



Trends in Energy Efficiency 2021

April 14, 2021



Trends in EE

- **Trends in energy efficiency and beyond are shaping what future programs will look like**
- **Will impact what types of technologies and services are offered through efficiency programs as well as who/what the programs target:**
 - Climate action planning
 - Electrification
 - Active Demand Management
 - Equity
 - Work Force Development



What is Climate Action Planning and why is it Important for Energy Efficiency?

- Climate Action Plans are road maps that describes the specific activities that an entity (i.e. a state) will undertake to reduce greenhouse gas emissions
- Climate Action Plans in many states include energy efficiency as a key strategy for achieving its goals
- As a result, tracking and reporting emissions reductions in addition to energy savings is becoming a focus in energy efficiency programs
- Work is often needed to ensure energy efficiency programs and targets align with policy objectives in Climate Action Plans
- Efficiency programs focus likely to be on deeper savings measures and electrification



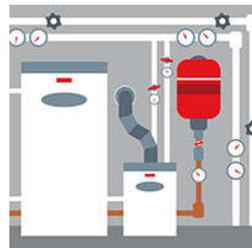
Climate Action Plan Example

- As presented by DNREC to the EEAC in July, Delaware is in the process of finalizing its climate action plan
- Goal of reducing greenhouse gas emissions significantly from 2005 levels by 2025
- DE Climate Action Plan will include solutions in a variety of areas including energy efficiency



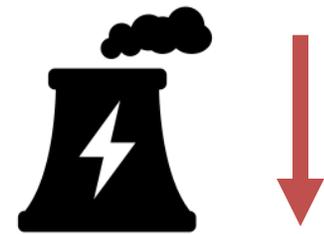
What is Electrification?

- Converting end-uses that currently use fossil fuels to electricity instead
 - Also referred to as “strategic” or “beneficial” electrification
- Electrification improves efficiency and helps reduce total energy usage
 - Primary focus often on space-heating, but also opportunities to electrify water-heating, and cooking
 - Also includes transportation



Why is Electrification Important?

- In addition to energy savings targets, many states have enacted GHG emissions reductions targets
 - Electrification is a key strategy for achieving those goals
 - As the electric grid becomes cleaner and more renewable energy sources generate power, GHG emissions from electric use decline
- Electrification can also provide cost savings to customers



Electrification Examples



Heat Pumps can replace traditional fossil fuel boiler and furnaces



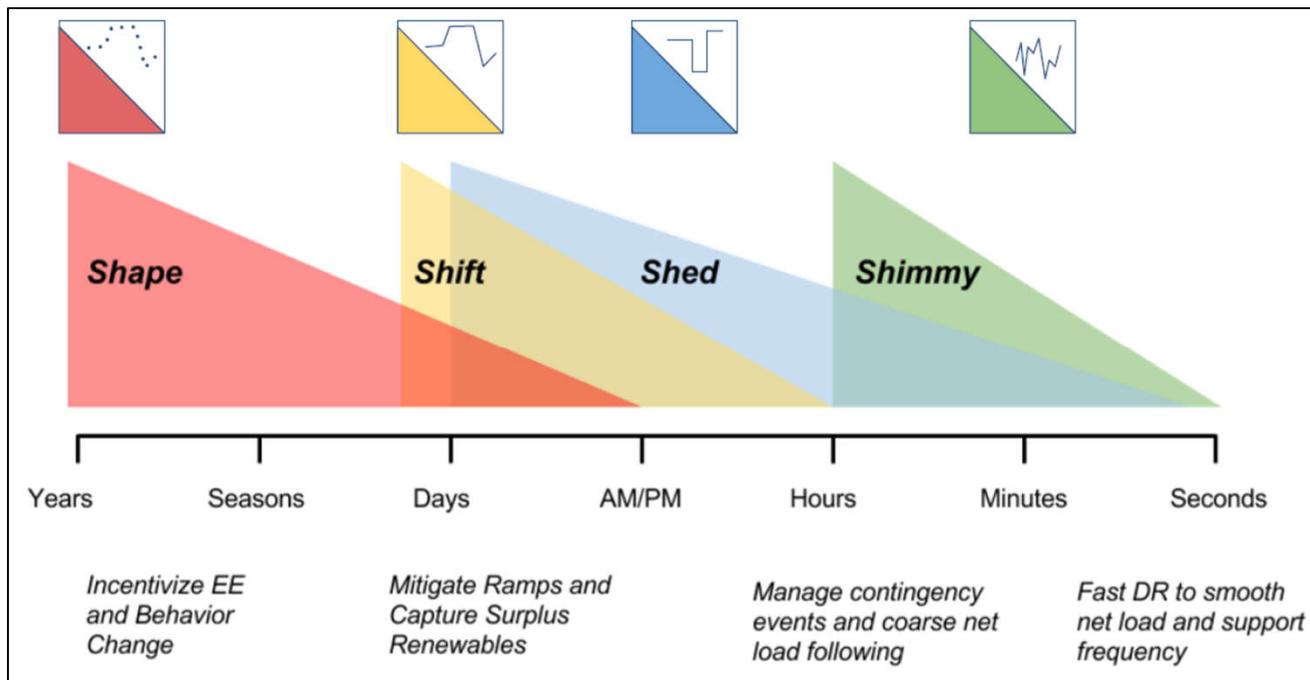
Electric stoves can be used instead of gas stoves

