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November 10, 2020

MEMORANDUM

TO: Council Members

FROM: Tina Jayaweera

SUBJECT: Update on NEEA Accomplishments and Plans

BACKGROUND:

Presenter: Susan Stratton, Executive Director

Summary: The Northwest Energy Efficiency Alliance (NEEA) was created in 1996 to drive market adoption of energy-efficiency products, services, and practices for the benefit of utilities and consumers and the region. NEEA is a vehicle for Bonneville and regional electric and natural gas utilities to band together to produce results that would be difficult to accomplish without the collective voice of 140 utilities and 13 million customers. The scope of NEEA's work includes scanning for emerging technologies, assessing opportunities for market leverage, conducting research and product testing, providing data and analysis for regional and national code and standards organizations, and operating a set of savings initiatives for both electric and natural gas energy efficiency.

Susan Stratton will summarize NEEA's recent accomplishments and brief the Council on NEEA's 2021 operations plan, including implications of COVID-19.

Relevance: Since its creation in 1996, NEEA has delivered over 1,400 aMW of cost-effective energy efficiency through market transformation and the cost of savings from NEEA programs has been very low – about 2.7 cents per kWh. In addition, NEEA's work in emerging technologies has been

instrumental in providing data for many of the conservation measures new to the 2021 Power Plan.

Workplan: A.1.1 Coordinate with regional entities (e.g. NEEA, BPA, utilities, regulators) to ensure the regional goal for cost-effective conservation is achieved.

Background: The creation of the Northwest Energy Efficiency Alliance (NEEA) was the outcome of the 1996 Comprehensive Review of the Power system facilitated by the Council. The region's utilities, Bonneville and stakeholders decided to band together collectively to drive market adoption of energy efficiency products, services and practices for the benefit of utilities and consumers and the region.

More Info: <https://neea.org/about-neea>


➤ NEEA Updates & 2021 Operations Plan

Presented to the NW Energy Efficiency Council

*Susan Stratton
Executive Director, NEEA*

November 18, 2020


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➤ Cycle 5 Results (2015-2019)

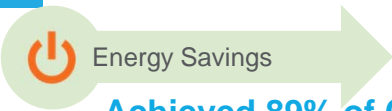
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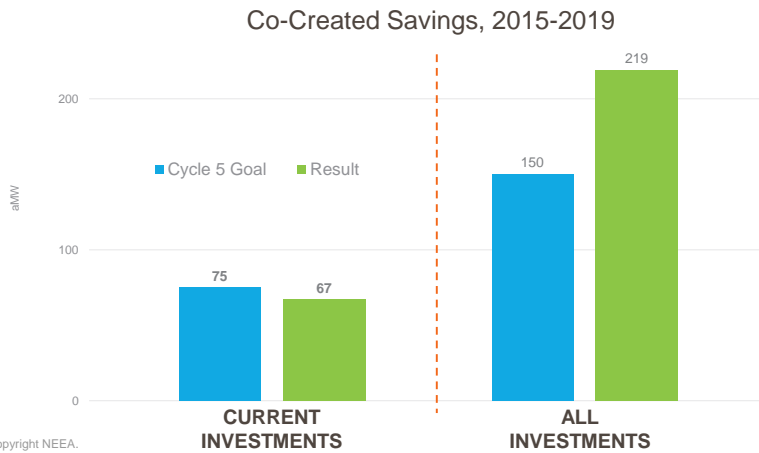
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Cycle 5: Electric Co-Created Savings



Energy Savings

Achieved 89% of Current Investments Goal and 146% of All Investments Goal



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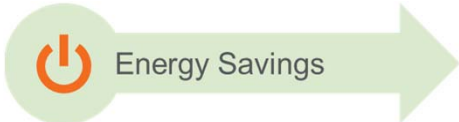
Drivers:

Influence in adoption of many new Standards

Expansion of utility SEM efforts across the region

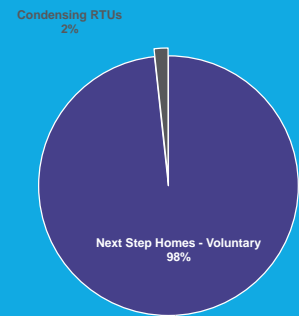
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First Natural Gas savings realized in 2019



Energy Savings

- 240K Therms of Co-Created savings reported to funders
- Business plan did not anticipate savings in the 2015-2019 cycle
- 2019 savings consisted of pilot activity in Condensing RTU program and late-cycle decision to invest in Next Step Homes



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Additional Value Beyond Savings

Cycle 5 Ended Strong:

- ✓ Added more than 500 aMW of savings potential into the emerging technology pipeline
- ✓ Increased product specifications and availability
- ✓ Grew access to data through platforms
- ✓ Fielded a Commercial Building Stock Assessment and launched the first End Use Load Research project in 30 years
- ✓ Prepared the market for the first commercialized gas HPWH product

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Cycle 6 Outlook (2020-2024)



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2021: BIG PICTURE

- Important year for Business Plan success
- Won't be business as usual
- Long-term future is stable

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Situational Assessment



Opportunities

- Strong foundation, organizational efficiencies
- Growth in emerging technology investment
- Uptick in Federal Standards activity
- State-level energy policies creating new opportunities
- Growing interest in Market Transformation

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➤ *Situational Assessment*

Risks

- Ongoing/ new COVID-19 impacts
- Other (potentially large) unknowns
- Misalignment between Northwest Market Transformation efforts and emerging models elsewhere
- Potential delays in Federal Standards rulemaking processes

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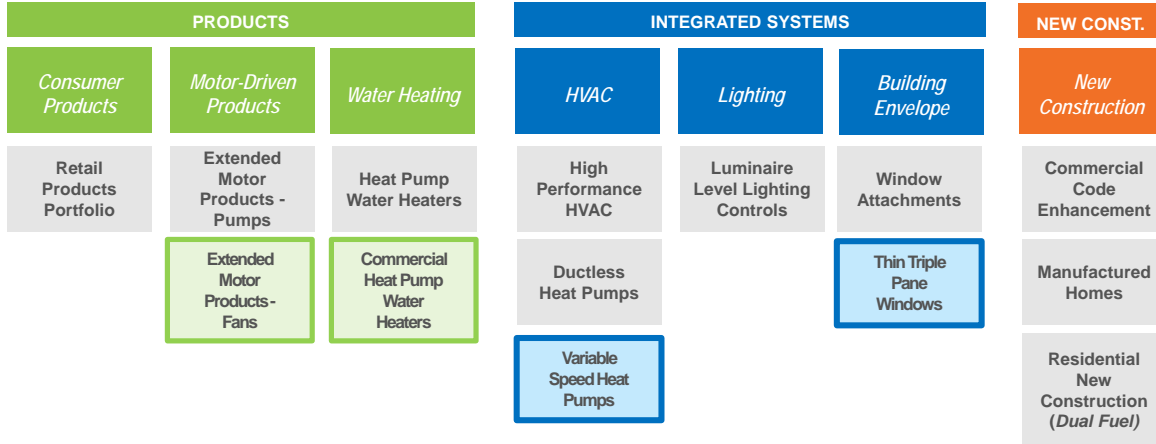
Electric Portfolio Overview



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20-year Electric Market Transformation Portfolio: Portfolio Development in 2021



