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Scaling California's Heat Pump Market

- Dave Lis, Director, Technology and Market Solutions
- California Energy Commission Workshop: Heat Pump Goals, Supply Chain, & Programs
- April 5, 2022

Northeast Energy Efficiency Partnerships

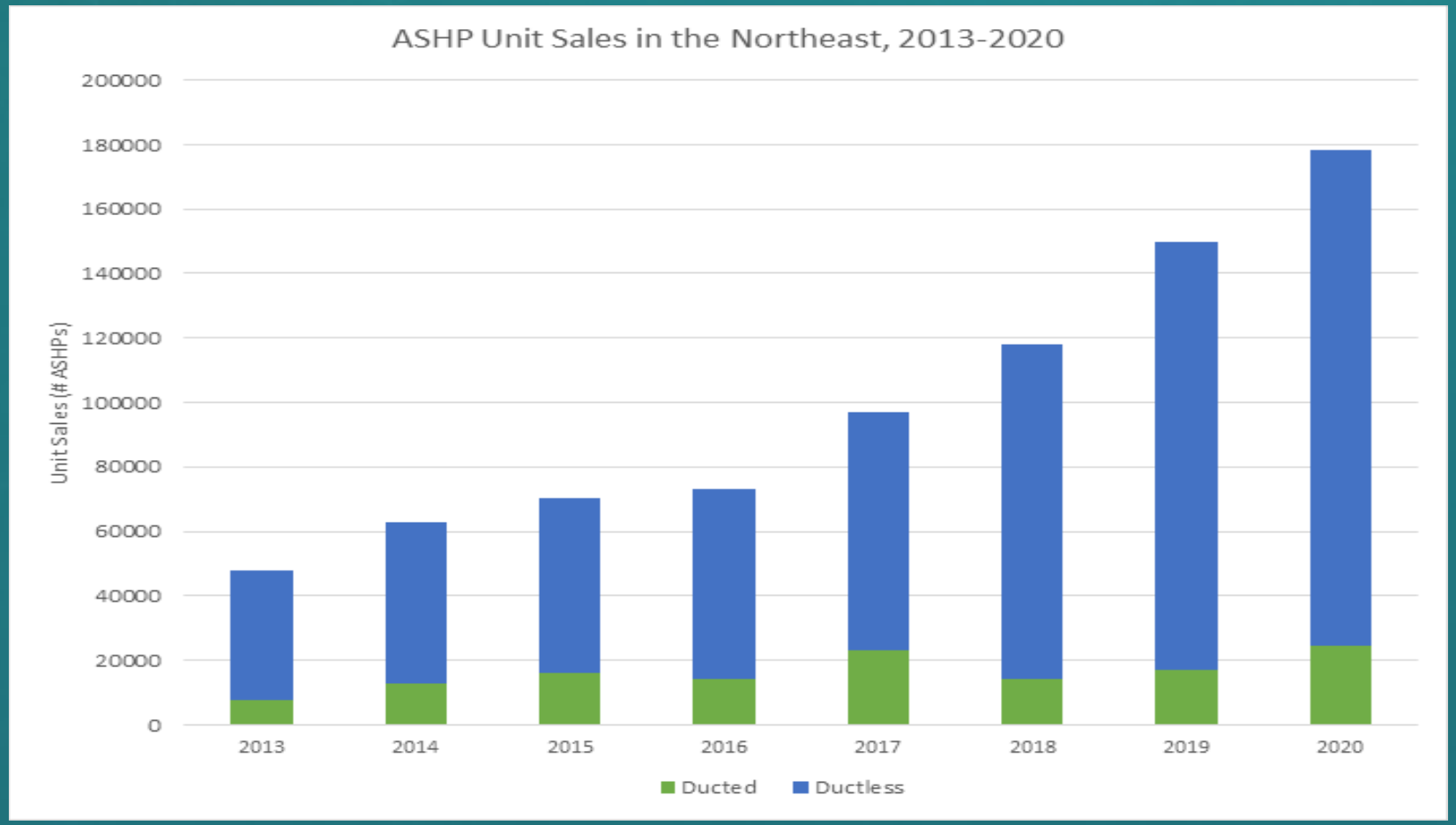
Mission

We seek to accelerate regional collaboration to promote advanced energy efficiency and related solutions in homes, buildings, industry, and communities.