New buildings can be designed to be completely electric based – often being extremely cost effective



What is Active Demand Management (ADM)?

- ADM refers to the dynamic management of end-use customers' energy demand using information, incentives, and technology to help ease a constrained grid
- Often focused on reducing peak electric usage, but Gas ADM also be a focus for regions with gas constraints



Why is Active Demand Management important?



- Reduces emissions since dirtier fuel sources come online during peak times
- Improves reliability
- Mitigates price volatility
- Avoids additional investments in energy generation and peak capacity
- Defers investments in transmission and distribution infrastructure



Active Demand Management Examples



Wi-fi connected thermostats can be remotely accessed to reduce air conditioning load at peak hours

Battery Storage can store energy during off-peak hours and discharge them during peak hours

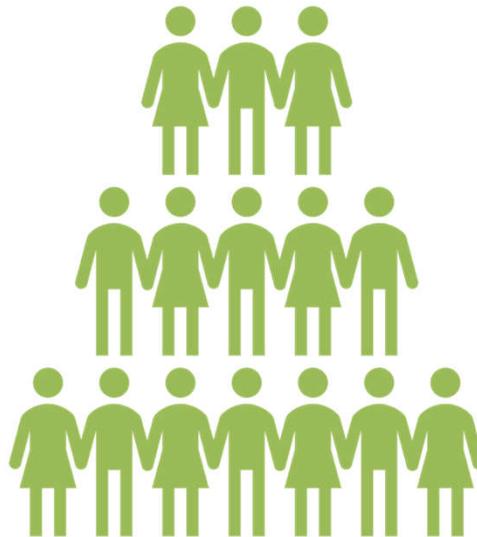


Utilities can reward electric vehicle owners for giving utilities limited direct control of their charging during peak demand events.



What is Workforce Development?

- Taking an active role in creating a more capable workforce for a given industry
- WFD often involves partnerships with vocational and trade schools, apprenticeship programs, and continuing education/certifications for existing workers



Why is Workforce Development Important?

- Efficiency programs rely on those in building trades, construction, engineering, and service sectors to be successful
- It's important that workforce has the necessary skills and expertise
- In many places, not enough professionals entering the workforce to meet future demand
 - Example: HVAC technicians



Workforce Development Example

- California Workforce Education & Training (WE&T) programs
 - Support K-12 schools in driving awareness in EE careers
 - Help disadvantaged communities to enter the EE workforce
 - Collaborate w/ Post-secondary educators like community college and certification programs
 - Technical upskilling of existing workers through continuing Ed
 - Long-term strategic planning of workforce needs with department of labor and education



What is Equity?