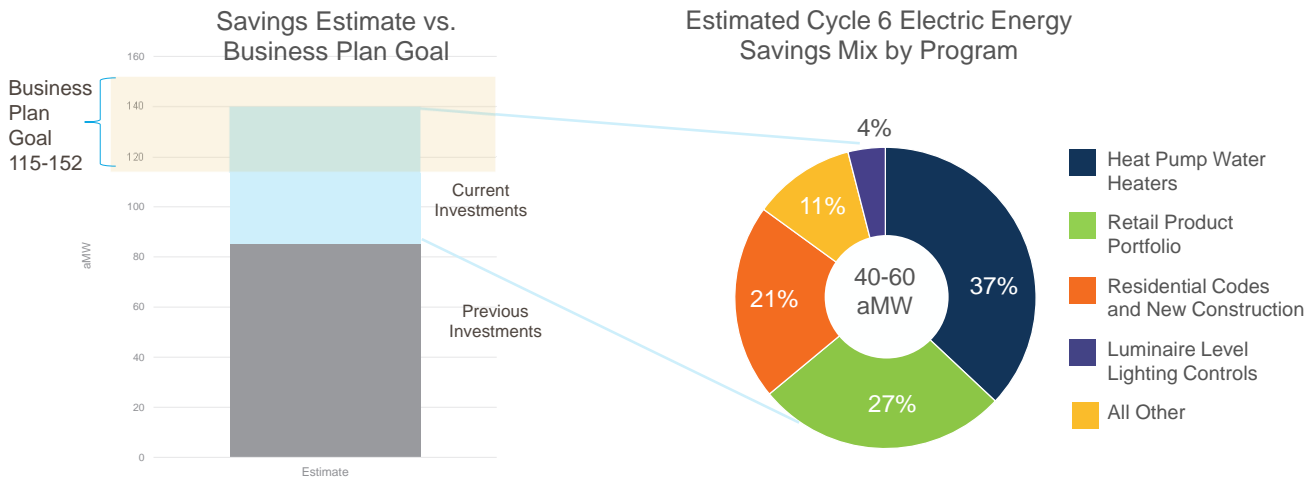
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Cycle 6 Co-Created Savings

Total 115-152 aMW Co-Created Savings Expected in this Cycle 6 (2020-2024)



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Emerging Technology



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Emerging Technology



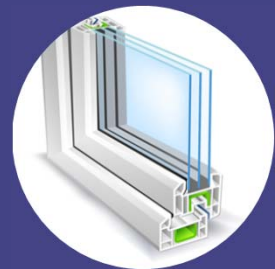
2021 Focus Areas

- HVAC and Water Heating products
- Maintain healthy pipeline



Key Activities

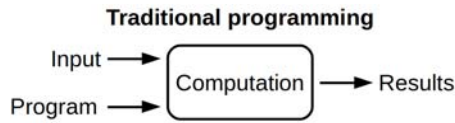
- Scan and assess technologies
- Advance promising products (i.e. Electric rooftop units, commercial hydronic systems, residential windows)
- Coordinate research



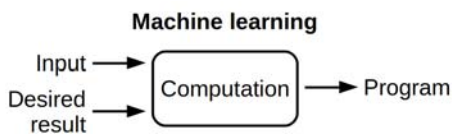
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Example: Artificial Intelligence



Luminaire Level Lighting Controls



BrainBox AI literally studies your building and learns how it operates, identifies every potential improvement opportunity and then acts on it. It requires no human intervention and reacts to changes in the built environment immediately to ensure the highest tenant comfort and energy efficiency, at all times.



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2021 Scanning List

Product Group	Products
HVAC	Variable Speed Heat Pump
	Alternative Refrigerants
	Micro Heat Pumps
	Heat Pump Commissioning Products
	Hybrid Heating Systems
	Air Quality Monitoring and HVAC control
	Cold Temperatures Heat Pump
	Thermostats
	Radiant Heating/Cooling
	Heat Recovery Ventilation
Inverter Driven PTHPs	
Water Heating	Heat Pump Water Heaters challenging installs
	DR Enabled Water Heaters
	Split System Water Heaters
	Commercial Water Heaters
	Hybrid Water Heaters
	Shower Heads
Building Envelope	Combination Space and Water Heating
	Window Attachments (films, blinds)
	Non-glass Secondary Windows
	Integrated Envelope Performance Metric
	Retrofit Wall System Improvements

