

Residential Market Advisory Group

Kickoff Meeting

October 2, 2020



Welcome and Agenda

- Welcome and Session Overview
- Prior RMAG meeting report-out
- Pre-meeting survey results
- New York Climate Leadership and Community Protection Act (CLCPA) Update & Residential Markets Overview
- NYSERDA and Utility Residential Updates:
 - Utility Collaboration: JMC and New York Clean Heat
 - NYSERDA's Residential Initiatives
- Next steps – shaping the future

RMAG: Residential Market Advisory Group

A **forum** to share information and gain insights on issues facing the residential energy efficiency and clean energy markets for 1-4 unit existing homes.

Both a **source** and **sounding board** for new ideas and strategies

Participation is voluntary and we're pleased to be working with residential stakeholders like:

- Contractors
- Manufacturers
- Distributors
- Service providers
- Software developers
- Insurers
- Real estate agents
- Inspectors
- Lenders and financiers
- Policy and advocacy groups
- Trade associations
- Standards organizations
- Trainers
- Credentialing bodies
- Researchers & consultants
- Government entities
- Utilities & other energy providers

Charter

NYSERDA's Residential Market Advisory Group

Mission:

To bring together residential market actors to envision the next generation of residential efficiency solutions and to guide NYSERDA's development of offerings that spur market growth, deliver customer value and enable achievement of New York State's energy policy goals.

Objectives

- Maintain market awareness of public policy driving investments in energy efficiency and clean energy in the residential market.
- Share information on NYSERDA's current and planned activities to achieve those policy objectives
- Discuss opportunities and challenges associated with wide-scale deployment of energy efficiency and clean energy services for the residential sector
- Help guide the direction of New York State's existing and future solutions

Annual Meeting Virtual Format, Upcoming Sessions

- | | |
|----------------------|--|
| Oct 7 - 2-4pm | How to Normalize the Use of Heat Pumps |
| Oct 8 - 2-4pm | Ramping up to Meet our Clean Energy and Equity Goals |
| Oct 9 - 2-4pm | Building Back Stronger: The "new normal" residential market |
| Oct 16 – 10:30- Noon | Closing Session – breakout session report outs, summary and next steps |

2019 RMAG Meeting Follow-Up

In June 2019, we met to envision the future of residential efficiency and clean heating & cooling

That meeting was Pre-CLCPA
and Pre-COVID



What have we accomplished already?

RMAG website landing page

Resource for meeting information and work products

Simplify and reduce soft costs

Launched **Comfort Home Pilot** and streamlined **Residential Energy Audits**

Expanding use of **e-signatures** for customers

Heat pump support

Launched **New York Clean Heat** statewide jointly with NYSERDA and utilities

The screenshot shows the NYSERDA website landing page for the Residential Market Advisory Group. The header includes the NYSERDA logo and navigation links for Business & Industry, Communities & Governments, Residents & Homeowners, Partners & Investors, and Researchers & Policymakers. A 'SUBSCRIBE' button is visible with the text 'Pick a topic, get updates!'. Below the header, there is a search bar and a 'Find A Program' link. The main content area features the title 'Residential Market Advisory Group' and a description of its mission: 'The Residential Market Advisory Group's mission is to bring together residential market actors to envision the next generation of residential efficiency solutions and to guide NYSERDA's development of offerings that spur market growth, deliver customer value and enable achievement of New York State's energy policy goals.' It also provides information about the group's forum for sharing information and insights, and mentions that NYSERDA will provide periodic updates on issues relevant to the group. A list of 'Advisory Group Objectives' is provided, including maintaining market awareness, sharing information, discussing opportunities, and helping guide the direction of NYSERDA's existing and future solutions. The 'Membership' section states that participation is open to all parties with business interests aligned with enabling and providing energy efficiency and clean energy solutions to this market segment, including residential building contractors, energy-related product manufacturers, distributors, service providers, and software developers, among others. A note at the bottom indicates that while ad hoc sub-committees may be formed, participation in the Advisory Group is voluntary, and provides contact information for the mailing list.

What have we accomplished already?

Workforce Development

\$8.5 million Career Pathway Training Partnerships program established to train over 1000 New Yorkers in high efficiency heating, ventilation and air conditioning, and electric heat pump technologies

Make financing easier to access

- \$20 million of 0% Green Jobs Green New York (GJGNY) loans
- Work is underway to streamline the loan application process
- Companion loan product planned for rollout this fall

RMAG Working Group Process

We are building a working group process to engage with stakeholders on specific topics.

