in this meeting. Please put your name and affiliation in the chat. Thanks!

[Tuesday 1:09 PM] Bill Cleary (Guest)

Bill Cleary, Oak Bluffs Energy Committee

[Tuesday 1:09 PM] Crayne, Michael OBrien

Michael O'Brien Crayne - Rhode Island Energy

[Tuesday 1:10 PM] Bernetta Morton (Guest)

Bernetta Morton, GoMortonGreen/BeMoreGreen2

[Tuesday 1:10 PM] Michael Murray (Guest)

Michael Murray, Mission:data Coalition

[Tuesday 1:10 PM] Sahlu, Lou (ENE)

Lou Sahlu,  Mass DOER

[Tuesday 1:10 PM] John Prusinski - BEAT (Guest)

John Prusinski, Berkshire Environmental Action Team

[Tuesday 1:11 PM] Patricia Baumer

Patricia Baumer, Greater Boston Real Estate Board

[Tuesday 1:11 PM] John Howat - National Consumer Law Center (Guest)

John Howat, National Consumer Law Center

[Tuesday 1:12 PM] Samantha Caputo (Oracle) (Guest)

Samantha Caputo, Oracle

[Tuesday 1:12 PM] Jeremy Haynes (Unitil) (Guest)

Jeremy Haynes, Unitil

[1:23 PM] Renee Hoyos

We would like to capture all participants in this meeting. Please put your name and affiliation in the chat. Thanks!

[1:23 PM] PIZANO, LUIS A

Luis Pizano, Eversource

[1:23 PM] Jaden Crawford (David Energy) (Guest)

Jaden Crawford: David Energy

[1:24 PM] Nick Corsetti

Nick Corsetti, National Grid

[1:24 PM] Josh Keeling (UtilityAPI) (Guest)

Josh Keeling, UtilityAPI

[1:24 PM] Lisa Morgera

Lisa Morgera - National Grid

[1:26 PM] Nathan Holmy

Nate Holmy - National Grid

[1:26 PM] Jen Watters

Jen Watters - National Grid

[1:27 PM] Hastings, Riley

Riley Hastings, Eversource

[1:27 PM] Renee Addario

Renee Addario, National Grid

[1:27 PM] Justin Eisfeller (Unitil) (Guest)

Justin Eisfeller, Unitil

[1:30 PM] Modlish, Chris (AGO)

Chris Modlish, Massachusetts Attorney General's Office

[1:31 PM] Pat Taylor (Unitil) (Guest)

Patrick Taylor, Fitchburg Gas and Electric Light Company (Unitil)

[1:37 PM] Elisa Grammer- Green Energy Consumers Alliance (Guest)

Thanks-- It is Green Energy Consumers Alliance

[1:58 PM] Brian Beote

Need to drop for a 2PM meeting. Thank you all.

[2:09 PM] Mark (Unitil) (Guest)

Mark Lambert, Unitil

[2:12 PM] Renee Hoyos

Environmental Justice Populations in Massachusetts | Mass.gov

Environmental Justice Populations in Massachusetts

Explore maps & data about Environmental Justice (EJ) neighborhoods in Massachusetts.

[2:12 PM] Nick Corsetti

Thanks Renee.

[2:29 PM] John Howat - National Consumer Law Center (Guest)

+ 1 Greg Geller's question/comment on working to eventually peg usage and expenditure customer info to whatever rate option the customer is taking

[2:40 PM] Nancy Seidman

does Eversource have a rollout plan by geographic area?  e.g., what area is going first?

[2:50 PM] Nancy Seidman

sorry to join late and you likely answered this already.  Will all the presentations be emailed to us? Also, could we have contact information for the speakers please?

[2:51 PM] Renee Hoyos

Yes. Please provide your email address and we will put you on the list to receive the meeting summary and materials.

[2:52 PM] Nancy Seidman

nseidman@raponline.org  Thank you!

# AMI Stakeholder Group Meeting

JANUARY 30, 2024

PHOTO BY JON MOORE

Sustainability is our business

# Meeting Agenda

1. Roll Call/Administrative items (5 min)
2. NRG Presentation on Experiences and Best Practices with AMI Deployments in Other States (Leah Gibbons) (10 min)
3. Final Follow-up Opportunity: Data Access, Stakeholder Consent, and Third-Parties (EDCs) (15 min)
4. Unitil and Eversource Presentation on New Hampshire Governance Concept Paper Status and Schedule (Justin Eisfeller, Riley Hastings) (15 min)
5. National Grid Presentation on AMI Customer Education and Engagement Overview (Nick Corsetti) (15 min)
6. Eversource Presentation on AMI Customer Education and Engagement (Jared Lawrence) (15 min)
7. Unitil Presentation on AMI Customer Education and Engagement (Mark Lambert) (15 min)
8. Discussion (20 min)
9. Planning for next meeting (10 min)

# Roll Call

- Eversource
- National Grid
- Unitil
- Cape Light Compact
- IGS Energy
- Vistra Corp. / TXU
- Actual Energy
- NRG Energy
- Green Energy Consumers Alliance
- Office of the Attorney General
- Peregrine Group
- Department of Energy Resources (DOER)
- Colonial Power Group
- WeaveGrid
- City of Boston
- CleanChoice Energy
- Low-Income Weatherization and Fuel Assistance Program Network
- Just Energy
- Constellation
- Acadia Center
- Mission Data
- UtilityAPI
- National Consumer Law Center
- Landis + Gyr
- Good Energy
- Oracle

# Ground rules and communication process

Meetings

- Agenda items due 7 days prior to meeting
- Agenda sent 3 days prior to meeting
- Meeting summary available 7 days after meeting

Report Schedule

- 4th Quarter Report Due in February

Communication

- Email management process for ERMAMIStakeholdergroup@erm.com

# NRG Presentation on Experiences and Best Practices with AMI Deployments in Other States

Leah Gibbons, NRG Energy, 10 min

# Data Access: Ensuring Consumers Realize the Full Value of AMI

AMI Stakeholder Group Meeting

January 30, 2024

Leah Gibbons, NRG Energy, Inc.

# NRG in Massachusetts


direct energy

Serves 24 municipal aggregation programs including the City of Boston

COMMUNITY COMMITMENT*

- 13 employees
- ~$29.4K donated to charities
- 9 supported charities
- 9 regional business partners
- 2 Sun Club projects
- 2 key community partners
  - Boston Children's Hospital
  - Strong Women Strong Girls

# Delivering AMI Value to Consumers

- Smart meter/AMI deployment
- Load settled and PLCs/ICAP tags calculated based on interval meter data – not load profile
- Retail supplier access to their customers' bill quality, interval meter data on a near real-time basis (i.e., 48 hours or less) – with customer consent
  - Customers own their consumption data and must be permitted to grant access to the service provider of their choice
  - Utilities must provide suppliers with access to their customers' near real-time interval meter data all at one time (i.e., automated), every single day, with Watt level precision
  - flat file format (e.g., .csv) accessible via a secure portal or website
- Other forms of Data Access
  - EDI – essential for accessing historical IU data for larger customers
  - Green Button Connect – enables customers to access their own data; allows for access by third parties not set up to transact with the regulated utilities

# AMI Data Access Market Status

| Jurisdiction | Smart Meters Deployed | Mass Market Load Settlement/Billing[1] | Data Access via Flat File |
|---|---|---|---|
| PA | PECO/PPL/DLC/FE – Yes | IDR | Yes |
| MD | PHI/BGE – Yes FE – No | IDR FE - Profile | Yes FE - No |
| DC | PHI – Yes | IDR | Yes |
| DE | PHI – Yes | IDR | Yes |
| IL | ComEd – Yes Ameren - Yes | IDR | No |
| OH | Duke/AEP/AES/FE – in process; 1.2 M deployed | IDR where deployed; profile for remainder | Under Discussion |
| NJ | No – Cases Pending at BPU | Profile | Under Discussion |

Cost recovery via base rates and/or tariff riders

IDR = Interval Data Recorded Usage; Profile = Rate Class Average Usage; [1]IDR noted if used for PJM Settlement A

