

Electrification: The Challenges and Opportunities for Energy Efficiency

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Presenters:

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Some definitions

Electrification is a form of fuel switching that either fully or partially displaces direct fossil fuel use with electricity use, e.g. moving from an oil or gas furnace to electric heat pumps;

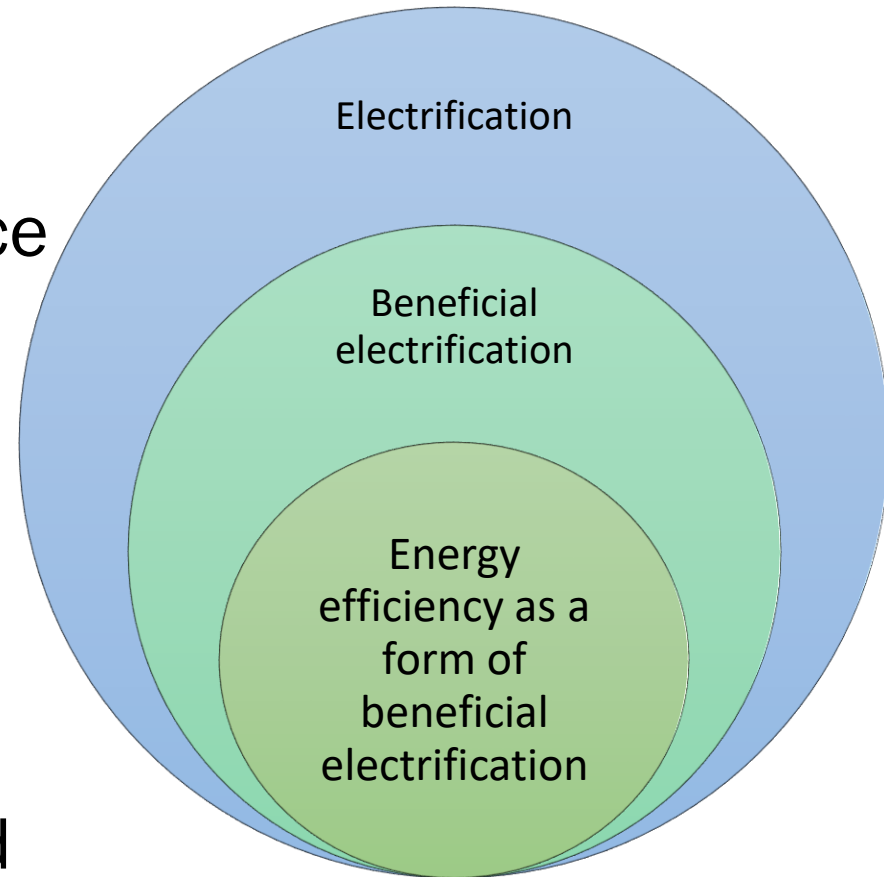
Beneficial electrification (BE) (or strategic electrification): electrification that provides societal benefits, e.g. by reducing overall emissions, energy & customer costs and improving grid management



Beneficial electrification is a form of energy efficiency when it meets three criteria:

1. Saves total energy in source Btu's
2. Saves consumers money
3. Reduces emissions

BE often means shifting to energy-efficient technologies, e.g. electric vehicles (EVs) and high-efficiency heat pumps



principles when considering the role of beneficial electrification

- Decarbonization opportunities from electrification vary by customer or building type, region and over time
- Electrification criteria and potential should be analyzed under local conditions
- Align equipment programs with whole-building/whole-house upgrades to reduce energy demands, e.g. staged programs
- Electrification costs generally lower if done when existing equipment fails and needs to be replaced

Additional Resources

- ACEEE Blog post: [Electrification and Efficiency: Crafting an Enduring Relationship](#)
- Energy Efficiency For All and Greenlining Institute, Sept. 2019: [Equitable Buildings Electrification: A Framework for Powering Resilient Communities](#)
- EESI Report: [Equitable Beneficial Electrification for Rural Electric Cooperatives](#)