REV Demonstration Project

# Orange and Rockland Utilities, Inc.

Innovative Storage Business Model

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## Quarterly Report

January 31, 2023

## REDACTED

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# 1 Executive Summary

## 1.1 Background

Orange and Rockland Utilities, Inc. ("O&R" or the "Company") launched the Innovative Storage Business Models ("ISBM") Project in January 2021. This Report details the progress of the ISBM Project to date, as well as lessons learned, recommendations and expected changes related to activities in the fourth quarter ("Q4") of 2022. O&R's Initial Filing Letter for the ISBM Project is available online at: https://www.oru.com/en/business-partners/business-opportunities/demonstration-projects

## 1.2 Key Updates

The ISBM Project Team made several adjustments in 2022 to address issues identified during ISBM Project implementation. These adjustments, particularly implementing Direct-to-Home ("D2H") marketing, led to increased interest and participation in the ISBM Project. Through Q4 2022, the Company made progress toward its goals. Capitalizing on increased interest in the ISBM Project, the Company and its partners installed 11 Brightbox systems in Q4 2022, bringing the total to 77. There are an additional 27 installations scheduled, which will bring the total systems online to 104 when completed in the near future. The Company met its goal of 50 installed Brightbox systems by the end of the second quarter ("Q2") of 2022 and the overall project goal is 300 systems.

A major driver for increased system installations has been resolving permitting issues. The Company continues to support engagement with Authorities Having Jurisdictions ("AHJs") to resolve permitting issues in the villages and towns where systems are sited.

To drive the increased number of installations seen throughout 2022, the ISBM Project Team has taken action to:

(i) improve the conversion rate of its D2H marketing efforts (conversation rate reflecting the percentage of customers that expressed interested and then had a unit installed);
(ii) increase the size of the total market; and
(iii) increase awareness through marketing opportunities.

For item (i), the ISBM Project Team has re-engaged with customers that expressed interest but whose houses had a logistical barrier (*e.g.*, tree coverage, issues with roof) to see if they had remedied the situation to allow for solar panel installation.

For item (ii), in Q2 2022 the Company opened up access to a new circuit to give Sunrun, Inc. ("Sunrun") access to 1,600 prospective customers. The Company will explore opening up access to additional circuits in the future.

For item (iii) O&R has continued an enhanced marketing campaign. O&R again met with Warwick's Chamber of Commerce, Sustainable Warwick (a 501c3 organization in Warwick whose primary goal is a sustainable community) and held an updated discussion with the AHJs. O&R will also have a presence at local community events to highlight the ISBM Project and O&R's partnership with Sunrun. The goal of this outreach will be to showcase Sunrun's Brightbox system and to inform and educate prospective customers about the ISBM Project's benefits. This effort may lead to more opportunities, allowing the ISBM Project to achieve its goal of 300 customers. O&R participated in a ride along with a Sunrun representative to showcase O&R's partnership with Sunrun. The feedback from customers was that having an O&R-branded car and an O&R representative present added credibility. O&R will go for additional ride alongs with a Sunrun representative in the future.

Following Brightbox system installation, the Company has supported the execution of required witness tests to grant permission to operate ("PTO"). This has uncovered some additional ISBM Project challenges, as outlined in Section 2.3 below.

O&R engineers had conversations with Sunrun to verify that the inverters on the Brightbox systems were set correctly. Sunrun updated the installation Standard Operating Procedure with instructions for the O&R required inverter settings. In 2023, Sunrun will work to ensure this process is implemented successfully and investigate remote solutions with the solar partner– being able to configure settings remotely.

While challenges such as permitting of storage assets and compliance with local law, supply chain issues, and the slow maturity of the storage market exist, the Company remains optimistic it can reach its ISBM Project milestones.

Despite the Company's optimism, however, this Report also discusses the actions it will take to adjust the ISBM Project as needed. This includes options to increase the total eligible customers. If these efforts fail, the ISBM Project Team will consider additional changes and modifications to the ISBM Project.

## 1.3 Project Overview

The ISBM Project is a REV Demonstration Project managed by O&R and Sunrun. As detailed in the Company's June 12, 2020, Initial Filing Letter, the ISBM Project aims to illustrate an innovative solar plus storage Virtual Power Plant ("VPP") business model to optimize and deliver clean energy, provide dispatchable grid services and reduce costs for customers. The ISBM Project tests the hypothesis that a collection of behind-the-meter ("BTM") solar plus storage systems can be aggregated to provide value to the host customer, electric distribution system, and bulk system services. Moreover, it explores whether this value can be allocated across participating customers, non-participating customers, utilities, and developers, producing cost efficiencies and increased engagement by all parties involved.