# StS Rolling 10 Day File Format Example

**Supplier Customer File Download**

Download Customer File -

007912736_[redacted]P20170227_IU20170224_60_1.zip
007912736_[redacted]P20170227_IU20170224_15_1.zip
007912736_[redacted]P20170227_IU20170223_60_1.zip
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007912736_[redacted]P20170227_IU20170220_60_1.zip
007912736_[redacted]P20170227_IU20170220_15_1.zip

## 15 MPI

| #EDI_ACCT_NO | METER_NUMBER | METER_MULTIPLIER | USAGE_DATE | E_015 | E_030 | E_045 | E_100 | E_115 |
|---|---|---|---|---|---|---|---|---|
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 1 | 2/20/2017 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 1 | 2/20/2017 | 0.013 | 0.013 | 0.06 | 0.059 | 0.013 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 40 | 2/20/2017 | 4.186 | 4.4 | 4.226 | 4.346 | 4.32 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 1 | 2/20/2017 | 0.523 | 0.277 | 0.329 | 0.343 | 0.27 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 80 | 2/20/2017 | 4.96 | 4.88 | 4.88 | 4.96 | 4.88 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 1 | 2/20/2017 | 0.19 | 0.186 | 0.185 | 0.185 | 0.186 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 80 | 2/20/2017 | 3.28 | 3.28 | 3.44 | 3.36 | 3.36 |

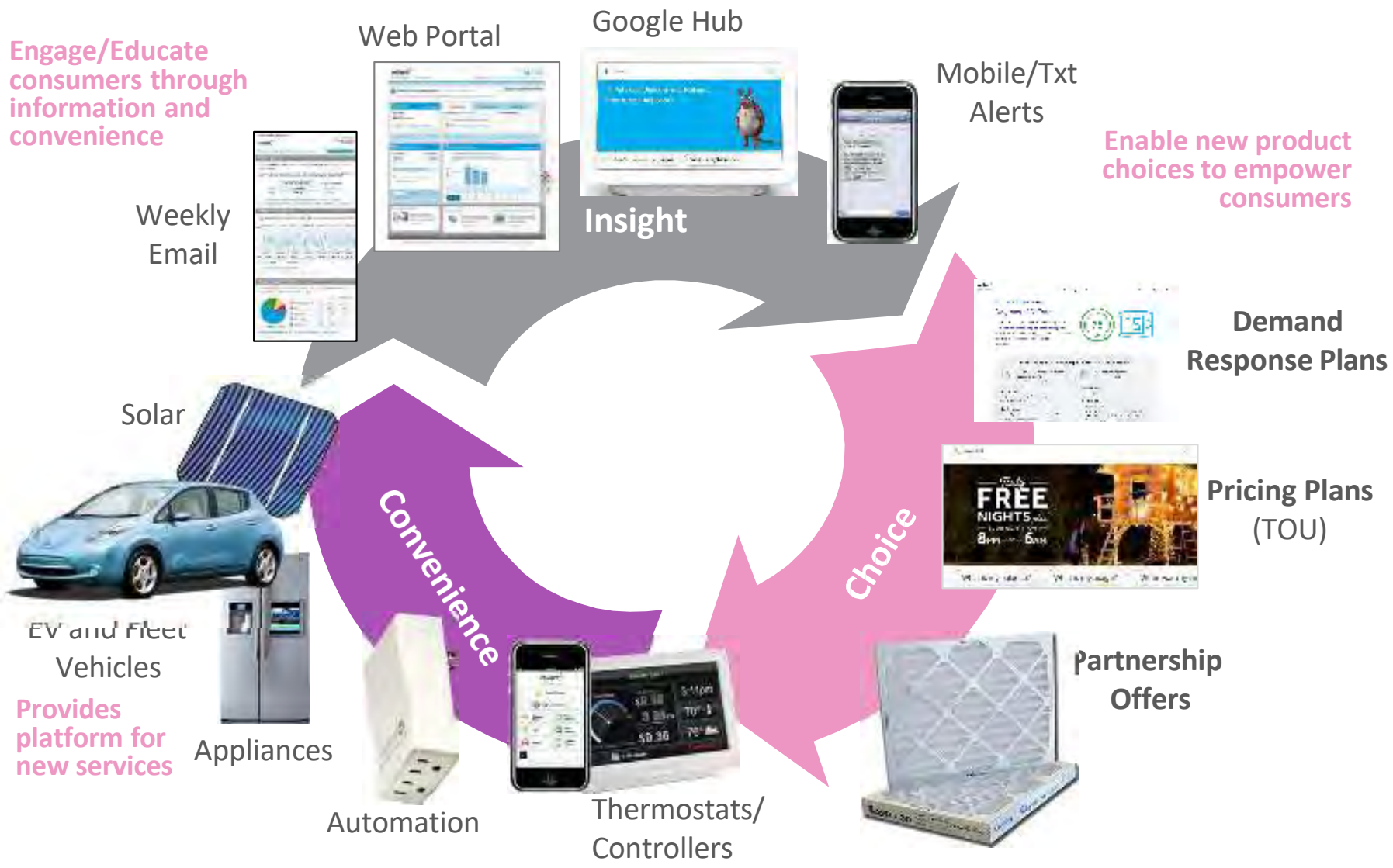
## 60 MPI

| #EDI_ACCT_NO | METER_NUMBER | METER_MULTIPLIER | USAGE_DATE | E_100 | E_200 | E_300 | E_400 | E_500 | E_600 | E_700 | E_800 | E_900 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 1 | 2/24/2017 | 0.487 | 0.474 | 0.485 | 0.822 | 0.478 | 2.851 | 2.791 | 0.639 | 0.66 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 1 | 2/24/2017 | 0.663 | 0.665 | 0.664 | 0.663 | 0.663 | 0.65 | 0.632 | 0.621 | 0.619 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 1 | 2/24/2017 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 1 | 2/24/2017 | 0.028 | 0.027 | 0.028 | 0.027 | 0.027 | 0.027 | 0.027 | 0.026 | 0.027 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 1 | 2/24/2017 | 0.562 | 0.566 | 0.57 | 0.557 | 0.571 | 0.565 | 0.568 | 0.384 | 0.4 |
| xxxxxxxxxxxxxxxxxx | xxxxxxxxxx | 1 | 2/24/2017 | 0.115 | 0.114 | 0.115 | 0.115 | 0.114 | 0.113 | 0.112 | 0.113 | 0.113 |

**Utility provides a daily list that includes:**

- Customer Number, Meter Number, Meter Multiplier, kWh data for each interval for that particular day
- Each file includes rolling 10 days worth of data

# Delivering Smart Energy Solutions



Contact me at:
Leah Gibbons
Senor Director Regulatory Affairs
NRG Energy, Inc.
M: 301-509-1508
lgibbons@nrg.com

# Final Follow-up Opportunity: Data Access, Stakeholder Consent, and Third-Parties

EDCs, 15 minutes

Final opportunity for stakeholder questions on data access, stakeholder consent, and third-party agenda items

# Unitil and Eversource Presentation on New Hampshire Governance Concept Paper Status and Schedule

Justin Eisfeller, Riley Hastings, 15 minutes

# GRIPS Grant Concept Paper - The Regional Joint Utility Energy Data Hub: Advancing Community DER Enablement and Customer Analytics in New England

MA AMI Stakeholder Group Presentation 1/30/2024

EVERSOURCE Liberty Unitil nationalgrid

# Agenda

1. GRIP Grant Concept Paper
   - Grant Overview
   - Technical Overview
   - Community Benefits
   - Risks
2. Proposal Schedule
3. Project Implementation Schedule