Phase 1: Coordinated by NYSERDA and feature regular check-ins with applicable NYSERDA teams

Phase 2: Working groups evolve to be self-sustaining and report back to NYSERDA periodically

RMAG Survey Feedback

Thank you!

Your input helps us understand how we can prioritize our efforts to help us all meet our goals

Discussion

- Are there additional market challenges facing the residential market as we pursue more aggressive energy efficiency and clean energy goals?
 - What are they?
 - How can the RMAG be leveraged to develop solutions to overcome these challenges?

Policy Update

Moving forward with New York's Climate Leadership and Community Protection Act

Climate Leadership and Community Protection Act (CLCPA) – Overview

- > Most aggressive greenhouse gas reduction goals of any major economy: 40% by 2030, 85% by 2050
- > 70% renewable energy by 2030, 100% zero-carbon electricity by 2040
- > Path to carbon neutrality
- > Codifies clean energy targets
- > Commitments to environmental justice, disadvantaged communities, and just transition
- > First statutory Climate Action Council

CLCPA by the Numbers, Targets Codified into Law

**Carbon neutral economy, mandating at least an
85% reduction in emissions below 1990 levels**

40% reduction in emissions by 2030

100% zero-carbon electricity by 2040

70% renewable electricity by 2030

9,000 MW of offshore wind by 2035

6,000 MW of distributed solar by 2025

3,000 MW of energy storage by 2030

185 TBtu on-site energy savings by 2025

CLCPA Climate Action Council

Multi-sector representation from across NYS, co-chaired by NYSERDA and DEC

- Develop scoping plan and recommendations to meet emissions targets
- Advisory Panels and Sub-Committee structure will address needs of each market sector and sub-group

Energy Efficiency and Housing Advisory Panel

Develop recommendations specific to the buildings sector for emissions reducing policies, programs, or actions that contribute to achieving the statewide emissions reductions established in the CLCPA, for consideration by the Climate Action Council for inclusion in the Scoping Plan.

Benefiting Disadvantaged Communities

Council to prioritize disadvantaged communities

- > Identify measures to reduce emissions of co-pollutants
- > Consult with Climate Justice Working Group and Environmental Justice Advisory Group

DEC rulemakings to implement the Council recommendations

- > Ensure no increase in co-pollutant emissions or disproportionate burden on disadvantaged communities
- > Prioritize measures to reduce emissions in disadvantaged communities

DEC to implement community air monitoring

- > In coordination the Climate Justice Working Group, DEC shall establish a community air monitoring pilot program in at least 4 disadvantaged communities by October 2022
- > By June 2024, DEC shall prepare a strategy to reduce emissions in disadvantaged communities with a disproportionate pollution burden



Investing in Disadvantaged Communities

Invest or direct available and relevant programmatic resources in a manner designed to achieve a goal for disadvantaged communities to receive 40% of overall benefits of spending on:

- > Clean energy and energy efficiency programs
- > Projects or investments in the areas of housing, workforce development, pollution reduction, low-income energy assistance, energy, transportation, and economic development

Receive no less than 35% of the overall benefits of spending on clean energy and energy efficiency programs, projects or investments (does not alter funds already committed)

Energy Efficiency

New Efficiency: New York

- > \$3.3 billion in accelerated utility investments authorized in 2020 through 2025
- > Includes \$450 million targeted at building electrification/heat pumps

Additional existing activities and support:

- > NYSERDA's Clean Energy Fund (\$2 billion over 10 years)

New Efficiency: New York

185 TBtu
end-use savings
in buildings and industrial sector

below forecasted energy use in 2025

by 2025

equivalent to fueling
and powering more than
1.8 million New York homes
by 2025

delivering **nearly one-third**
of the greenhouse gas
emissions reductions needed
to meet **40% reduction by 2030**



NYSERDA

New Efficiency: New York Strategies

- Enable market-based energy efficiency and building decarbonization
- Accelerated and better coordinated energy efficiency programs
- NYS Clean Heat – statewide support for building electrification
- Build a skilled workforce
- Broad-based impact via building codes and appliance standards
- Lead by example in State Buildings

CLCPA raises the bar for energy efficiency and building decarbonization

New York's Residential Market Overview

Residential Building Stock Assessment

New York homes energy profile

- > Nearly 70% of homes built prior to 1970
- > 65% heat with natural gas, 23% heat with oil or propane
- > 49% use furnaces, 42% use boilers
- > 90% use air conditioning
- > 11% have smart thermostats
- > Average air leakage is 12 ACH50
- > At least 22% have under-insulated in ceilings or walls