The building block for the ISBM Project is Sunrun's Brightbox – an integrated BTM residential solar plus storage product. Following successful customer enrollment, all Brightbox installations will be developed, designed, installed, operated, owned, and maintained by Sunrun. Sunrun and each individual participating residential customer ("Participant") enter into a lease agreement ("Program Lease Agreement") with respect to the Brightbox to be deployed at the Participant's residence. The Program Lease Agreement will have a 25-year term and will not require any down payment from the Participant. Participants receive a free LG Chem battery or pay Sunrun a discounted monthly rental charge (from Sunrun's usual rates) for a Tesla Powerwall battery – however the Tesla Powerwall units have not been available during Q4 2022. The price paid by Participants for solar energy under the Program Lease Agreement will be, on average, comparable to the Participant's current and projected monthly utility bill price. Sunrun will provide Participants with two pricing options for solar energy under the Program Lease Agreement, (i) a fixed rate option and a (ii) variable rate with an escalator option. This pricing will be maintained for the entire 25-year term of the Program Lease Agreement, notwithstanding the ten-year demonstration period.

Twenty percent of the Brightbox's battery capacity will be reserved to the Participant for backup power in the case of a system outage. Sunrun will use the remaining battery capacity to provide O&R with grid services for a ten-year period. The ISBM Project will employ algorithms and protocols designed to deliver optimal dispatch for the aggregated portfolio, maximizing the portfolio value among customers, the distribution grid, and third-party vendors. Under this business model, the flexible operating characteristics of distributed energy storage will be employed to obtain the highest value use of the resource at any point in time. Through a multi-use model, such as the one employed by the ISBM Project, energy storage assets can provide value to customers, the utility, and developers. As described in the following sections, this multi-use model will increase asset utilization to take full advantage of the asset's potential and improve economics to expand market size.

Maximizing the value of customer-sited solar plus storage VPPs by participating in multiple value streams will result in a larger market opportunity for energy storage systems. If BTM solar plus storage VPPs can be dispatched reliably to provide multiple services (*e.g.*, distribution benefits, backup power for resiliency, wholesale revenues), then more energy storage likely will be deployed by third parties as a result of the increased revenue potential. Upfront costs will be reduced, and investors will benefit due to the ability of the distributed system provider to monetize savings from avoided or deferred infrastructure upgrades due to optimal storage dispatch and aggregated distributed assets. Finally, operational data and lessons learned from the ISBM Project may be used to inform the development of wholesale market rules which facilitate greater value from residential energy storage systems and distributed energy resources ("DERs").

The ISBM Project's goals as established in the Initial Filing Letter are as follows:

- Sunrun will deploy the Brightbox to approximately 300 residential customers throughout O&R's service territory, focusing on 15 locations identified by the Company as having distribution value; and
- The ISBM Project will deploy approximately 2.9 MW of distributed rooftop solar and 2.1 MW/4.7 MWh of distributed energy storage over a ten-year demonstration period.

Currently, the residential storage market is maturing slowly. O&R aims to fill any market gap by providing an initial incentive to Sunrun. As the market matures and VPPs are allowed to participate in wholesale markets (*i.e.*, capacity, energy, and ancillary markets via FERC Order No. 2222), and earn revenues by benefiting the utility (*e.g.*, the Day Ahead Direct Load Management Program), an incentive from O&R will not be needed and the VPP concept will be sustainable. The ISBM Project will aim to demonstrate the wholesale and distribution benefits mentioned above. Due to the dynamic energy environment and policy advances anticipated over the ten-year demonstration period, the ISBM Project Team expects to make operational adjustments to optimize the value of the aggregation. Advances and corresponding adjustments will be highlighted and reported to the Public Service Commission during the quarterly reporting process, as discussed in Section 4 below.

# 2 Demonstration Highlights

## 2.1 2022 Activities

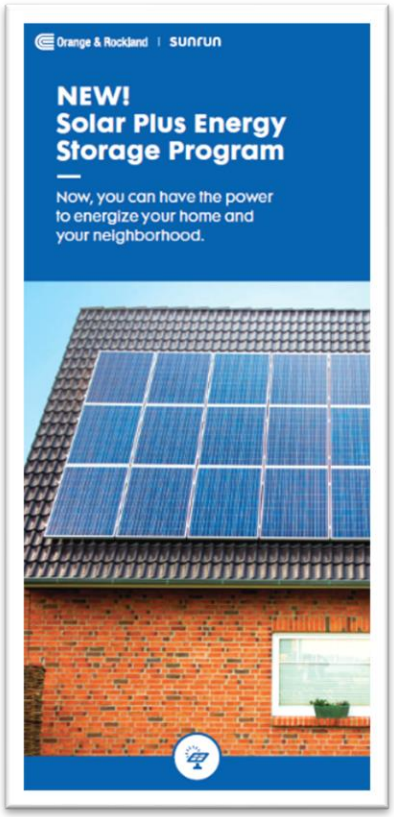
To date, the ISBM Project Team has completed six major activities, focusing most recently on outreach to local organizations in a renewed marketing push. In Q4 2022, the focus was on existing customers in the ISBM Project pipeline. For these customers, the ISBM Project Team completed design, installation, and the required witness testing to enable PTO. Driven by increased interest from the D2H marketing effort, the Company has experienced increased enrollment as detailed in Figure 2 below. Now at the end of Q4 2022, the focus will be on capturing new customers that are not in the ISBM Project pipeline. As of December 31, 2022, the ISBM Project achieved 75 system installations, and a cumulative total of 101 customers with approved plans for unit installation – those with approved plans will likely lead to full installation.