# Grid Resilience and Innovation Partnerships (GRIP) Grant

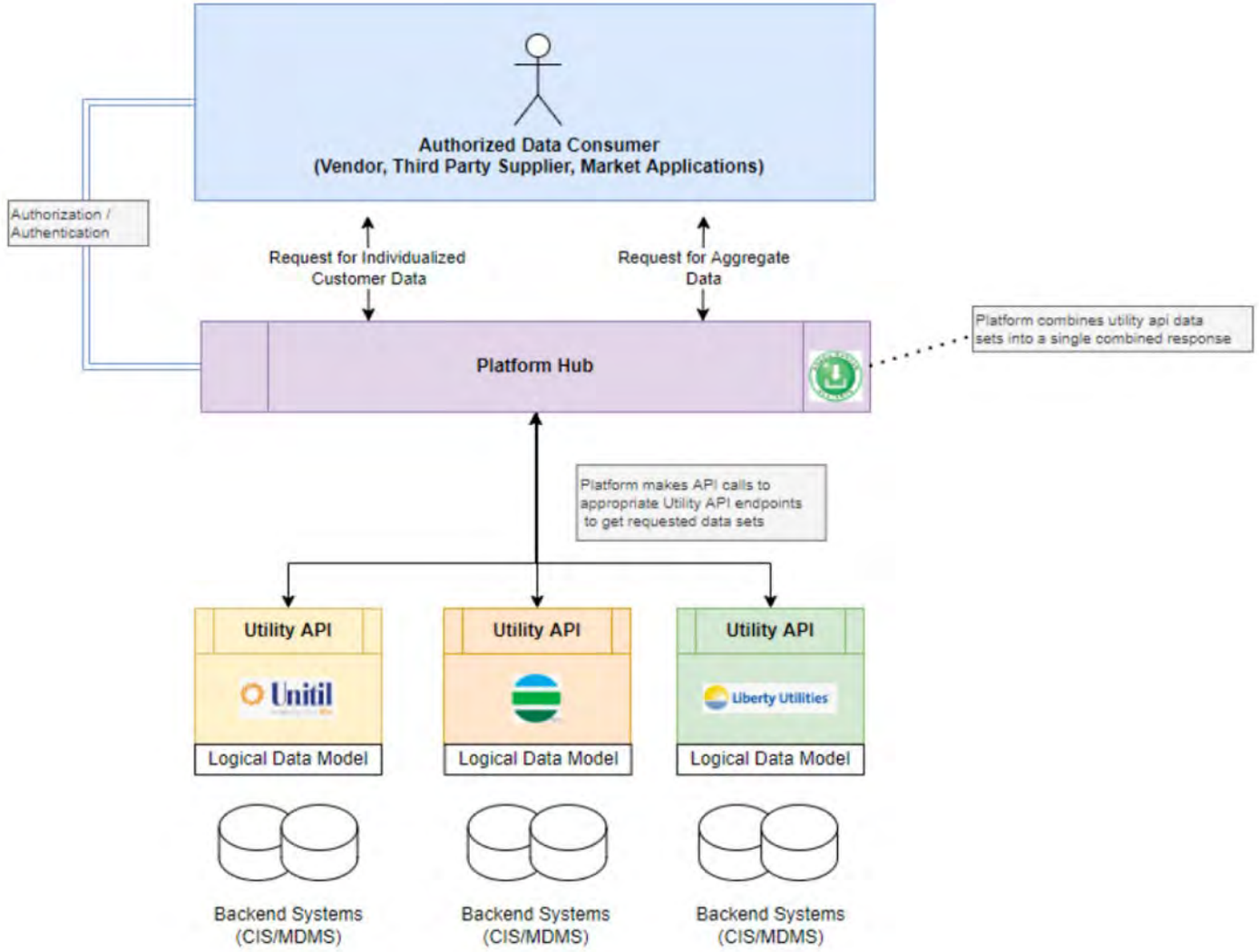
- **Applying for Topic Area 2:** Smart Grid projects focused on "innovative and ambitious uses of cutting-edge, market-ready technologies. These technologies can include new devices, materials, engineering designs, or software tools"
- **Priority investment include:** Enhancing interoperability and data architecture of systems that support two-way flow of both electric power and localized analytics to provide information between electricity system operators and consumers.
- **Allowable investments include:**
  - … the documented purchase costs of the software.
  - … the documented expenditures for purchasing and installing such equipment that allows Smart Grid functions to operate and be combined or coordinated among multiple electric utilities and between that region and other regions.
  - … the documented purchase costs of the data analytics.

# Grid Resilience and Innovation Partnerships (GRIP) Grant Proposal

**Planning to request $14.5M grant**

- Will **reduce costs to rate payers** for the platform
- Grant **requires a 50% match** from participating companies **(project total $29M)**
- Monies expected to be split between buying down the platform and assisting with program offerings, which will include:
    - **Services provided by partner** organizations to provide benefits to customers and invest in community outreach, education, etc.
    - Connecting **third parties** to platform
    - Providing **municipal benefits**
- Some savings will be seen in platform rollout and engagement costs regardless of grant

# Energy Data Sharing Hub



# Energy Data Sharing Hub

## Platform Hub

- Central web portal for third party registration, data access and implementation of the "API of APIs".
- Enables authorized third parties to request customer-authorized data from a single access point.
- Combines individual utility data sets into a single data set for delivery to the authorized third party.
- APIs will be certified by the Green Button Alliance.

## Third-party registration process

- Includes a security assessment, with DataGuard as its assessment standard.
- Customer opt-in for use, which is consistent with the goal of putting customers in control of their data in a secure fashion.
- Platform design structure with the public facing data platform providing data retrieval, but not data storage, which limits security risks and lowers costs.

## Utility-specific integrations

- Gathers data from back-end customer information systems including each participating utility's billing systems and metering platform.
- The interfaces normalize the data into a common model and format known as the Logical Data Model.

## Logical Data Model

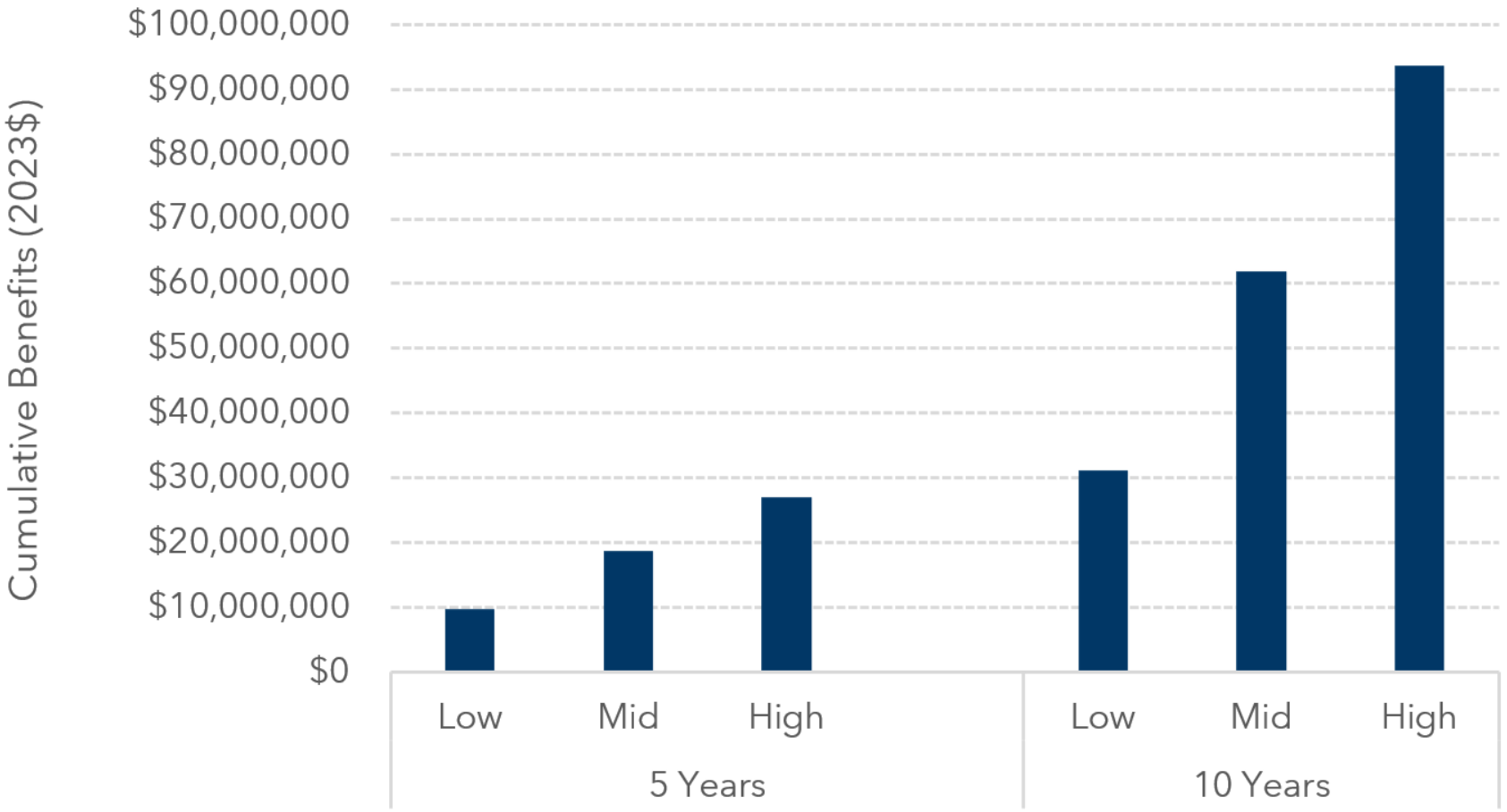
- Defines 33 data fields and describes how those fields map to the Green Button standard.
- Provides a common data dictionary for the platform, allowing participating utilities to provide the same normalized data.
- Exists as a living document that can be expanded in the future to layer on new energy data that may arise, in a unified way and on a singular platform.