Energy Impact of the Residential Sector

4.3 million 1-4 unit homes within CEF territory

> 2.6 million market rate, 1.7 million LMI

Consumes 640 TBtu of energy and emits 35 million tons CO₂e annually

28% of New York's energy consumption across all sectors

Market Penetration

Customers served by NYSERDA's residential whole house programs 2001-2018

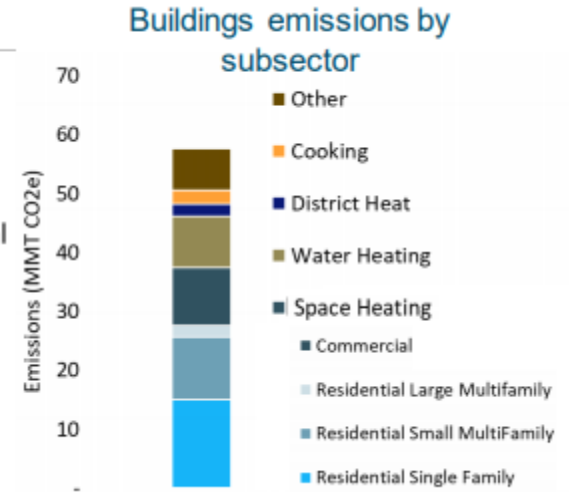
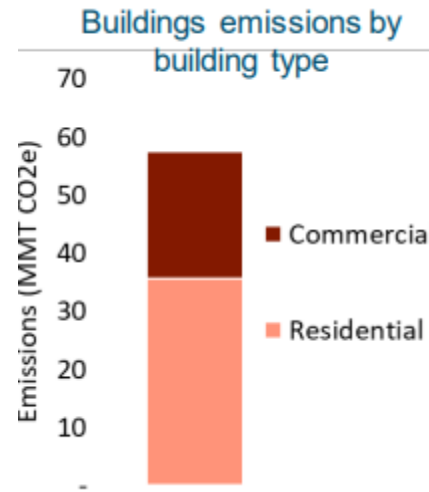
- > 140,000 market rate
- > 222,000 low and moderate income

Representing approximately 8% of New York's 1-4 unit building households

Additional 1-4 unit buildings have received improvements through other NYSERDA programs including NY-Sun and Clean Heating and Cooling

Impact of Residential Sector on Decarbonization Goals

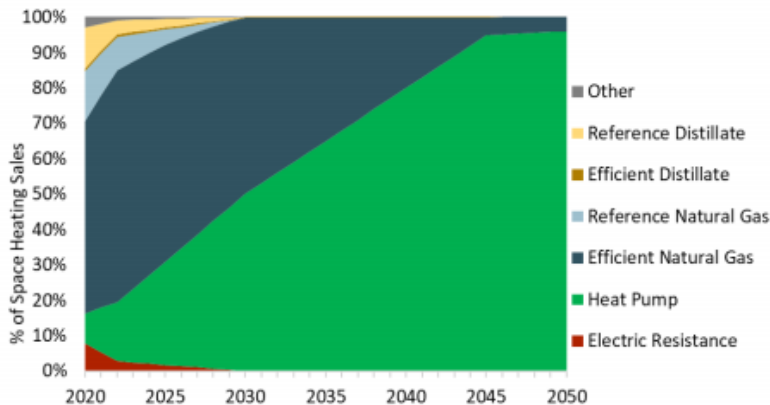
- GHG emissions in residential buildings are dominated by space heating and water heating
- Other uses include appliances, cooking, and other (e.g. fireplaces, lawnmowers, secondary heating)
- Upstate has larger homes with greater space heat demand
- Although nearly 40% of homes heat with oil, the majority of energy-related emissions are from natural gas



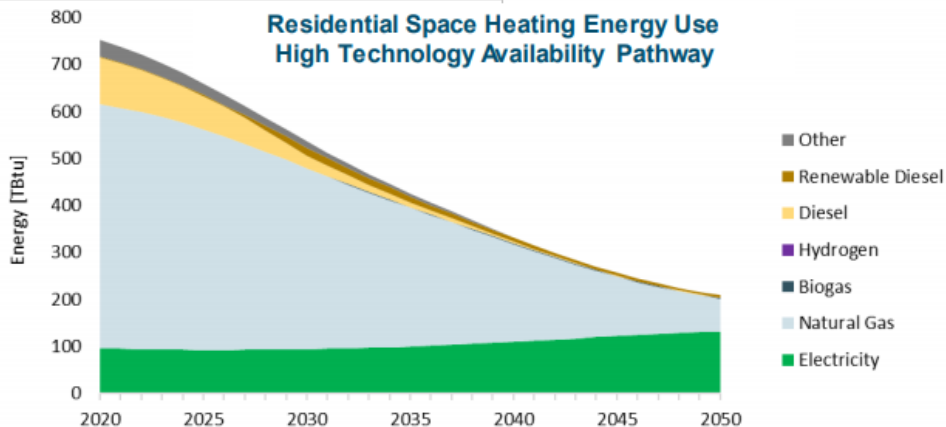
Timing of Building Electrification

Accelerated heat pump deployment is a lynchpin strategy to achieve our decarbonization goals by mid-century