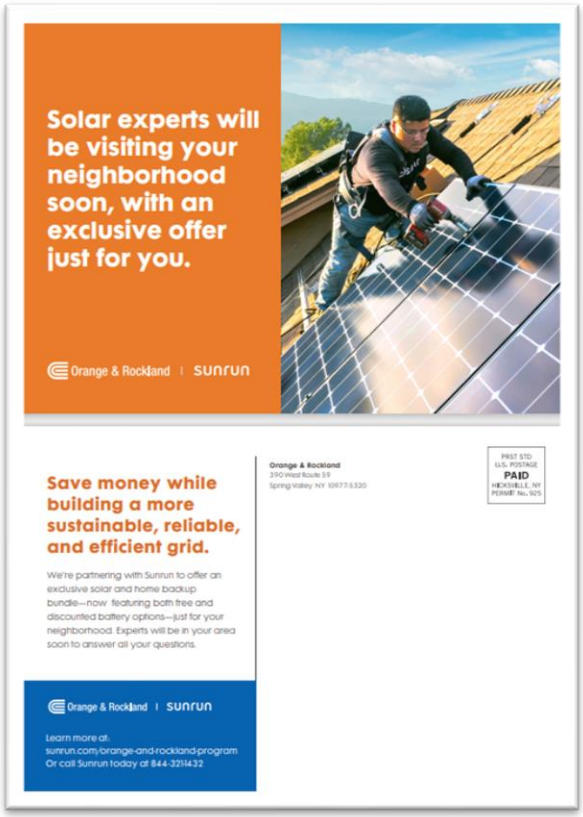
Details on the six major activities performed to date are set forth below:

1. O&R and Sunrun co-developed marketing materials specific to the ISBM Project, including:
    - Program brochures, postcards (Please see Figure 1 below);
    - Program-specific email correspondence;
    - Program dedicated toll-free number;
    - Program dedicated landing webpage; and
    - Program-specific materials with O&R and Sunrun branding.

Note: As of the first quarter ("Q1") of 2022 the co-marketing efforts were paused to focus on D2H marketing. Now at the end of Q4 2022, O&R is revamping the co-marketing efforts to include outreach to local organizations and maintaining a presence in the area at local seasonal hot spots. The goal is to capture new customers that have not been previously captured in the ISBM Project pipeline.

**Figure 1: ISBM Project Brochure (left) and ISBM Project Postcard for Direct-to-Home Launch (right)**




2. O&R and Sunrun performed outreach and education to local organizations:
    - Outreach to Sustainable Warwick and Warwick Chamber of Commerce at the end of Q3 2022 and again in Q4 2022.
    - The discussions covered the payment options for the Brightbox system, permitting process, roof quality and sunlight exposure, and how selling a home with a Brightbox system would work for the homeowner.
    - The feedback was very positive from participants.

    The results with the organizations have been positive. The conversation was followed by the submittal and approval of permits in the four villages and towns the ISBM Project Team engaged with:
    - Village of Warwick: 63 permits submitted (61 approved);
    - Town of Warwick: 53 permits submitted (51 approved);
    - Village of Florida: 15 permits submitted (15 approved); and
    - Town of Chester: 1 permit submitted (1 approved).

3. Battery fire safety training
    - Held three sessions with fire departments in Orange, Rockland, and Sullivan County
    - Presentation and training lead by fire-training experts (Energy Safety Response Group)
    - The feedback was very positive, and the firefighters were grateful that O&R was being proactive to talk to them about the battery storage systems in the service territory and prioritizing their safety

4. As of the Q4 2022 Report, the ISBM Project Team had contacted 5,500 customers within 3 of the 15 targeted circuits with initial marketing efforts. Initial efforts included sending postal mailings and emails. Sunrun has attempted to contact each eligible and viable home located within the first three circuits at least once. To address concerns about the size of the total addressable market, the Company opened up a new circuit in late May 2022 to increase the number of potential customers – 1,600 new addresses in total. Sunrun continues to work on canvassing and providing dispositions for the latest circuit, bringing the total customers contacted to 7,100. O&R will evaluate and consider opening another circuit to increase the number of potential customers.