Approach

Drive market transformation regionally by fostering collaboration and innovation, developing tools, and disseminating knowledge

Market Momentum Building



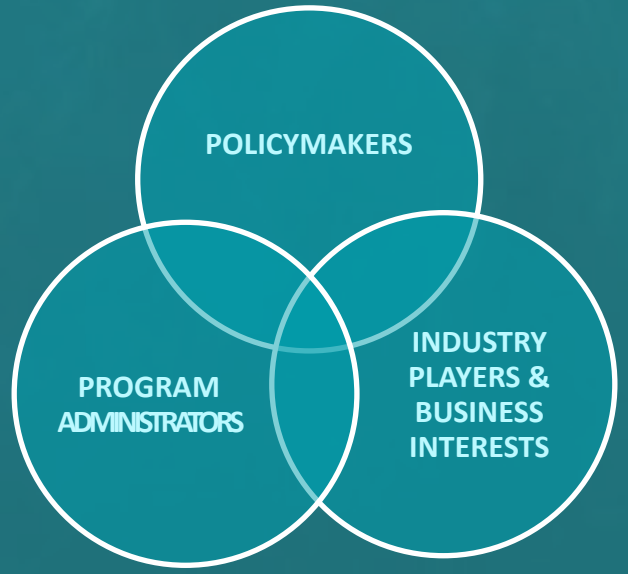
Sales in context

- Furnaces (235k)
- Boilers (160k)
- Central AC (220k)

NYSERDA data. Provided by D+R International.

Contributing Factors to Growth

Regional Heating Electrification Initiative



Current Market Transformation Strategies

1. Increase Consumer Education and Awareness
2. Increase Installer/Builder Awareness of, and Confidence in, ASHP through expanded training and education
3. Reduce Upfront Costs of installed systems through robust and aligned promotional programs and the support of alternative business models
4. Mobilize State and Local Policymakers to expand support for ASHPs
5. Promote Advanced Control technologies to allow automated coordination among multiple heating systems
6. Enable the promotion of climate-appropriate ASHPs through Improved Performance Metrics
7. Develop more accurate tools to predict energy, cost and GHG savings associated with ASHP installation through collection and analysis of Real World Performance Data

Hurry up….Slowly

- Balancing Speed and Quality
- Classic emerging technology challenge

Supporting Policies

- State Targets
- Fuel switching policies for EE programs
- Alternative Portfolio Standards (on Utility)
- New Construction codes/standards
- Workforce funding

Model Program elements

- Robust Downstream and Midstream incentives
- Consumer Education
- Workforce Education/Support
- Displacement vs. Whole home/building
- Quality Assurance elements
- Performance/market/program research

Looking ahead at Policies and Programs

- Ensuring Equitable adoption
- Building Performance Standards
- Clean Heat standards
- Emission-based standards
- Financing+ program implementer+ incentives+ BPS (Ithaca model)
- Supporting refrigerant transition
- Gas customer economics
- Leveraging Federal Infrastructure funding

Supporting emerging heat pump applications

- Packaged Terminal heat pumps
- Window/room heat pumps
- Packaged Roof-top Units (RTU)
- Reverse cycle chillers (Air to water heat pumps)

Opportunities for Collaboration

- Regional Energy Efficiency Organizations (REEOs)
- DOE/EPA/National Labs
- Consortium for Energy efficiency
- NASEO
- NGOs (Building Decarbonization Coalition, etc)

THANK YOU!