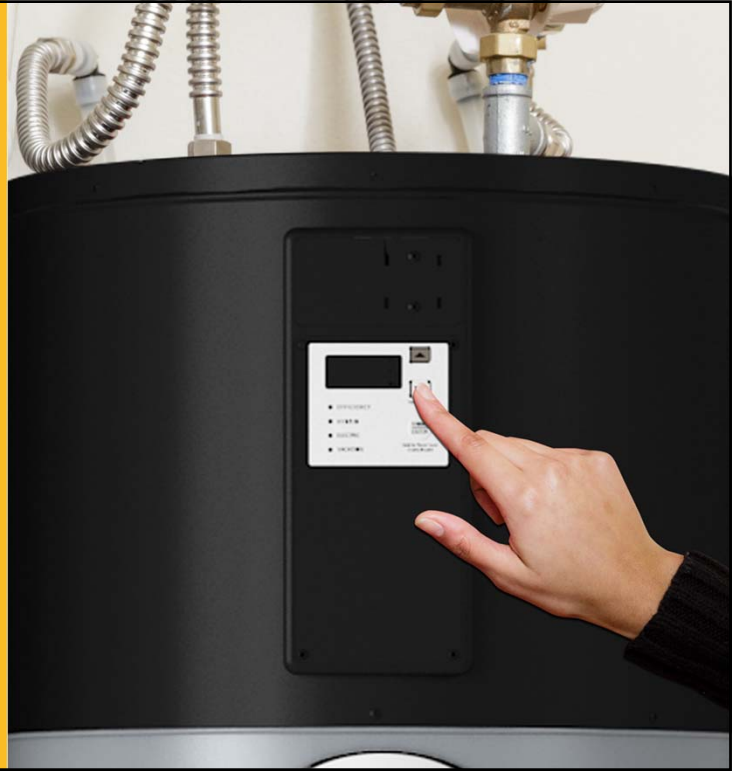
Product Group	Products
Lighting	Zonal Lamp Control & HVAC
	Intelligent Buildings
	Residential Lighting Controls
	Outdoor Lighting Controls
Consumer Products	LED UV Lighting Applications
	Clothes Dryer Innovations (UV, Ultrasonic, others)
Motors / Drives	Clothes Washer Innovations (CO ² , beads, combo)
	Induction Cooktops
	Home Office Equipment
New Construction	Extended Motor Products (compressors)
	Power Drive Systems
Other	Advanced Motors
	Integrated Design/ Performance Path Code
	Commercial and Industrial Power Supplies

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Portfolio Execution



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Products

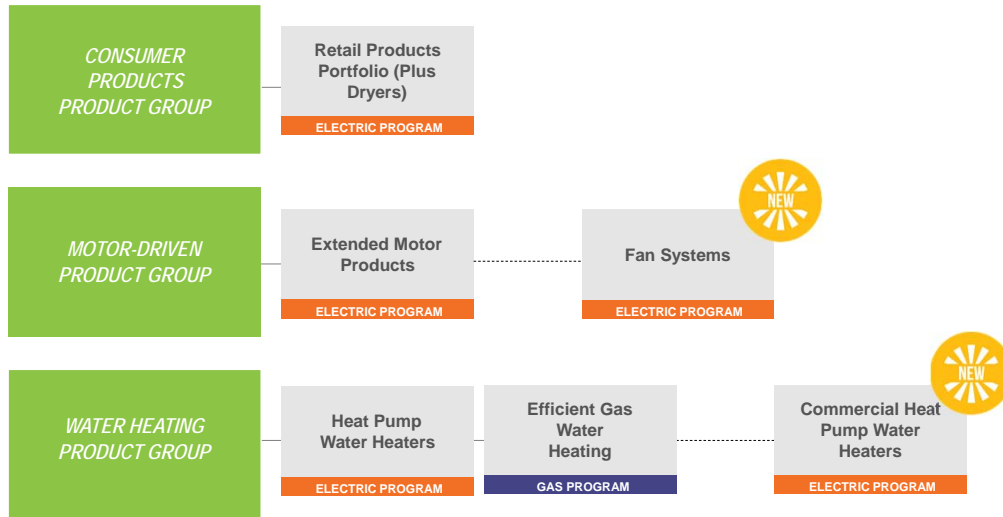
2021 Focus areas:

- ✓ Build awareness and increase adoption of HPWHs across the region
- ✓ Increase influence on the ESRPP collaborative
- ✓ Incorporate online sales data into Consumer Product strategies
- ✓ Increase regional opportunity in the XMP market through fans research



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Products



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Products: Key Activities



Water Heating Product Group

- Build consumer awareness
- Increase engagement at Retail
- Identify product champions around the region
- Align with EPA ENERGY STAR
- Build national coalition
- Develop plan to address multi-family and commercial



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Products: Key Activities



Motor-Driven Products Product Group

- Test program elements
- Raise awareness of Hydraulic Institute energy rating label
- Complete fan market research



Consumer Products Product Group

- Expand Northwest influence on ENERGY STAR RPP
- Expand understanding of online data and include output in product strategies
- Continue our involvement in federal and voluntary rulemaking process



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Integrated Systems

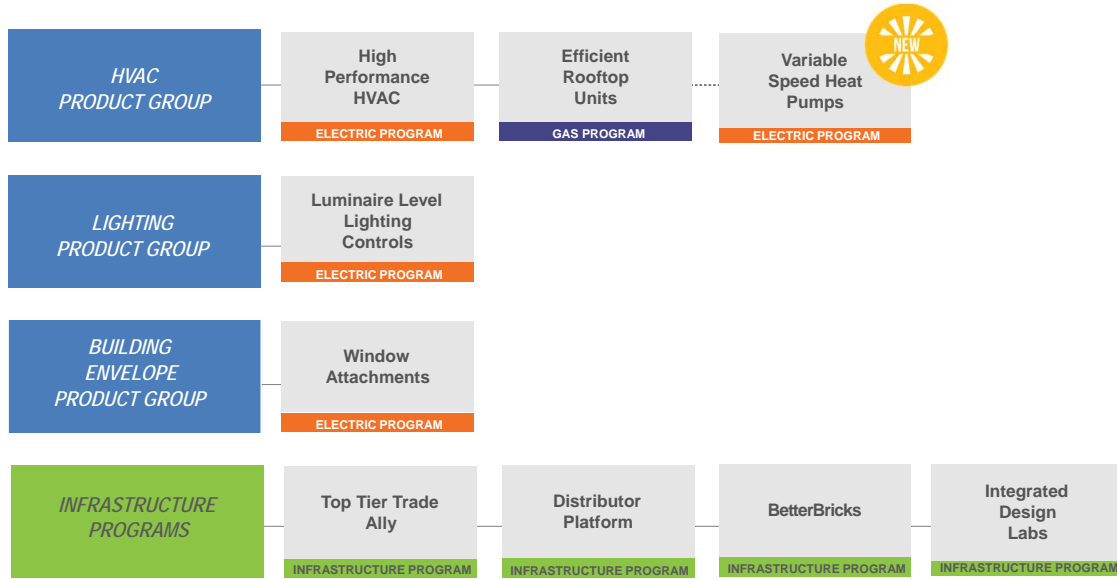
2021 Focus areas:

- ✓ Increase adoption of Luminaire Level Lighting Controls
- ✓ Advance new Variable Capacity Heat Pump program
- ✓ Support field installations for VHE DOAS and Window Attachments
- ✓ Expand full category sales data
- ✓ Leverage city and state level policies that are driving whole building retrofits



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Integrated Systems



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Integrated Systems: Key Activities



Lighting Product Group

- Increase supply chain engagement and regional adoption of Luminaire Level Lighting Controls
- Grow trade ally skills via Top Tier Trade Ally and Lighting Design Lab collaboration
- Maintain Distributor Platform relationships and access to full category lighting data



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Integrated Systems: Key Activities



HVAC Product Group

- Begin Long-Term Monitoring and Tracking of Ductless Heat Pump program and complete transition activities
- Advance new Variable Speed Heat Pump program with focus on new test procedure and rating system
- Develop VHE DOAS approach through 'supply-side' team installations, market engagement and utility partnerships