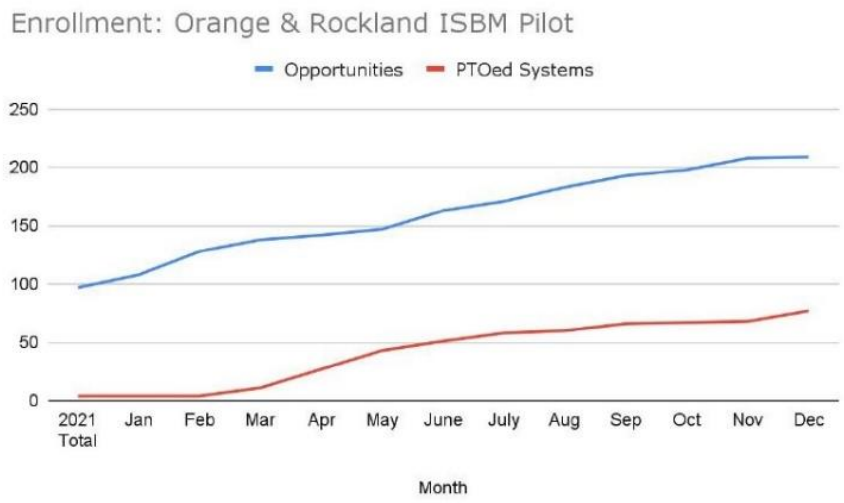
5. Performed D2H outreach – a Sunrun team was mobilized for door-to-door marketing.
    - Key results to date:
        - As of 12/31/22, Sunrun has identified 215 opportunities,[1] with 138 "closed won" contracts, and 111 customer-approved plans. Sunrun subtracts opportunities after a certain amount of inactivity. Sunrun has provided the most up to date snapshot of the milestones, so the 2021 total number has decreased.
    - Additional Statistics of the ISBM Project:
        - Municipal building permits requested: 109
            - 101 of these building permits have been approved, the remaining eight require an in-depth review
        - Interconnection requests: 104
        - Completed Brightbox system installations: 75

    Additional statistics have been recorded regarding the customer interaction and status of the opportunity (*e.g.*, close contracts, installs completed). Please see the latest quarterly report from Sunrun, a copy of which is included as Attachment A to this Report, for additional information on customer engagement results.

6. Completed required witness tests to enable PTO – Milestone completed in Q1 2022
    - 10 witness tests completed by 5/31/22
        - Activities included site inspections performed by the Company and any corrective actions required;
    - Resulted in issuance of PTO – 39 systems in total; and
    - Additional witness tests will be performed in Q1 2023.

[1] Note: an "opportunity" is when a customer indicates initial interest in further exploring the opportunity to subscribe to the ISBM Project. After a detailed sales consultation and proposal presentation, a customer signs an agreement to proceed with system design and final cost estimation, resulting in a "closed won" contract. Then an on-site audit of the customer's premise takes place, the design is developed, and a customer finalizes their intent to move forward with customer-approved plans by submitting an interconnection application to the Company. In addition, the customer signs a customer agreement (*i.e.*, agreement) with Sunrun that details expected costs and ISBM Project requirements. The expected costs include the power purchase agreement and battery costs, plus any applicable costs to install the Brightbox system (*e.g.*, electrical upgrades or roof replacements).

**Figure 2: Enrollment Reporting through end of December 2022**




- Dec '20 to July '21 - cumulative 5 sales with O&R co-marketing
- Aug '21 to May '22 - cumulative 117 sales with Direct to Home sales team
- Apr '22 - rate of new sales begin to decrease. Expect this is due to market saturation.
- June '22 - rate of new sales increased as a new circuit opened; however, limited TAM remains a challenge.
- October '22 - rate of new sales in new circuit leveling out due to many properties requiring full re-roofs or no viable location to install a battery.
- Sunrun installed on 75 homes in 2022. More than 20 times the estimated statewide annual average of 2-3 out of 5,000 typical homes.

## 2.2 Next Quarter Forecast

Q1 2023 provides a good measurement of general customer interest in the area for having a Brightbox system installed in their home. The Company's increased marketing and outreach should reach a large portion of the applicable population, and that should reduce the lack of awareness which may have led to a lower TAM.

Details on the planned activities and expected changes that will support the ISBM Project's success are set forth below.

**Checkpoints/ Milestones**

- Target of 101 residential installations online by the end of the Q1 2023

**Planned activities**

- Continue customer engagement, including door-to-door outreach;
- Continue to develop additional outreach and education materials to increase customer awareness of the ISBM Project;
- Address newly-discovered municipal code compliance requirements and understand impact to project success; most recently, this includes:
  - For indoor storage systems within "finished environments" (*e.g.*, a finished basement), there may be the need to install fire-retardant barriers around systems;
  - There is also a chance that the system's existing battery enclosure meets this code compliance requirement (negating the need to install a fire-retardant barrier around the system);
- Increase the widespread marking efforts by meeting with local influential organizations that have many local members, and to share information with all members;
- Support SunRun ride alongs and provide feedback to improve D2H conversion rates; and
- Monitor project performance and continue quarterly reporting.

## 2.3 Challenges

To date, the Company and Sunrun have encountered several challenges that have tempered customers' willingness to enroll in the ISBM Project and/or reduced conversion rates.

Every week, the Company meets with Sunrun to review the prior week's progress. The D2H marketing effort has provided valuable feedback about the ISBM Project and has helped the Company and Sunrun identify issues and challenges. The Company and Sunrun collaborate on methods and approaches to address the issues and challenges that arise.

The Company and Sunrun continue to face the following challenges, identified in the Company's Q3 2022 Report.

- Site verification visits uncovered numerous issues, making the required witness tests to provide permission to operate more difficult to achieve. Issues include:
  - Design revisions to match existing layouts;
  - Installations failed to remove equipment no longer in use;
  - Additional, non-sanctioned equipment added by installer or customer (*e.g.*, aluminum foil);
  - Multiple circuit breaks in use; and
  - Improper labeling of equipment.