- Fairness and equality in outcomes, not just in supports and opportunity.

EQUALITY VERSUS EQUITY



In the first image, it is assumed that everyone will benefit from the same supports. They are being treated equally.



In the second image, individuals are given different supports to make it possible for them to have equal access to the game. They are being treated equitably.



In the third image, all three can see the game without any supports or accommodations because the cause of the inequity was addressed. The systemic barrier has been removed.

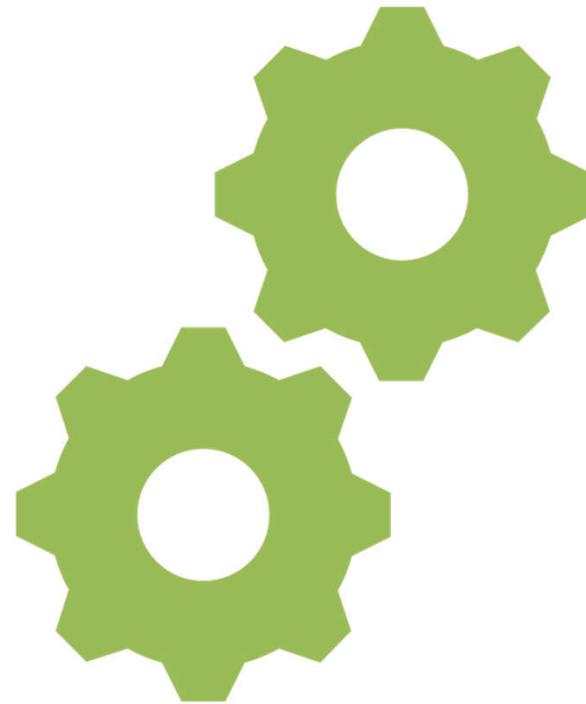
What is Equity in Energy Efficiency?

- In energy efficiency, equity is about ensuring that all residents and businesses are adequately served by efficiency programs, including those who historically have not been:
 - Low and moderate income customers
 - Renters
 - Non-English speakers
 - Small businesses
- This means addressing barriers and challenges that have impacted specific communities



Why is Equity in Energy Efficiency Important?

- Many customers pay for energy efficiency services, but don't receive the benefits from them
- Efficiency programs can improve health and comfort and create jobs for those in disadvantaged communities
- Low-income families, renters, and people of color often pay more in energy costs than other households
- Climate change will disproportionately affect some communities and energy efficiency can help alleviate these disparities



Example of Strategies for Achieving Equity in Energy Efficiency

Developing programs designed to reach all customers (i.e. low income and small business programs)

Ensuring programs overcome barriers needed to reach all customers (i.e. offer program materials in multiple languages)

Making equity a component of utility performance incentives

Allocating a percent of budget for certain qualifying customers

Increasing diversity in the EE workforce

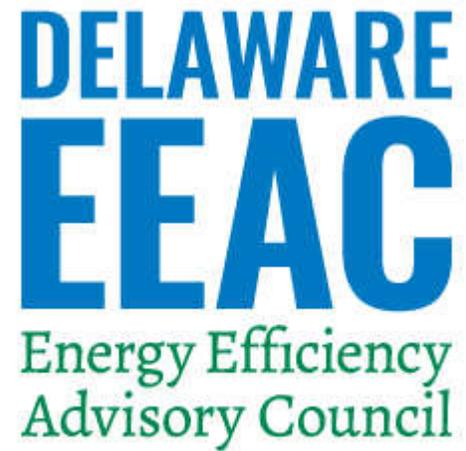
Forming stakeholder working groups to focus on equity issues



Conclusions

- Climate Action Planning and GHG emissions targets are driving EE policy
- Increasing interest in Electrification and ADM
- Equity becoming an important focus of EE programs
- WFD can help address equity concerns and ensure successful EE program delivery





Thank you

Questions?