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Integrated Systems: Key Activities



Building Envelope Product Group

- Work with window manufacturers to gather full category sales data and build demand for AERC-certified products
- Support window attachments field test to validate Northwest performance and inform program interventions
- Engage with window manufacturers to increase product availability of thin triple pane windows

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New Construction & Codes and Standards

2021 Focus areas:

- ✓ Increase adoption of above-code measures
- ✓ Influence code change opportunities
- ✓ Move towards Zero Energy Ready performance by 2030



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New Construction: Key Activities



Residential New Construction

- Best practices training and education
- Zero Energy Ready homes demonstration
- Regional voluntary certification and utility programs



Commercial Code Enhancement

- Commercial code regional roadmap
- Market support of new code adoption
- Alignment between code compliance and utility programs



Manufactured Homes

- Value of NEEM+
- Retailer sales tools
- Long-term plan

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Codes and Standards



2021 Focus Areas

- Code advancement
- Education and training
- New test methods
- Federal Standards



2021 Key Activities

- WA and OR code adoption
- Online and on demand trainings and compliance tools
- New test standards for commercial gas furnaces and residential heat pumps
- Federal appliance and equipment energy standard rulemakings



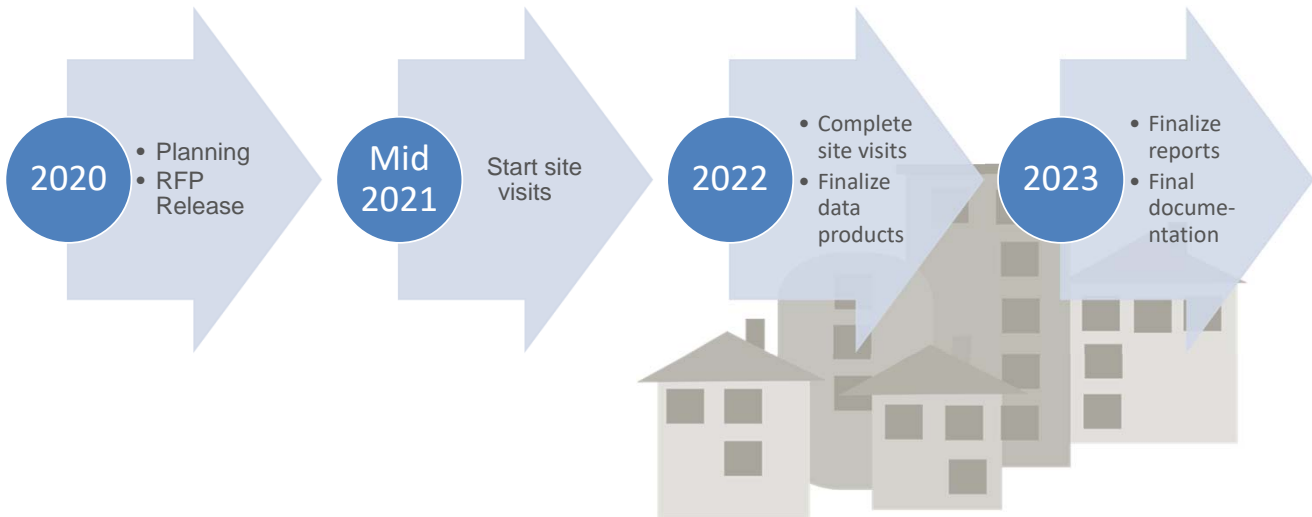
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Energy Use Studies



2022 Residential Building Stock Assessment (includes specially funded Multi-family Stock Assessment)



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End Use Load Research Study

Need to Know:

- Specially Funded Project
- Home Energy Metering Study (HEMS)
 - Install circuit metering equipment in 165 homes
 - Continued data collection, analysis
- Commercial Energy Metering Study (CEMS)
 - Install circuit metering equipment in 47 buildings
 - Continued data collection and analysis



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Questions?

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