- Customer characteristic may reduce the size of the total addressable market:
  - Some customers have a poor site – driven either by a bad roof or shading that results in underperformance by the Brigthbox system;
  - Certain customers live in neighborhoods that prevent engagement; this can be driven by Homeowner's Association ("HOA") rules or a "no-knock" neighborhood rule;
  - Certain customers do not have decision rights – they live in an apartment complex, are moving, or are not the owner; and
  - Certain customers simply do not respond to D2H marketing efforts.

- Customers questioning the legitimacy of O&R's involvement
  - The sales personnel from Sunrun need to explain the relationship between Sunrun and O&R; and
  - Sunrun salespeople are not official O&R employees and cannot provide O&R-branded badges or credentials.

# 3 Work Plan and Budget Review

## 3.1 Phase Overview

The Company's initial filing for the ISBM Project was based on four phases, as noted below. The titles and short description of each phase is included below for reference. Please see the Initial Filing Letter or previous Quarterly Report for additional details.

With the progress thus far and the continued customer adoption in response to the D2H effort, the Company remains in Phase 0, commissioning additional Brightbox systems. The Company will be moving to Phase 1 in Q1 2023 The ISBM Project Team plans to launch the testing phase of its virtual power plant now that the minimum required number of systems (10) have been given PTO (75 currently).

**Phase 0 - Pre-Demonstration Planning, Customer Adoption, and Site Selection**

Phase 0 will focus on residential host customer adoption and site selection for the solar plus storage VPP deployment, along with construction and commissioning of the assets. This phase will involve co-marketing efforts by both O&R and Sunrun to promote customer adoption of the Brightbox system. Co-marketing will be the leading driver in attracting initial customers. O&R will focus primarily on bill inserts, mailers, emails, and phone calls to alert its customers in the targeted territories. Sunrun will further promote the ISBM Project via a D2H marketing effort.

O&R and Sunrun will work together to identify customers who would most benefit from a Brightbox system installation. This includes customers with optimal load profiles and customers located in rural areas with a history of outages.

**Phase 1 - Stack Value with Day-Ahead Responsiveness**

Phase 1 will last approximately 12 months and will focus on implementing day-ahead dispatch notification for distribution services and demand response, and pre-established discharge for capacity. This Phase will include developing expected discharge windows and prioritizing distribution services in response to O&R's reliability needs. When no need is identified by O&R, Sunrun will operate each battery for Participant bill management and energy resilience.

Sunrun will respond to signals produced by O&R's Commercial Systems Relief Program ("CSRP") in the same way as enrolled demand response resources.

**Phase 2 – Intraday Responsiveness**

Phase 2 will last approximately 12 months and will seek to leverage improvements to load forecasting and system viability. This Phase will also realize less than two-hour notifications for all services and shape discharges to set points for more efficient dispatches. As a result of the enhancement to responsiveness, Sunrun and O&R will collaborate to narrow the discharge window to increase delivery capacity and allocate capacity across multiple hours, weighted based on expected load conditions.

During Phase 2, Sunrun will expand its battery management to include responsiveness to calls for both the CSRP and the Distribution Load Relief Program. The battery's capacity will be split 80/20, where 80% will be reserved for grid resiliency and the remaining 20% will offer Participant resiliency. Energy arbitrage will continue to be provided in winter and shoulder months on a scheduled basis that can be updated over time if anticipated seasonal peaks change.

**Phase 3 – Wholesale Market Participation and Localized Grid Services**

Phase 3 will last approximately 12 months and will focus on participating in the New York Independent System Operator's ("NYISO") wholesale marketplace and optimizing the operational model. Brightbox systems may also provide localized volt/var optimization and real-time responsiveness to adverse system conditions. This functionality will require integration with control software that O&R plans to replace or upgrade in the near future.[2] If it is more economically beneficial for the VPP to participate directly in wholesale markets, the VPP will be enrolled in the NYISO's regulation, energy, operating reserves, and/or capacity markets.

In Phase 3, advances made by O&R in same-day probabilistic load forecasting will be leveraged to better target the specific hours of the day during which the VPP will be needed. This will serve to increase the amount of capacity that is useful on a per unit basis, as well as to mitigate risk.

## 3.2 Updated Work Plan

In the Q3 2022 Report the Company had adjusted the timing for the work plan objectives to align with the updated ISBM Project targets. Based on the progress and target achievements within Q4 2022, the Company may need to adjust the timing of the work plan to align with the customer subscriptions and overall project status.

| Phase | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| **Objective** | Customer Adoption / Site Selection | Stack Value with Day-Ahead Responsiveness | Intraday Responsiveness | Wholesale Market Participation / |

[2] See Orange and Rockland Distributed System Implementation Plan ("DSIP"), pages 64-77. https://www.oru.com/-/media/files/oru/documents/our-energy-projects/distributed-system-implementation-plan.pdf?la=en

| | | | | |
|---|---|---|---|---|
| | | | | Localized Grid Services |
| **Timing** | July 2021-July 2024 | July 2022-July 2023 | July 2023-July 2024 | July 2023-July 2024 |

## 3.3 Updated Budget

As the Company has adjusted the ISBM Project's targets and objectives to align with the updated ISBM Project timeline, it also has updated the ISBM Project budget.