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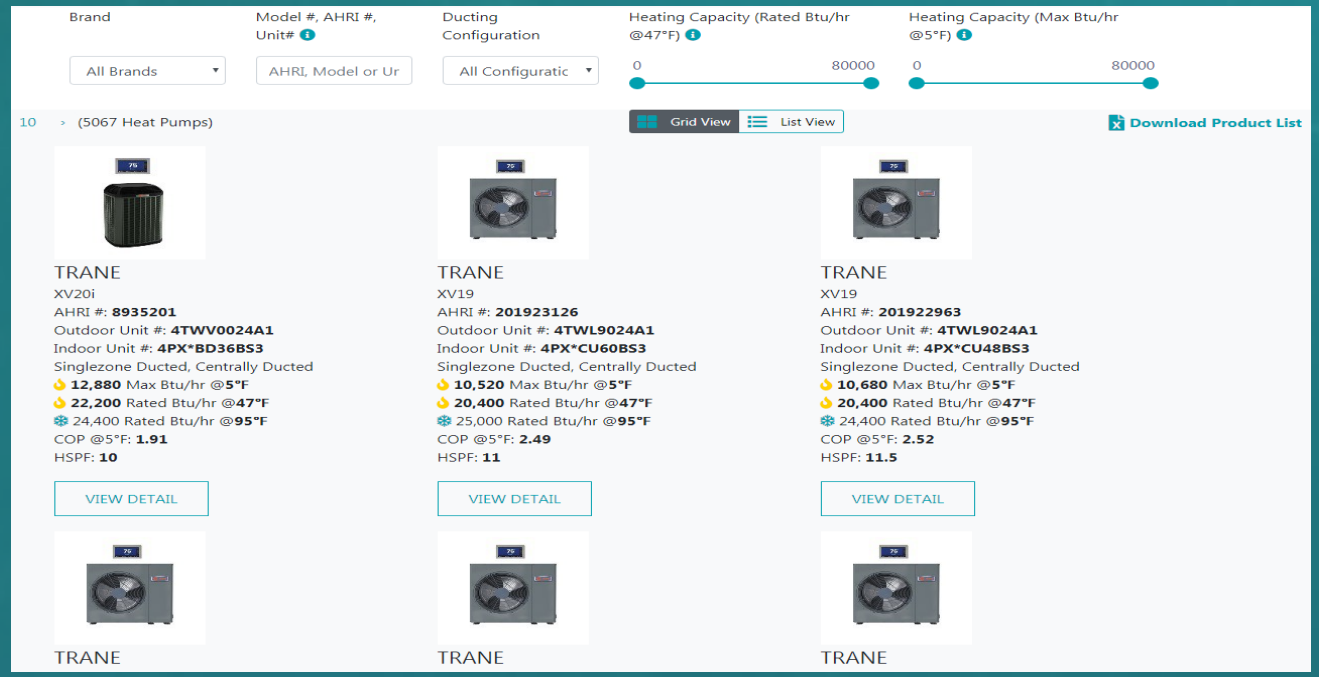
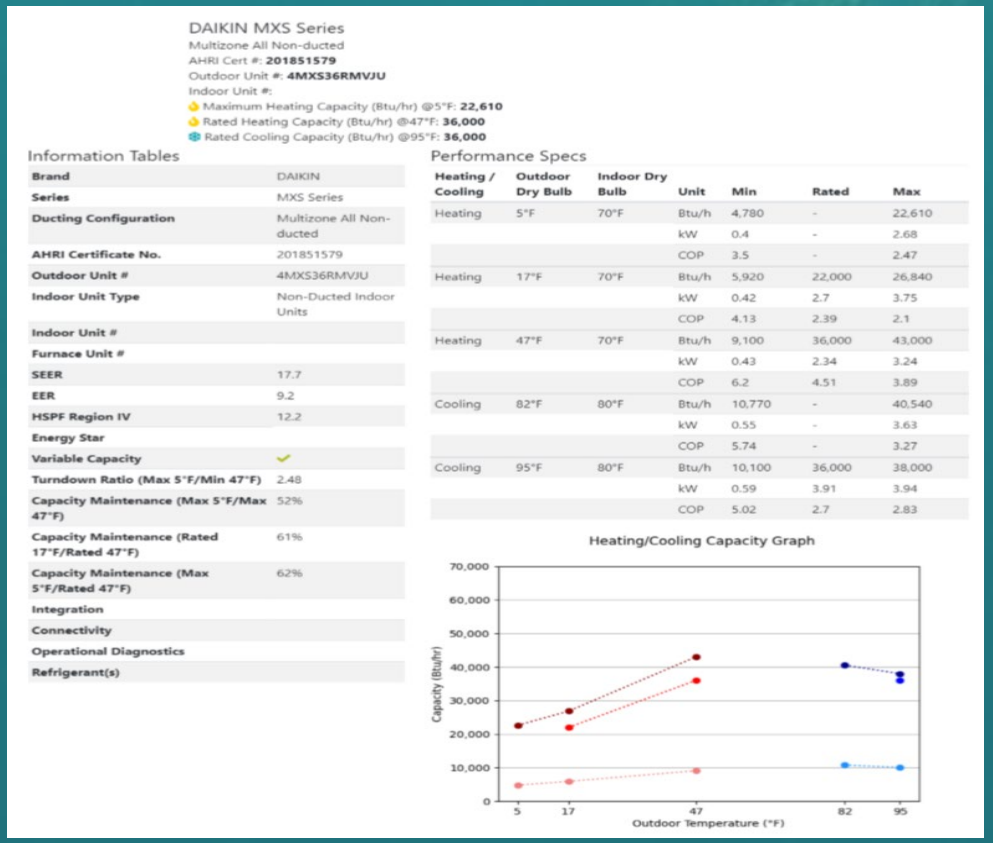
NEEP's Cold-Climate ASHP Product List