**Residential Space Heating Sales
High Technology Availability Pathway**



**Residential Space Heating Energy Use
High Technology Availability Pathway**



Poll Question

**What is the biggest
headwind to ramping up
to meet our goals?**

NYSERDA and Utility Residential Updates

Single Family Residential Updates and Opportunities

- Remote Audit Challenge
 - Grants up to \$25,000 for contractors and \$200,000 for software developers and service providers, application deadline October 26
- Pay for Performance
 - Request for Proposals for Portfolio Managers to be issued mid-October
- Coordinated pilots with utilities
 - Westchester coordinated pilot with Comfort Home, ConEd, and Sealed
 - National Fuel Gas MyHeat pilot with Residential Energy Audits and Comfort Home
- Heat Pump Pattern Book
 - Initial draft patterns available for stakeholder review in Q4'20

Single Family LMI Program Redesign

- Currently EmPower NY and Assisted Home Performance have separate application, incentives, measure eligibility, and workflows.
- NYSERDA is creating a combined program offering with milestones starting with a combined program application will be introduced in March 2021 and income verification done by CLEAResult.
- The utilities and NYSERDA will create a single LMI offering for all New Yorkers including a centralized website for utilities to refer residents to NYSERDA's program and increased budgets.
- **Stakeholder engagement on qualified measure alignment and incentive structure is currently ongoing with the utilities, contractors, and community organizations.**

Ongoing Focus Areas for Program Redesign and Coordination Between LMI and Market Rate

- Unified audit for all NYSERDA single-family subsidy programs
- Single contractor portal for all NYSERDA systems to simplify workflow.
- Automated approval system for all projects
- Electronic signatures and tablet friendly EmPCalc
- Measure packages pilot -- similar to the Comfort Home approach
- Expand Empower Direct Install to moderate income households
- Integrate remote audits based on information gained from Remote Audit Pilot
- Single non-expiring Participation Agreement for all contractors
- Geo-eligibility: automatically qualifying single family homes for incentives based on location



Clean Energy Workforce Development and Training



NYSERDA

Adele Ferranti
Program Manager

PON 4463 – Career Pathway

Goals:

- Develop a pipeline of new technicians, installers, technical sales workers for high efficiency heating, ventilation, and air conditioning (HVAC) careers specializing in heat pump technologies
- Engage high school students, out-of-school youth, and unemployed or underemployed adults in HVAC/heat pump coursework leading directly to jobs or to more advanced technical training, certification, or degrees

Program Resources:

- \$8.5 million funding, maximum awards not to exceed \$550,000, 10% cost share required

Target Audience:

- Training providers such as high schools, unions, trade associations, community based and non-profit organizations and community colleges.
- Successful proposers will already have HVAC or related training programs and proposals will be focused on expanding into heat pump technologies and focusing on priority populations.

PON 4463 – Career Pathway

Career Pathway Requirements:

- Align with the basic, technical, and advanced skill needs of employers within the high efficiency HVAC/Heat Pump industry.
- Offer coursework leading to entry-level jobs, internships, and apprenticeships or more advanced technical training, certification, or degrees designed to ready students for entry-level employment)
- Provide counseling, including providing job preparedness and placement activities.
- Develop partnerships with businesses to provide real work experience through on-the-job training, internships, pre-apprenticeships, and apprenticeships, commitments to interview, etc.
- Market to target audiences with a focus on disadvantaged populations and have at least 50% of their trainees be from a priority population.