Innovative Storage Business Models Project Budget ($000)

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| **O&R Contribution** | $78 | $413 | $948 | $1,014 | $316 | $2,769 |

# 4 Conclusion

## 4.1 Lessons Learned & Recommendations

The ISBM Project Team has identified several lessons learned throughout ISBM Project implementation. These key lessons – driven primarily by the challenges identified in Section 2.3 above, inform the recommendations below, some of which are a continuation from the previous quarterly report.

- To address the issue of site verification: the ISBM Project Team will updated its standards and practices to improve the quality and consistency of Brightbox system installations:
  - The ISBM Project Team will periodically perform quality assurance checks to identify any recurring issues; and
  - As needed, the ISBM Project Team will look to make corrective action on these items.

- To address the issue of customer status: the ISBM Project Team has plans for certain addressable home types:
  - Status of "No Answer" or "Come Back Later": Sunrun sales representatives will return to the home until they receive a response;
  - Status of "Customer Moving": Sunrun sales representative will return at a future date;
  - Status of "HOA": a new solar access law supersedes HOA regulations prohibiting solar, however these homes are on hold while the HOA develops their approval process; and
  - Status of "Poor Site – Bad Roof" or "Poor Site – Shading": a subset of these customers may be addressable with a roof upgrade or vegetation management to improve access to sunlight.

- To make customers more aware of the project, the ISBM Project Team has plans to:
  - Continue to meet with local organizations to help familiarize the project with the local population;
  - Share printed and electronic material with businesses to distribute to customers;
  - When a customer calls Sunrun with an interest in a Brightbox system, we will inquire where they heard of the ISBM Program, to measure success of the marketing campaign;
  - Make people aware that there are referral incentives if their home does not meet the requirements for installation; and

- O&R employees will ride along with Sunrun salespeople in a branded O&R vehicle and their Company badges.

## 4.2 Latest Sunrun Quarterly Report

See Attachment A included with this filing.

## 4.3 Closing Remarks

The Company is looking forward to the continued customer interest and increased subscriptions to the ISBM Project that will solidify the opportunity for the Company to aggregate the Brightbox systems and provide grid-side resiliency and a backup energy source for its customers.

# ATTACHMENT A
# SUNRUN QUARTERLY REPORT
# [REDACTED]

# Orange & Rockland ISBM

# Quarterly Report

Campaign Dates:
10/1/22 - 12/31/22

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sunrun

# Summary & Key Insights

The main focus of the ISBM program in 2022 was to complete design, installation, witness tests, and PTO activities for existing customers in the project pipeline after achieving the goal of 50 installations. Sunrun D2H is canvassing four circuits 80-1, 80-2, 80-3, and 80-5 and providing disposition customer statuses to show learnings. Supply chain constraints have ended Tesla Powerwall 2 sales in this area as of June 2022*.

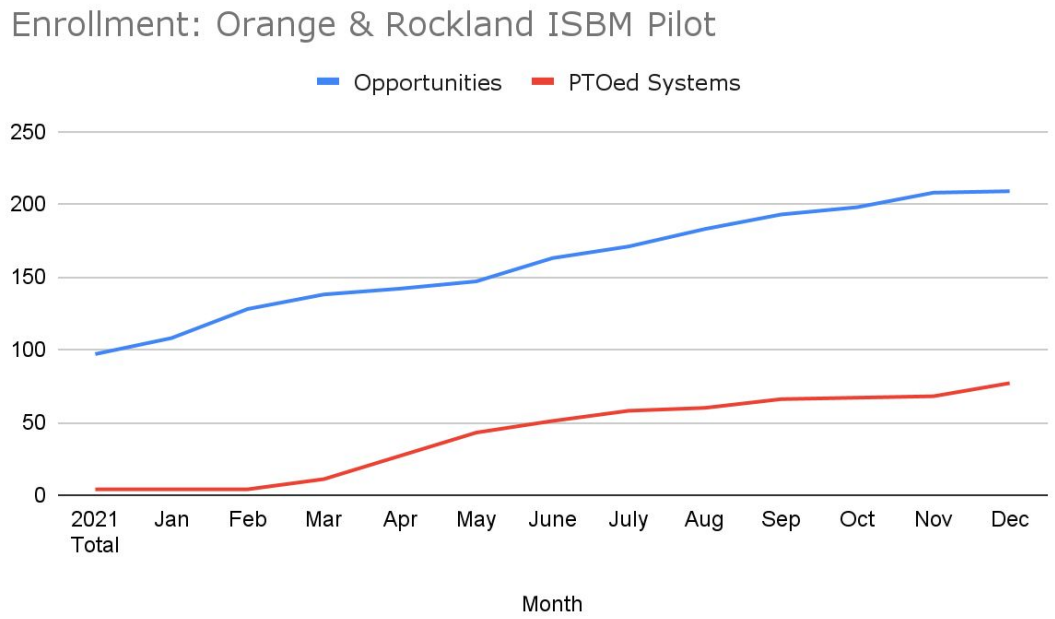
- 2022 program outreach has been driven by Direct to Home (D2H) outreach efforts, which originally launched in August 2021. In 2022 calendar year, the program achieved 115 new sales and 75 new system installations.
    - Sunrun hopes to work with O&R on collaborative co-marketing efforts to complement D2H efforts.
    - With D2H, Sunrun sales representatives canvas neighborhoods to sell home solar and battery systems. This is particularly effective for targeting specific distribution circuits for NWAs because customer eligibility varies street by street.
- Permitting issues with the authorities having jurisdiction (AHJs) have mostly been resolved; challenges persist for Village of Warwick systems sited in customer basements, leading us to avoid this siting location when possible. Additionally, sheetrock requirements for batteries in this jurisdiction requires considerable additional scope of work.
    - Village of Warwick - 63 permits submitted, 61 permits approved
    - Town of Warwick - 53 permits submitted, 51 permits approved
    - Village of Florida - 15 permits submitted, 15 permits approved
    - Town of Chester - 1 permit submitted, 1 permit approved
- Installed an additional 75 systems in 2022 to date.
- A major challenge to meeting enrollment targets is the limited Total Addressable Market (“TAM”) -
    - O&R opened up circuit 80-2 in late May 2022; Sunrun began canvassing these customers in mid-June. Many properties require a full re-roof prior to solar installation and/or installed sheetrock for battery installation.
- [redacted]