## Community Dashboards

- Dashboards & other software developed and supported by partners will be layered on top of the Hub and used to support beneficial use cases.
- Leverage the Hub to enable EJ communities to visualize data about current conditions, customizable local and regional goals, and measurable progress on implementing efficiency and renewable energy projects.

# Estimated NH Benefits of the Data Platform

**Figure 3: Total cumulative benefits by timeframe and scenario**



# Regional Interest

**Utility Leads:**

- Justin Eisfeller (Unitil) – CTO and VP of IT
- Riley Hastings (Eversource) – Lead Analyst, EE Programs
- Heather Tebbetts (Liberty) – Director, Business Development
- Nick Corsetti (National Grid) – Director, MA AMI Customer, Community, & Regulatory Engagement

**Platform Hub Vendors:** Have received RFI responses from 8 potential vendors. A final vendor will be selected through an RFP process.

**Community Engagement –** NH, MA, CT, and ME have shown interest. Municipal and regional outreach will leverage the organizations who have relevant existing frameworks and relationships**:**

- NH Department of Energy (NHDOE)
- Community Power Coalition of NH (CPCNH)
- Clean Energy NH (CENH)
- Office of the Consumer Advocate (OCA)
- MA Department of Energy Resources (MA DOER)
- CT Department of Energy & Environmental Protection (DEEP)
- Sustainable Connecticut
- Connecticut Office of Consumer Counsel (OCC)

# Community Benefits Plan

**Overarching goals:** grid-benefitting operational improvements, advancing energy democracy, workforce development, and community partnerships.

**Will support a variety of use cases to be utilized to benefit communities and ensure:**

- Awareness of the availability of the Hub for their use;
- How to engage with the Hub API's to enable/enhance their services;
- How to advise individuals on how to leverage the Hub to support enrollment in energy programs, tax credits, or energy saving programs;
- How to leverage the Hub to evaluate project efficiency costs and savings;
- How to pull the relevant data necessary to support timely siting of projects or verification /validation of performance of energy savings programs; and
- How to leverage the Hub to support facilitation of funding opportunities available in the Inflation Reduction Act (IRA).

**Partnership Examples may include:**

- Clean Energy NH
- CENH's Circuit Rider Program
- CT Department of Energy & Environmental Protection
- Sustainable CT
- The Community Power Coalition of NH (CPCNH)
- MA Department of Energy Resources (MA DOER)
- Community Engagement Stakeholder Advisory Group (CESAG)

# Risks and Challenges

- **Risk A - Utility Regulatory Support for ratepayer funding to support the project:** The utilities must receive all necessary regulatory approvals from authorities in each participating state including that for the non-grant funded costs of the platform to be collected from ratepayers for the utilities to proceed with the project

  **Remediation A**: Regional approach and grant funding expands prospective benefits. Additionally, regulatory involvement, design, and stakeholder engagement has been central to NH efforts to date.

- **Risk B - Multi-Utility/Stakeholder Complexity:** Extension to additional utilities and territories introduces complexity.

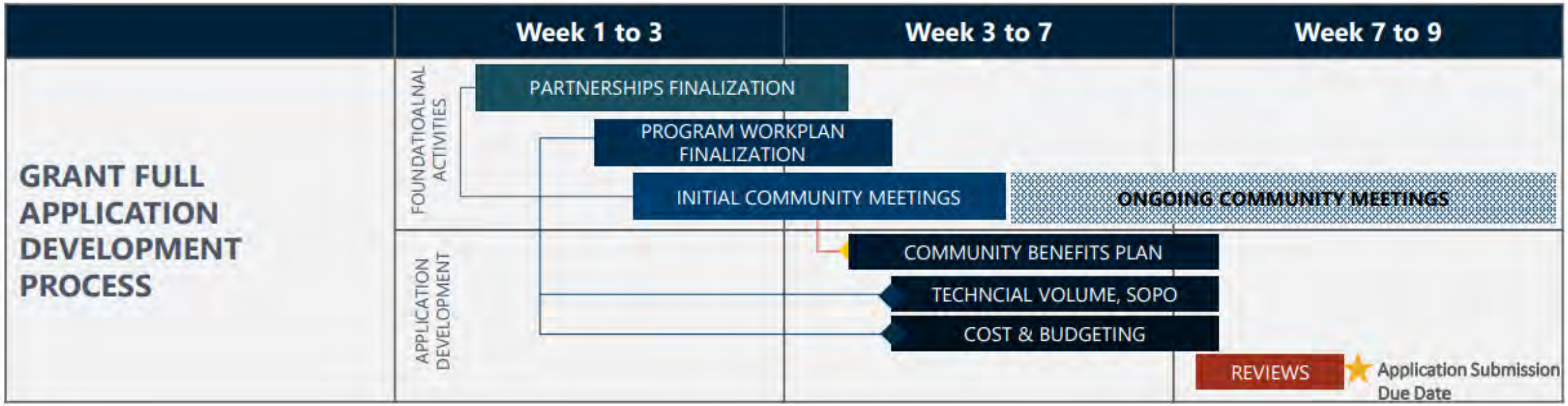
  **Remediation B:** Establishment of an overseeing Program and Change Management Working Group (PCMWG), coupled with the Governance Council and establishment of a joint-utility committee

- **Risk C - Technical Execution Risk & Costs:** The Platform is a complex IT endeavor on the leading edge, requiring external vendor products and integrations, introducing execution and cost uncertainty.

  **Remediation C:** The project is well underway with significant vendor interest and an experienced team of IT professionals involved (including consultants who have done this elsewhere)

# Timeline

- Utilities have partnered with West Monroe to facilitate the Proposal
- Seeking agreement on regional planning and governance approach
- Beginning regulatory efforts for awareness and approvals
- Expecting to start work in mid-late February with West Monroe
- Proposal filing deadline is May 22, 2024 for Topic Area 2 - Smart Grid projects



# Project Implementation Milestone Expectations

## YEARS 1 & 2: PLATFORM BUILD & MVP

- Issue RFP & Vendor Selection
- Initiate Design / Build / Configuration
- Perform Utility Hub Integrations
- Hub Platform MVP Complete

## YEARS 3 & 4: LEVERAGE PLATFORM FOR COMMUNITY BENEFITS

- Initiation of Community Benefit Plan
- Engage targeted Disadvantaged Communities (“DAC”) and support partner development and deployment of community dashboards and other applications
- Next stage planning and Hub extensibility exploration
- Ramp up technical resources and on-boarding community support

# National Grid Presentation on AMI Customer Education and Engagement

Nick Corsetti, 15 minutes

# MA Advanced Metering Infrastructure (Smart Meter Program)

## Customer Education & Engagement Overview


**MA AMI Stakeholder Working Group**

**January 30, 2024**

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# Agenda



1. Education & Engagement Strategy
2. Voice of Customer / Customer Insights
3. Envisioned Communications Timeline
4. Customer Energy Management Tools
5. Internal Change Management Plan
6. Coordination with *Future Grid Plan* (ESMP)

# Education & Engagement Strategy



National Grid's smart meter program marks **the beginning of a new era for customer energy control and convenience**.

To bring customers and communities along with us on this **transformational journey**, the Company has developed a robust strategy to **inform customers about smart meter technology**, and **empower and enable them to derive the greatest value from the new functionality**, all while preparing internal employees to successfully help guide customers through each of the three key phases below:

### *Phase 1: Customer & Community Awareness*

- Inform customers about smart meters and begin the conversation about how the technology can improve their energy experience.