ashp.neep.org

One-stop-shop for cold-climate qualified air source heat pumps





Now 25,000+ systems from over 80 major brands

Consumer Resources –
NEEP Air Source Heat Pump Buying Guide

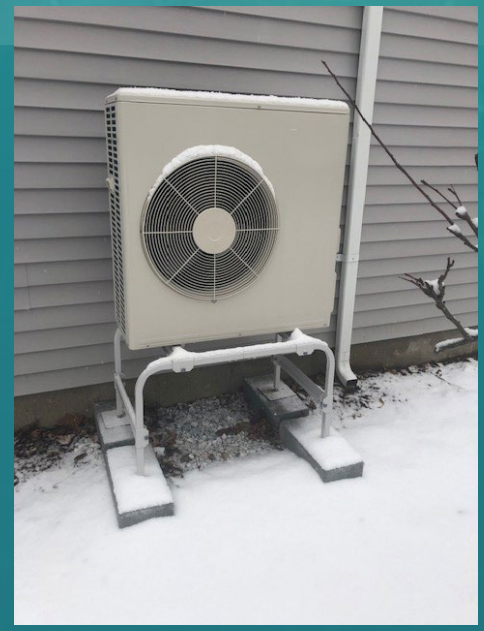
- Good resource for all audiences
- Especially for consumers who are looking to learn more about heat pumps
- Check out the O&M guide and Case Studies too

Design and Installation Resources

neep.org/ASHPInstallerResources

Air-Source Heat Pump Technology (R)Evolution

- Not your grandparents ASHP
  - Variable capacity compressors (inverter driven)
  - Sophisticated controls
  - Flash injection
- Delivering capacity and efficiency at low outdoor temperatures
- Air-to-Air- ducted, ductless and everything in between
- Air-to-Water – Variety of distribution options



Air Source Heat Pump Configurations

Ductless “Mini-Splits”

Conventional
Centrally Ducted

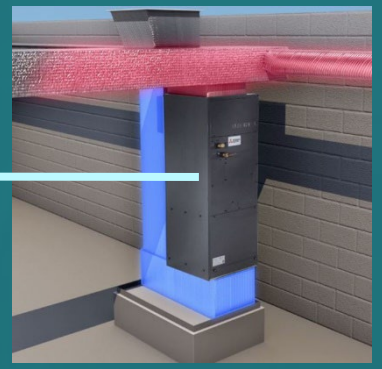
Single Zone

Indoor
Wall Unit

Outdoor
Condenser

Compact Ducted

Multi Zone



Mixed Ductless/Ducted