*This did not affect any sales in the project pipeline.

# Increase in rate of new sales

**Opening up 80-2 circuit in June 22 saw an increase in sales; however, limited TAM and AHJ battery restrictions remain a challenge.**




[redacted]

# Initiatives to Date

**Customer Outreach with Direct to Home**

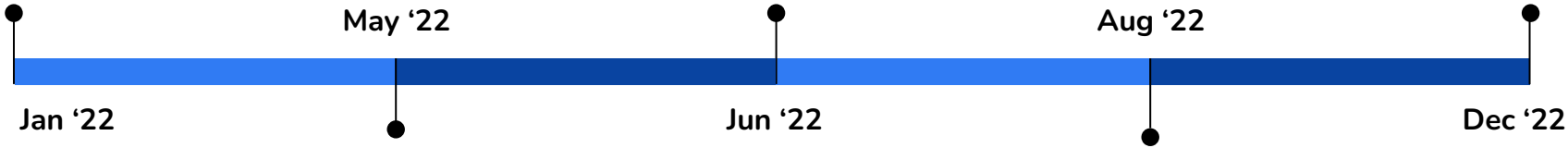
In 2022, Sunrun has continued customer outreach via the Direct to Home channel, and continued to progress the installation pipeline.

**Program Eligibility Expanded**

Program eligibility was expanded to include customers on circuit 80-2, this includes 1,600 new addresses. Direct to Home expects to begin outreach to these customers in mid-June.

**Inverter Requirements**

Sunrun updated installation SOP with instructions for the O&R required inverter settings. In 2023, Sunrun will work to ensure this process is implemented successfully and look into remote solutions with SolarEdge




**Completion of required witness tests**

O&R required a minimum of 10 witness tests to provide utility PTO to customers participating in the ISBM program. The witness test process includes site inspections performed by the utility, action items to remedy any onsite issues, and finally issuing PTO. This milestone was completed on 5/31/2022.

**Implemented interlock kit solution**

Sunrun worked to provide a standardized interlock kit solution to improve eligibility and customer interest. The interlock kit is used for customers to safely install a portable generator for well pump backup.