- Engage with community/municipal leaders and key community partners to develop advocates for smart meter deployment.

### *Phase 2: Deployment*

Prepare customers for installation. This strategy involves a 90, 60, 30, 10-day pre-deployment plan for communicating with customers and answering questions.

### *Phase 3: Empowerment and Enablement*

Provide communications to customers about ongoing benefits.

This includes, but is not limited to, access to interval usage data, high-usage alerts, remote service connections, real-time load disaggregation, and enhanced outage management.

Enable future implementation of innovative pricing programs (*e.g., time-varying pricing [TVR]* rates).

As deployment commences in Worcester, MA, the Company will **evaluate, monitor, and adjust trainings** to ensure employees are able to continue delivering value for customers throughout the life of the smart meter program. The Company will also **review ongoing customer feedback and insights to adjust marketing messaging** as needed, and lastly, will prioritize **incorporating real-time learnings from its current smart meter deployment in Upstate New York**.

# Voice of Customer / Customer Insights (1 of 2)

AMI
Advanced Metering Infrastructure

## Ongoing Research to Inform Education & Engagement Strategy

### Lessons Learned from UNY Customer Research

- **Awareness/understanding of smart meters:** Limited
- **Top benefits**
  - Faster outage detection and more timely and accurate information during outages
  - Potential cost-savings through greater insight into usage
- **Top concerns**
  - Increased costs to the customer
  - Privacy/security (hacking, data loss/sharing)
  - Fear that NG could control customers usage
  - Health (EMF emissions)
- **Preferred methods of communication**
  - Email, letters or brochures, and text message

**Sources**

| | |
|---|---|
| • Vulnerable Population In-Depth Interviews | Sep 2022 |
| • General Population & Elite Focus Groups | Oct 2022 |
| • Communications Testing with Customer Council | Jul 2022/Oct 2022 |
| • Customer Experience Survey Series | Jul 2023 - Ongoing |

### Insights from MA Customer Research (Upcoming)

- **Objective:** Capture feedback from MA customers on the current communications plan and identify whether any adjustments need to be made to best suit the MA market.
- **Mode:**
  1. National Grid Customer Council (online research panel)
  2. Focus Groups
- **Segments of Interest:** In addition to the general population, special effort will be given to incorporate feedback from EJ and LMI customers
- **Timing:** Winter/Spring 2024

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# Voice of Customer / Customer Insights (2 of 2)

AMI
Advanced Metering Infrastructure

## Tracking the Customer Experience Along their Smart Meter Journey

National Grid will capture customer insights on an ongoing basis at 3 critical touchpoints

Example Research Timeline

| Target Installation Month | Jun-24 | Jul-24 | Aug-24 | Sep-24 | Oct-24 | Nov-24 | Dec-24 | Jan-25 | Feb-25 | Mar-25 | Apr-25 | May-25 | Jun-25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oct-24 | Pre | 90-day | 60-day | 30-day | Installation | | Post | | | | | | Long-Term Tracking |
| Nov-24 | | | 90-day | 60-day | 30-day | Installation | | Post | | | | | |
| Dec-24 | | | | 90-day | 60-day | 30-day | Installation | | Post | | | | |

***Pre-Deployment Baseline Survey***

**Timing**

- Fielded prior to the receipt of a smart meter, and prior to the start of 90-day communications in a specific area.

**Objectives:**

- Establish a baseline measure of awareness, interest, and attitudes towards smart meter offerings prior to formal communications launch.
- Identify opportunities to strengthen marketing and outreach efforts; and customer experience with smart meters

***Post-Installation Survey***

**Timing**

- Conducted on a rolling basis with customers 1-2 months after their receipt of a smart meter.

**Objectives:**

- Monitor awareness and perceptions of smart meters and their capabilities.
- Gather feedback on the installation experience, communication efforts and early experience with meter and new energy management tools.

***Long-Term Tracking Survey***

**Timing**

- Conducted with customer who have had their smart meter for 6 months or longer.

**Objectives:**

- Monitor customer awareness of perceptions of smart meters and its capabilities.
- Gather additional insights as needed to address topics of relevance at a given time, such as new product/service offerings or communications.

- **Target Audience:** Residential & SMB
- **Segments of Interest:** In addition to general population, *special effort will be given to enable annual reporting on EJ and LMI customers*
- **Mixed Mode:** Online / Phone

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# Envisioned Communications Timeline



All communications and outreach are built on a ***listen, test, learn*** approach.

Customer communications

| 90-day | 60-day | 30-day | 10-day | Day of install |
|---|---|---|---|---|
| • Mass market outreach | • Direct mail letter<br>• Email | • Bill insert<br>• Welcome brochure<br>• Email/Letter<br>• Video | • Text<br>• Email<br>• Robo call | • Doorhanger |
| Create awareness | It's coming – high level | Detail benefits – target audiences | Installation info | Congratulations and next steps |

Post-install letter & ongoing education

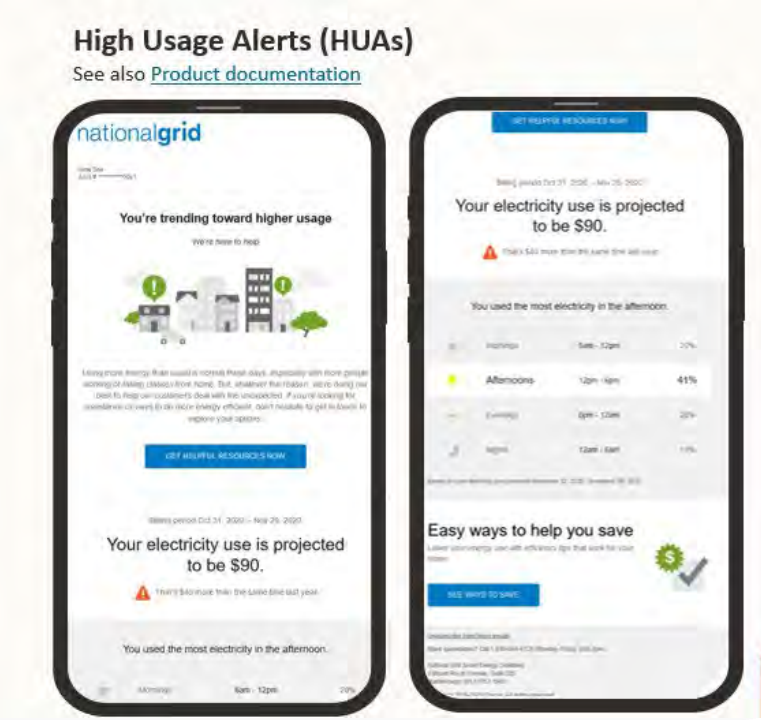
Proactive and consistent community engagement with town/municipal leadership and critical community partners, such as:

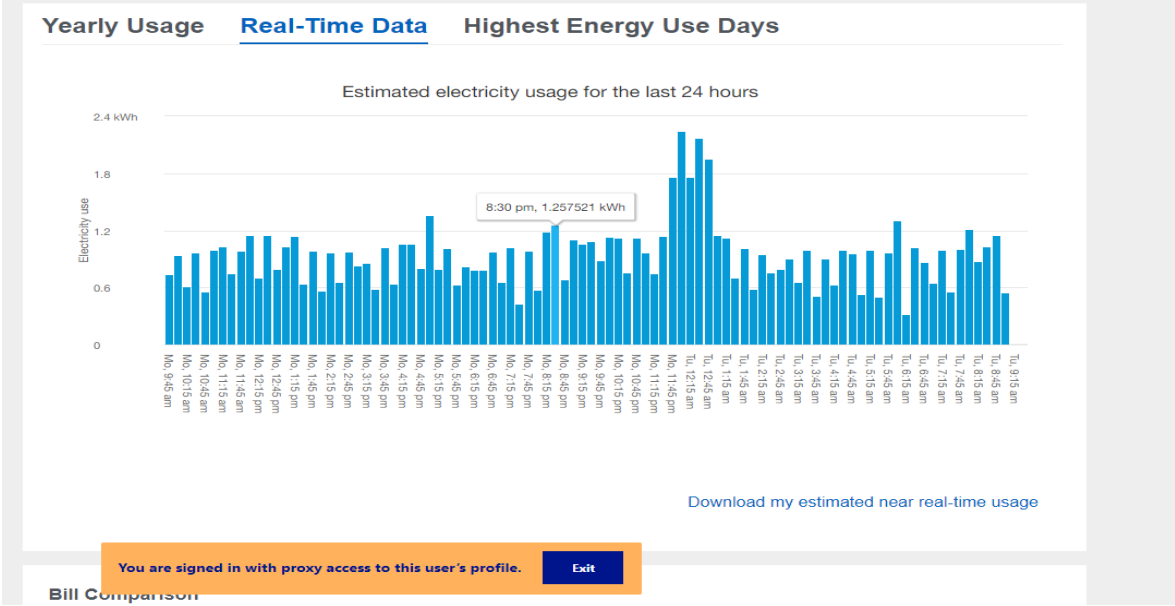
- Community organizations and ongoing presence at appropriate public events;
- Community Action Agencies (CAAs);
- Faith-based groups;
- Small business organizations / interest groups;
- Other LMI / EJ-focused organizations