NYS Clean Heat

Statewide Heat Pump Program update

Ray Cotto, Central Hudson

Wendy MacPherson, NYSERDA



NYS Clean Heat

NYS Clean Heat

- **Statewide Heat Pump Program Adoption effort**
 - \$454M statewide budget through 2025
 - 3.6TBtu Target energy savings
- **Contractors participate through NYS Electric Utilities**
- **Uniform Program delivery**
 - Contractors, technology, customers, incentive structure
 - Only rebate *amounts* may differ by utility
- **NYSERDA Market Development Plan**
 - \$230M statewide budget through 2025
 - Portfolio of initiatives to achieve the statewide heat pump goals and build the market infrastructure for a low-carbon future



Joint Management Committee (JMC)

- **Maintain a common statewide program design and consistent implementation**
 - MAINTENANCE OF THE PROGRAM
 - COMMUNICATION REGARDING THE PROGRAM
 - COORDINATION OF STATEWIDE HEAT PUMP MARKET SUPPORT ACTIVITY
- **Made up of representatives from the Electric Utilities, NYSERDA**
 - Including rep from PSEG-LI
 - DPS staff serves in an oversight and consultative role
- **Two Co-Chairs, one from NYSERDA, one from the Electric Utilities**
 - Will Xai, Con Ed (XIAW@coned.com)
 - Wendy MacPherson, NYSERDA (wendy.m.macpherson@nyserda.ny.gov)
- **JMC meets weekly; DPS joins monthly**
- **Hold 2 formal stakeholder meetings per year**

Joint Management Committee (JMC)

Working Groups

- TECHNICAL CONSIDERATIONS
 - 2020 Energy Conservation Construction Code of New York State (2020 ECCCNY) issues resulting from Clean Heat Program focus on heating and heat pumps
- MARKETING, CONSUMER AWARENESS & EDUCATION
 - NYSERDA-Utility collaboration
- PARTICIPATING CONTRACTORS
 - Streamline the Participating Contractor process, uniformity on application process, data fields
- QA/QC
- NYSERDA MARKET DEVELOPMENT PLAN
 - Inform & coordinate on NYSERDA's Market Development Plan activities
- DATA AND REPORTING
 - Data quality, consistency, data sharing, joint program and market reporting

NYS Clean Heat - Lessons learned so far

- **Customer knowledge of Heat Pumps and how they work**
 - Most customers unaware of Heat Pump functions and benefits
- **Customer understanding and trust of modern Cold-Climate Heat Pump capability**
 - Customers initially unsure if they can trust Heat Pumps on coldest days
- **Educating the public of options: ductless/ducted units**
- **Displacement vs Replacement**
- **Education of home insulation and other factors impacting Heat Pump performance and costs.**
- **Market confidence**

NYS Clean Heat Program Participation

- **Heat Pumps must be installed by a participating contractor to be eligible for a rebate.**
- **Contractors must sign required Participation Agreements and submit COI forms to qualify.**
- **A Manual J/S will be required for each application.**
- **Statewide QA QC protocols/checklists.**
- **Incentives will be paid to the contractor with proof of customer incentive pass-through listed on the invoice.**

Becoming a Participating Contractor

- **Submit a NYS Clean Heat Statewide Heat Pump Program Participating Contractor Application.**
 - Select applicable service territories.
 - Select the type of contractor services.
 - Provide specified documents listed for selected contractor roles.
- **Submit required Participation Agreements**
- **Contractors installing only HPWHs do not have to be a Participating Contractor to submit an Incentive Application.**
- **GSHP Drillers must be a Participating Contractor but are not eligible to submit for and receive incentives.**
- **You can find the contractor application and the incentive applications for each utility at <https://saveenergyny.ny.gov/NYScleanheat/> or the utility websites.**

Typical Project Examples

Mini-Split



- **Two Units/Zones**
- **Partial Load**
- **\$6,500 Total Cost**
- **\$1,400 Incentive**
- **\$5,100 Net Cost**

Ducted ASHP



- **Two Units/Zones**
- **Full Load**
- **\$14,000 Total Cost**
- **\$5,900 Incentive**
- **\$8,100 Net Cost**

Geothermal



- **Single Unit**
- **Full Load**
- **\$25,000 Total Cost**
- **\$9,100 Incentive**
- **\$15,900 Net Cost**

Discussion

- Tell us about projects you are working on that can help us achieve our energy efficiency and clean energy goals.
- What additional initiatives, projects and programs could NYSERDA and RMAG members support to help us achieve our energy efficiency and clean energy goals?

The Conversation Continues...

Oct 7 - 2-4pm How to Normalize the Use of Heat Pumps

Oct 8 - 2-4pm Ramping up to Meet our Clean Energy and
Equity Goals

Oct 9 - 2-4pm Building Back Stronger: The "new normal"
residential market

Please register!

Send ideas to seed the discussions to resmarket@nyserda.ny.gov



NYSERDA

The Conversation Continues...

Interested in joining the RMAG Contractor Work Group?

Interested in starting a new topic or work group?

Contact resmarket@nyserda.ny.gov



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Thank you!