# Sunrun Deployment Progress to Date

## Jan 1, 2022 - Dec 31, 2022

| O&R ISBM Sales Jan '22 through December '22 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Month of | Prior to 2022 Total | Jan | Feb | Mar | Apr | May | June | July | Aug | Sep | Oct | Nov | Dec | Totals |
| [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] |
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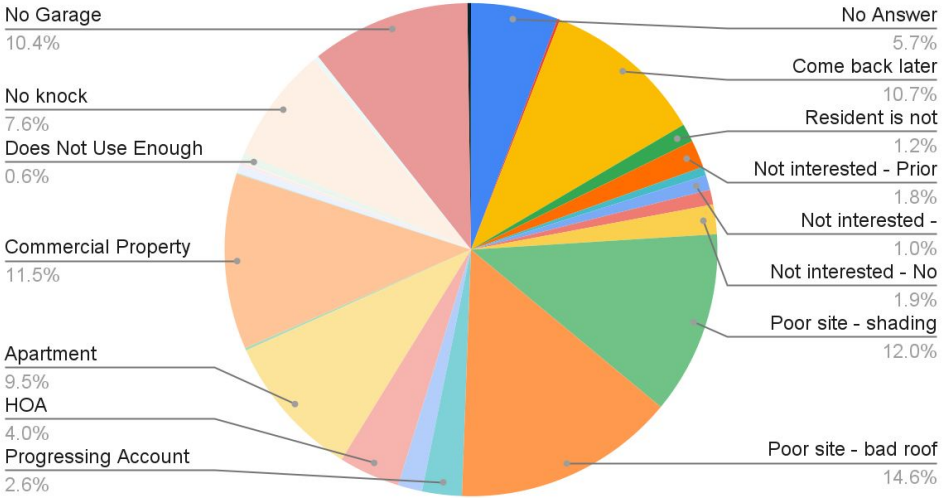
| Customer Approves Plans | 41 | 4 | 5 | 4 | 6 | 3 | 4 | 15 | 5 | 8 | 6 | 5 | 5 | **111** |
| Interconnection Applications Submitted | 38 | 6 | 4 | 5 | 4 | 5 | 4 | 9 | 10 | 4 | 7 | 3 | 5 | **104** |
| Permit Applications Submitted | 36 | 6 | 7 | 4 | 4 | 6 | 3 | 11 | 7 | 6 | 3 | 7 | 9 | **109** |
| Permits Approved | 31 | 7 | 5 | 7 | 5 | 3 | 3 | 7 | 8 | 5 | 6 | 6 | 8 | **101** |
| Installs Completed | 16 | 3 | 9 | 12 | 8 | 4 | 6 | 2 | 5 | 4 | 4 | 8 | 11 | **92** |
| PTOed Systems | 4 | - | - | 7 | 16 | 16 | 8 | 7 | 2 | 6 | 1 | 1 | 9 | **77** |
| Cancelled Contracts | 22 | 7 | 8 | 7 | 6 | 2 | 3 | 3 | 2 | - | 9 | 3 | 5 | **77** |

- Sunrun has attempted to contact each eligible and viable home at least once in the first three circuits 80-1, 80-3, and 80-5. Sunrun is continuing to canvas homes that are a good fit in order to understand if the customer is interested in moving forward. Additionally, Sunrun is continuing to work on canvassing and providing dispositions for all properties on eligible circuits.
- In June 2022, Sunrun began canvassing 80-2 causing an increase in Opportunities due to the new eligible properties .



[redacted]

# Customer Status




**Progressing Account** - Customers that are moving forward
**Come Back Later / No Answer** - Sunrun continues to canvas these customers

This chart describes how the total addressable market for this program is reduced by various issues, which can be categorized as follows -

- Limitations of the home
  - Commercial property
  - Apartment
  - Poor site - bad roof
- Limitations set by the AHJ
  - No knock neighborhood
  - HOA
  - Poor site - shading (In this market, this is primarily driven by tree trimming restrictions which lead to shading issues)
  - No Garage - This refers to homes that do not have a garage or basement for the battery.
- Limitations set by Sunrun
  - Resident is not homeowner
  - Existing solar
- Lack of Customer Interest
  - Prior poor energy sales experience
  - Perceived cost
  - Aesthetics
  - Has generator
  - No reason given

# Customer Status

**Some of these homes are still addressable while others are not -**

**Addressable Homes**

- No Answer & Come back later - The sales rep will return to the home until they receive a response
- HOA - new solar access law supersedes HOA regulations prohibiting solar, however these homes are on hold while the HOA develops their solar approval process
- Poor site - bad roof - a subset of these customers may be addressable with a roof upgrade
- Customer moving - The sales rep will return to the home at a future date

| Disposition Status | |
|---|---|
| No Answer | [redacted] |
| No Site Access | [redacted] |
| Come back later | [redacted] |
| Resident is not homeowner | [redacted] |
| Not interested - Prior negative energy sales experience | [redacted] |
| Not interested - Aesthetics | [redacted] |
| Not interested - Perceived cost | [redacted] |
| Not interested - Has generator | [redacted] |
| Not interested - No reason | [redacted] |
| Poor site - shading | [redacted] |
| Poor site - bad roof | [redacted] |
| Progressing Account | [redacted] |
| Existing solar / in-process solar | [redacted] |
| HOA | [redacted] |
| Apartment | [redacted] |
| Duplex | [redacted] |
| Commercial Property | [redacted] |
| Solar Farm | [redacted] |
| Customer Moving | [redacted] |
| Customer Prefers Purchase | [redacted] |
| Elderly resident | [redacted] |
| Does Not Use Enough Electricity | [redacted] |
| No knock neighborhood | [redacted] |
| Insufficient roof space | [redacted] |
| No Garage | [redacted] |
| Multifamily Home | [redacted] |
| No Garage/Shading | [redacted] |

# Revised Targets & Next Steps

**The intermediate program targets have been revised. We are now targeting:**

1. Target to install 25 systems in Q1
2. Launch testing for dispatch phase of virtual power plant
3. Investigate expanding customer eligibility to increase total sales and installs

**The next steps to successfully meet the revised targets and future program targets are:**

1. Continue to canvas eligible customers on circuits 80-1, 80-2, 80-3, and 80-5 and provide dispositions
2. Continue to progress accounts through to installation and PTO
3. Collaborate with O&R to amend current funding and timeline pilot parameters to achieve 300 system target
4. Collaborate with O&R to improve current pain points, such as TAM and customer interest, through co-marketing and community outreach