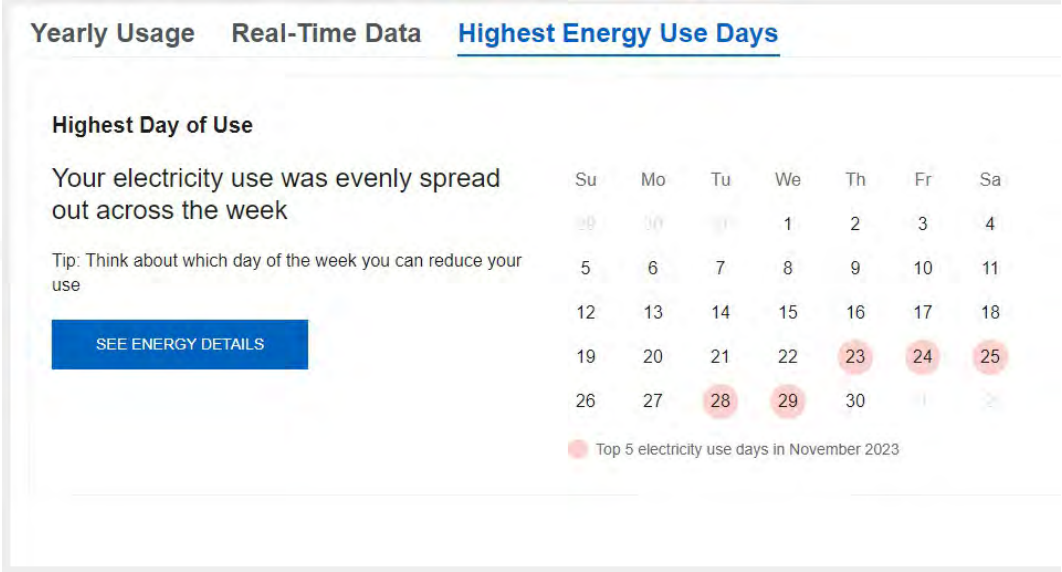
# Customer Energy Management Tools

AMI
Advanced Metering Infrastructure

- Access to Near Real-Time Data
- Highest Energy Use Days
- High Usage Alerts and Weekly Energy Usage Summary (emails)
- Green Button Download
- Green Button Connect (future offering)
- Real-Time Load Disaggregation (future offering)

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# Coordination with *Future Grid Plan* (ESMP)



## Engaging our customers, communities, and stakeholders

Smart meter-specific outreach will be fully embedded within the **comprehensive customer and community outreach strategy to raise awareness** of National Grid's *Future Grid Plan (ESMP)* – engaging a broad cross-section of customers and communities, **including EJ, low and moderate income, municipalities and small and medium business**, to listen, learn and incorporate feedback.

### Building Understanding

Establish a foundation of understanding regarding the electric grid, the need for electric sector modernization plans and the Commonwealth's net zero goals

### Developing Collaboration

Building on shared understanding, engage stakeholders by illustrating the insights and initiatives required to deliver the next generation grid and clean energy transition, making it relevant to them

### Tailoring Outreach

Tailor stakeholder engagement plans to support local ESMP projects to elicit feedback and identify community concerns and needs, and educate communities about the need for the upgrades being made to the grid and the outcomes they will deliver

# Internal Change Management Plan



The Change Management team will deliver a holistic change strategy to **drive stakeholder alignment across the Company**, generating **awareness and developing ownership of the new technologies and processes** resulting from the smart meter program. The five main activity groupings work together to assess and engage stakeholders, bringing them along the smart meter program change curve.

## Change Impact Assessment

Attend Digital Process Design (DPD) workshops with key business and subject matter experts to collect change impacts to various stakeholder groups.

**Deliverables/ Key Activities:**

- DPD workshop attendance
- Change Impact Assessment baseball cards
- Stakeholder impact summary
- Union stakeholder impact summary

## Stakeholder Engagement

Engage impacted stakeholders across various business areas to inform and prepare them while reducing change fatigue.

**Deliverables/ Key Activities:**

- Stakeholder Analysis
- Personas / Experience Maps
- Change Enablement Network
- VP Touchpoints

## Communications

Provide key program information and updates to all stakeholder groups.

**Deliverables/ Key Activities:**

- Communications Strategy and Plan
- Develop and distribute communications artifacts
- Manage AMI Employee Resource Hub

## Training

Develop comprehensive training strategy, plan, and materials for all impacted stakeholders to enable a successful adoption of the AMI program.

**Deliverables/ Key Activities:**

- Training Strategy
- Training Needs Analysis
- Training Curriculums and Learning Journeys
- Training material development (SOPs, QRGs, AMI 101 course, e.g.)
- Training Coordination

## Business Readiness

Prepare the organization for a successful implementation by enabling the workforce to accept and sustain the smart meter program.

**Deliverables/ Key Activities:**

- Business Readiness Strategy
- Business Readiness Dashboard
- Change Readiness Surveys

# Appendix


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# Applying Learnings from the SES Pilot



Before and throughout our Smart Energy Solutions Pilot (2015-2018), N**ational Grid found success in implementing a "Listen, Test, Learn" approach**, built upon "on the ground" conversations and iterative improvements to its education and engagement strategy.

The Company intends to fully leverage the learnings highlighted below as it prepares to deploy smart meters across Massachusetts.

| Success | Opportunity | Learning |
|---|---|---|
| Opt-out approach to the Pilot was instrumental in simplifying the planning, scheduling, communication and initial technology successes. | Implementing business process improvements that would streamline and accommodate evolving customer scenarios in AMI deployment and management. | *-Pilot enrolled ~11,000 participants which is more than would be achieved in an opt-in design.*<br>*-Retention rate after two years was 98%* |
| Able to successfully support a wide variety of billing scenarios, under current and Smart Grid tariffs, using AMI meter data. | Innovative bill design and presentment will allow National Grid to demonstrate the energy and bill savings to the customer. | |
| Extensive outreach and education were critical to creating awareness and interest among customers and motivating them to participate actively in the Pilot. | Providing more customized information to help customers maximize energy savings in light of their specific energy usage characteristics would have supported higher savings and enhanced the customer experience. | *-Information needs to be provided multiple times via multiple channels.* -<br>*Targeted communications to specific customer groups for better awareness.* |
| Providing access to dedicated support services and the Sustainability Hub allowed customers to receive quick access to information and resolution of issues. | Increasing accessibility of the web portal via a streamlined account creation process would support customers in coming to view online access as a key interface with National Grid. | |



*Sources:*
National Grid Smart Energy Solutions Pilot Final Evaluation Report prepared by Navigant – May 5, 2017
National Grid Smart Energy Solutions 2017 and 2018 – FINAL analysis report prepared by Navigant July 25, 2019

# REFERENCE – MA AMI Metrics

AMI
Advanced Metering Infrastructure

**AMI Deployment - AMI Customers**

| | Reporting Year | |
|---|---|---|

| | Residential | | | | | | Small C&I | |
|---|---|---|---|---|---|---|---|---|
| | All | | Low Income (LI) | | Environmental Justice (EJ) | | | |
| | # | % | # | % | # | % | # | % |
| Active Customers (1) | | N/A | | N/A | | N/A | | N/A |
| **Planned AMI Customers, Reporting Year (2)** | | | | | | | | |
| 2024 | | | | | | | | |
| 2025 | | | | | | | | |
| 2026 | | | | | | | | |
| 2027 | | | | | | | | |
| 2028 | | | | | | | | |
| 2029 | | | | | | | | |
| 2030 | | | | | | | | |
| **Actual AMI Customers, Reporting Year (3)** | | | | | | | | |
| 2024 | | | | | | | | |
| 2025 | | | | | | | | |
| 2026 | | | | | | | | |
| 2027 | | | | | | | | |
| 2028 | | | | | | | | |
| 2029 | | | | | | | | |
| 2030 | | | | | | | | |

**Notes**

N/A: Not applicable

(1) As of December 31 of the reporting year, the total number of customers being actively served by the Company.

(2) As of December 31 of the reporting year, the Company's revised planned total number and percentage of AMI Customers as of December 31 of each calendar year.

(3) As of December 31 of the reporting year, the actual total number and percentage of customers being actively served (1) who are AMI Customers as of December 31 of each calendar year.

**AMI Deployment - Customer Education and Engagement Outreach Events**

| | | | | Event Topics Covered | | | | | Targeted Event Population | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Event Number | Event Description | Event Category | Event Date | TVR | HBA | Usage Data Access | Opt-out | Other (specify) | Environmental Justice | Low Income | Targeted Event Components |
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |

**AMI Deployment - Outcome**

| | Reporting Year | |
|---|---|---|

| As of December 31 of the Reporting Year: | Residential | | | | | | Small C&I | |
|---|---|---|---|---|---|---|---|---|
| | All | | Low Income | | Environmental Justice | | | |
| | # | % | # | % | # | % | # | % |
| **Actual AMI Customers (4)** | | | | | | | | |
| **AMI Opt-Outs (5)** | | | | | | | | |
| **Access Usage Data (6)** | | | | | | | | |
| **High Bill Alerts (7)** | | | | | | | | |
| **Supply TVR (8)** | | | | | | | | |

Notes

(4) Actual total number and percentage of customers being actively served (1) who are AMI customers (repeated from (3) for the reporting year).

(5) Actual total number and percentage of customers being actively served (1) who opted-out of AMI.

(6) Actual total number and percentage of AMI customers (4) enrolled to access and view their usage data.

(7) Actual total number and percentage of AMI customers (4) enrolled to receive high bill alerts.

(8) Actual total number and percentage of AMI customers (4) receiving their supply service on a time-varying or time-of-use rate basis, through the Company's basic service offering or to the extent the data are available, through a competitive supplier.

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# Eversource Presentation on AMI Customer Education and Engagement

Jared Lawrence, 15 minutes

EVERSOURCE

MA AMI STAKEHOLDER WORKING GROUP:

# Eversource AMI Customer Engagement

# AMI Customer Engagement Plan

EVERSOURCE

# AMI Customer Research

EVERSOURCE

## Baseline Awareness

- Consulted with other utilities implementing AMI for best practices on research
- Research design allowed for customer segmentation
- Established customer baselines
  - 74% of MA customers “Not very” or “Not at all familiar” with AMI
  - 50% of customers interested
  - 68% indicated potential AMI benefits would increase their satisfaction

## Awareness Campaigns

- Planned communications to be tested with Online Community (customer panel) for clarity and ease of understanding
- Regular surveys to measure efficacy of awareness campaigns
- Results used to adjust communications and respond to any customer concerns expressed
- In-depth Online Community research on customer data portal

## Post Installation

- Use of new data-collection tools to generate deeper insights into customer satisfaction based on usage
- Usage comparisons among customers in identified EJ communities to tailor outreach
- Ongoing user-experience research to identify and add customer desired tools and features

Q3 2023 — Q1 2024+ — 2025+

# Three-Phased Customer Communications Plan

EVERSOURCE

## Broad Awareness

- Education for all MA customers: What are smart meters, benefits
- Increasing frequency over the year
- Focus on EJ, low-to-moderate income customers
- Channels include:
  - Eversource.com
  - Video
  - Email
  - Traditional and social media
  - Advertising
  - Community events

## Installation

- Direct customer outreach:
  - 90, 60, 30 days before installation via letter, email
  - 1-2 days before installation via text, email
  - Doorhanger left at installation
- Information at eversource.com throughout installation process
- Community events
- Specialized call center support

## Post Installation

- Targeted follow-up communications to promote benefits and maximize portal use:
  - Email
  - Postcard/mailer
  - On-bill message
  - Eversource.com
- Regular inclusion in mass customer channels when all meters are installed

*Communications translated in English and Spanish, as appropriate*

End of Q1 2024+ | Q1 2025 | 2025+

# ESMP Stakeholder Engagement Strategy

## Customer Outreach

- Digital Surveys
- Focus Groups
- Customer Satisfaction Gauging
  - Tracking customer satisfaction
  - Feedback loops for all inputs received

## Municipal Outreach

- Strengthen relationships
  - Towns
  - Cities
- Direct Dialogue
  - Mayors
  - Energy Managers

## Environmental Justice Communities Outreach

- Address
  - Overt and covert inequities
  - Bias in communities
- Increased engagement
  - Intentional focus on underserved communities

# AMI Customer Data Portal

EVERSOURCE

# AMI Customer Data Portal: Feature Functionality

EVERSOURCE

## *Key MVP Features:*

**#1 Requested Feature**

**Early Notification of High Usage**

- ***Personalized Self-Service:*** Hub for customer to view smart meter information and planned installation timeline
- ***Near-Realtime Usage Data:*** Customers can view historical usage data up to previous day
- ***Third Party Sharing:*** Customer can easily share usage data with authorized 3rd parties and will support Green Button Download format
- ***Usage Behavior:*** Integrates customer usage data to generate information and predictions on usage patterns and trends
- ***Tailored Experience:*** Portal will provide a unique experience to its audience (commercial, residential, solar)

## *Fast Followers: (Post MVP)*

- ***High Usage Alerts:*** Adjustable custom usage thresholds, alerting customer to abnormal usage before the end of a billing cycle
- ***Usage Insights:*** Analytics to identify high usage or obsolete equipment and recommend changes in usage patterns to reduce bills
- ***Real-Time Usage Data and Service Status:*** Same-day 15-minute (residential) and 5-minute (commercial) interval data; confirm no outage
- ***Rate Comparison:*** "What-if" scenarios surrounding information on the impact of various rates on the customer's bill (with TVR go-live)
- ***Self-Service Communications:*** Self-enrollment into TVR rates, how switching rates will impact their bill reducing CSR calls

# AMI Customer Data Portal: Widgets

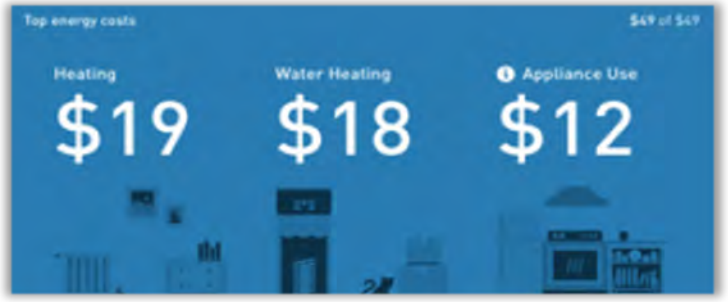
Digital Self-Service Energy Management Widgets deliver engaging, personalized web and mobile experiences to the customer


**Usage Breakdown**
Advanced Disaggregation powered billing history by end use

**Energy Insights**
Monthly history with insights & weather

**Green Button Connect**
Easy, access to customer usage data


**Hourly Pricing Insights**
Insights of hourly costs for usage




**Disaggregated Energy Usage**
Cost of energy use by category

**Complex Rates**
Comparison between bills with peak pricing components

Preliminary research indicates that Bill Comparison widgets indicating "Why are my electricity charges higher?" has received the most engagement and proven the most valuable* for the tested customers

*As with any ongoing research, these are preliminary findings and can be subject to change

# Unitil Presentation on AMI Customer Education and Engagement

Mark Lambert, 15 minutes

Unitil
energy for life

# Massachusetts AMI Stakeholder Working Group

## Customer Engagement Opportunities

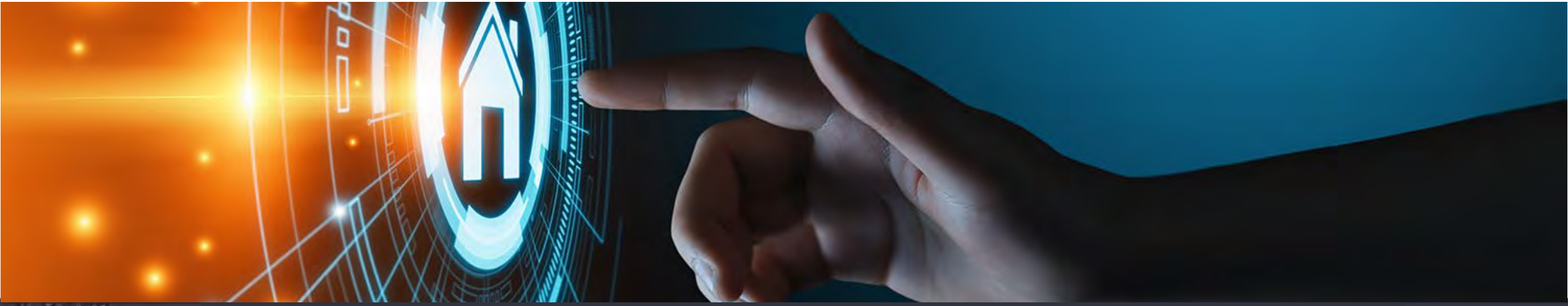
January 30, 2024

# Transformative Customer Engagement

A Modernized Electric Grid

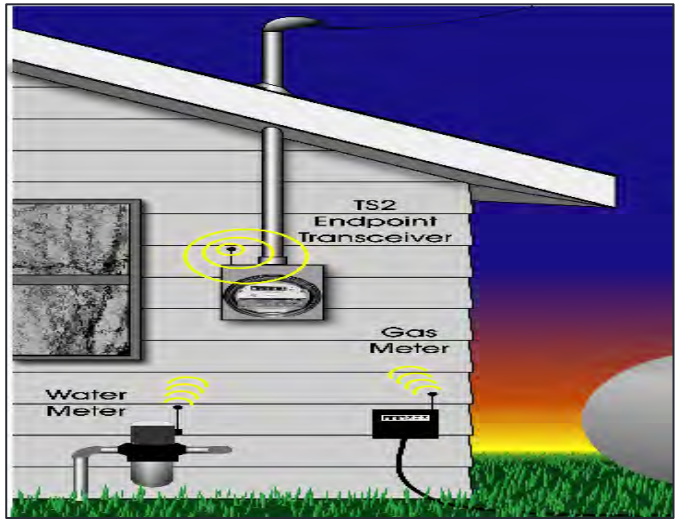
Connect customers with value adding products and services that empower users to reduce their energy usage thereby reducing their bill and their carbon footprint.

- Consumers want more insight and control in managing their behind the meter loads
- Seeking self service platforms providing them with a personalized experience:
  - BTM disaggregated load analytics, Home Energy Reports
  - Active Demand Response
  - Rate Comparison tools
- Engaging our customers, communities and our stakeholders



# Unitil's AMI System

- 2007 - Landis & Gyr full deployment
  - Power Line Carrier System
  - Multi-utility endpoints – gas and electric
  - Integration with CIS, GIS and OMS
  - L&G TS2 and PLX Meters
- 2024 – Upgrade Next Generation AMI
  - Mesh RF system
  - IoT Grid Sensing meters
  - Real Time Consumer Experience
  - Home Energy BTM Analytics




# AMI Customer Engagement Plan

- Extensive Customer Outreach plan in 2006 – educating customers on the benefits of AMI meters
- Upgrade planned for 2024 for our Massachusetts customers
- Communications Plan
  - Direct Mail
  - E-mail
  - Text Message
  - Door Hangers
  - 24-7 call center coverage – Utility Partners of America
- Multiple Languages to support EJC communities

# Customer Data Portal

- Compare Bill Feature: Compares current monthly billed usage to billed usage from prior months. Provides insights for usage changes and guides the customer conversation tools on ways to save.
- Usage Charts: Interactive charts that allow customers to view smart meter and monthly billed usage along with temperature overlays displaying max, average, minimum temperature specific to the service area.
- Rate Comparison Tool: allows customers to evaluate bill impacts for different rate options.
- Mobile Application: Access to all of the tools on a convenient mobile application.
- Green Button Download: Direct customer access to usage provided in a standardized format.

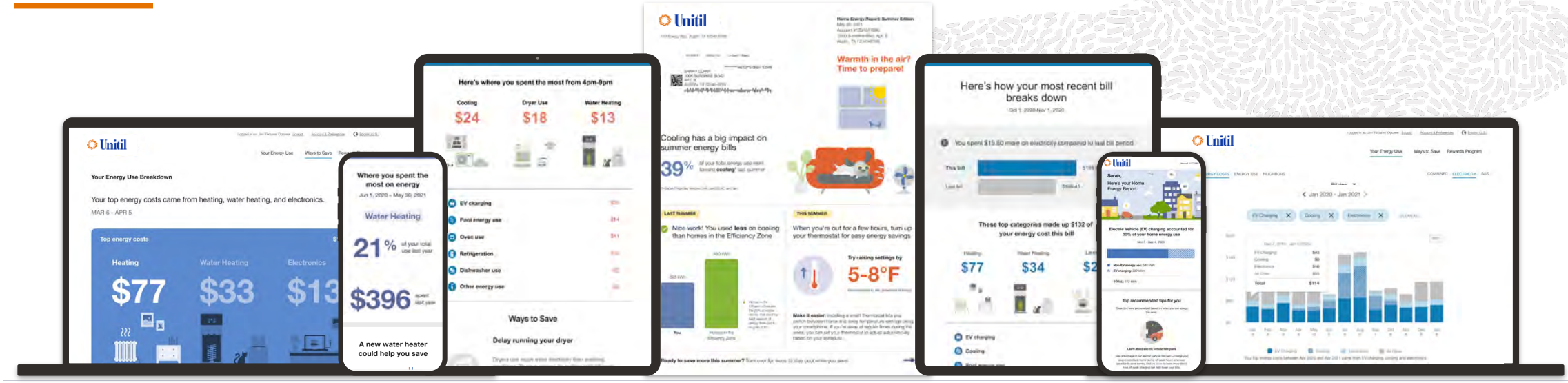
Coming Soon

- Green Button Connect: Direct 3rd party access to electricity usage provided in a standardized format.
- High Usage Notifications: Customers will receive a notification alerting them to the fact that their usage has exceeded a predetermined threshold amount.

# Marching Toward the Future

- Roadmap that seeks to change customer's energy behavior in accordance with the customers vision of their energy future.
  - Proactively begins with an alert or notification
  - Providing insight into BTM disaggregated load
  - Machine learning/AI taking customers through their unique journey based on several data inputs.
  - Those journeys will grow over time but will include:
    - Purchasing products through a marketplace
    - Shopping for rate options, DR programs, storage, solar, EE, EV Chargers, Heat Pumps, Installers, Suppliers, etc
- Building on Demand Response Programs – understanding customer trends, needs
- Contributing to a "Decarbonization Hub" or an "Electrification Hub" in concert with our customers, regulators, and investors.

# Future Solutions - Disaggregation and Presence Detection




## *Disaggregation, Deep Learning Accuracy*

- Pool Pump — *92% Accuracy*
- Washer — *99% Accuracy*
- Always On — *96% Accuracy*
- Air Conditioner — *97% Accuracy*
- Solar PV — *96% Accuracy*
- Oven — *99% Accuracy*
- Dryer — *98% Accuracy*
- Dishwasher — *99% Accuracy*
- EV Charging — *96% Accuracy*
- Water Heater — *95% Accuracy*
- HVAC — *93% Accuracy*
- Refrigerator — *99% Accuracy*

# Discussion

20 minutes

# Planning for Next Meeting: February 27

10 minutes

# Thank you

If further information is required, please contact:

Renee Hoyos
Principal Consultant
Impact Assessment & Environmental Justice
865.607.6618
Renee.hoyos@erm.com

ERMAMIStakeholdergroup@erm.com