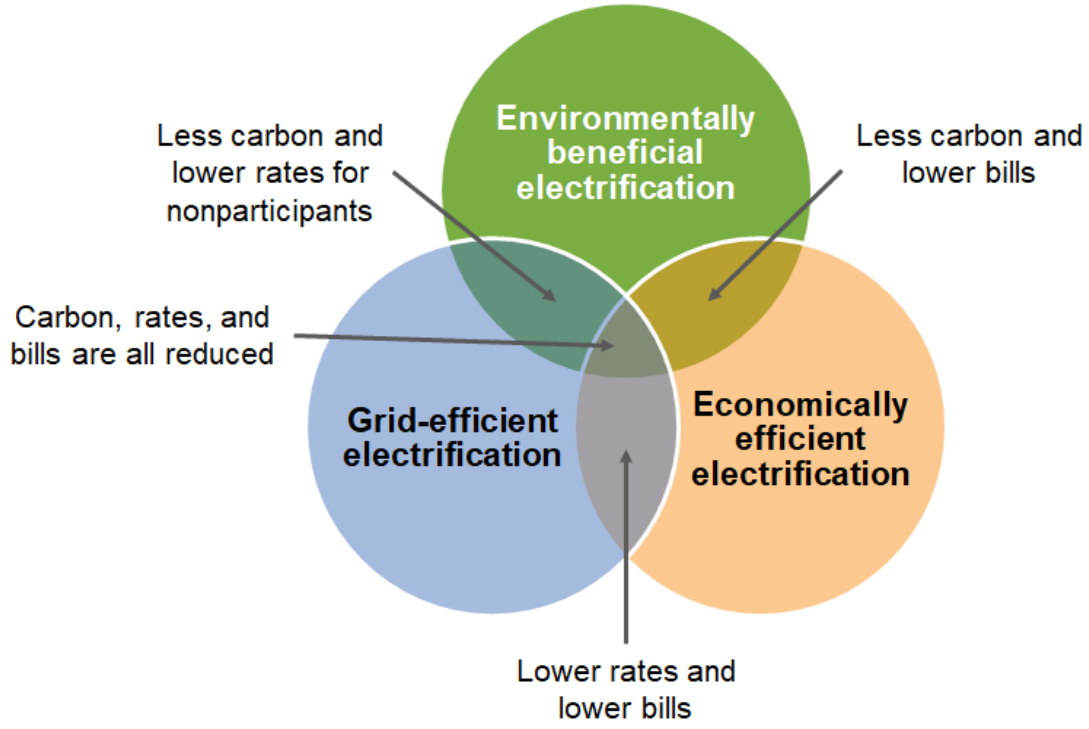
Beneficial Electrification for Ski Towns & Rural Colorado

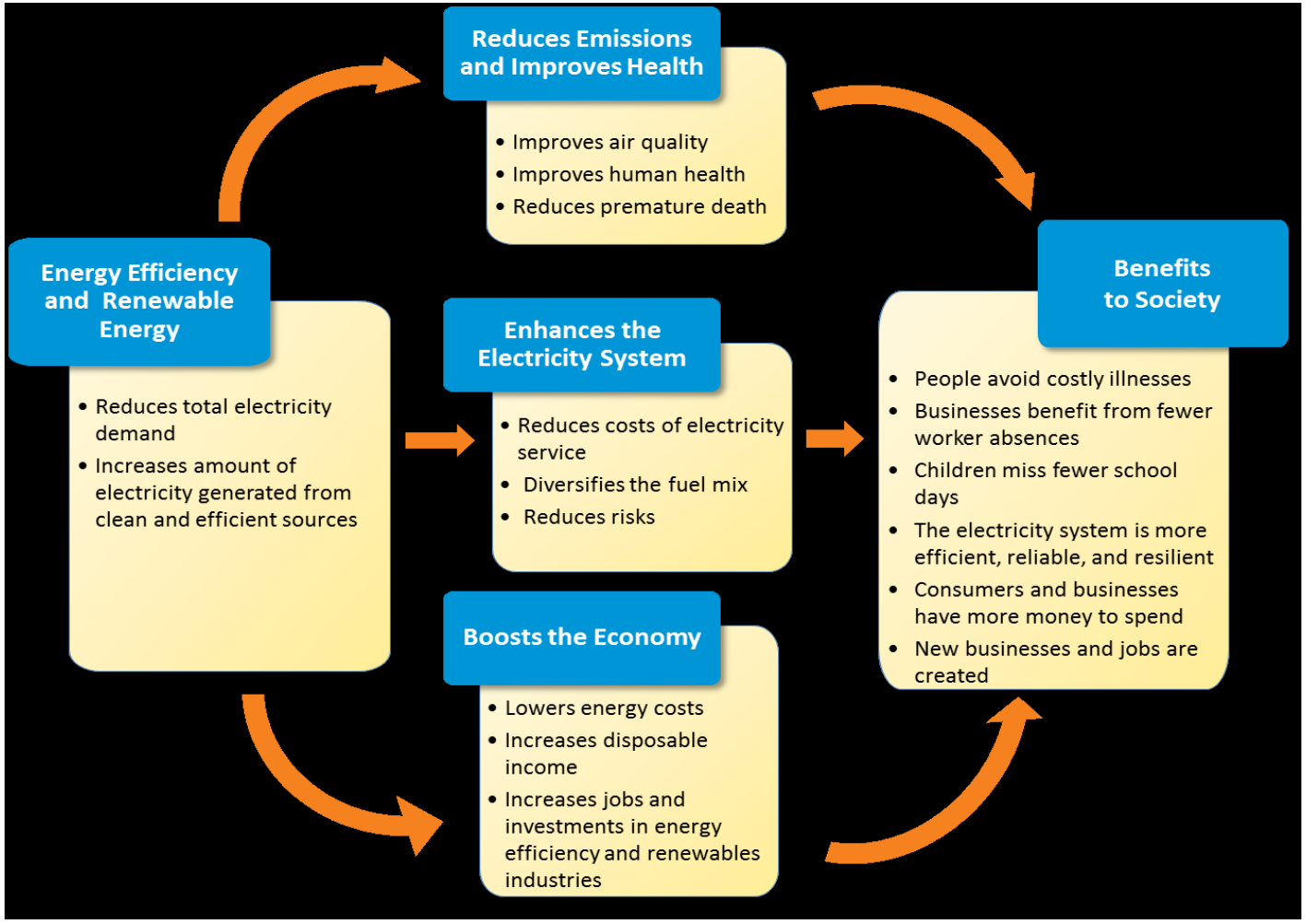
Kevin Cooney
CAST Meeting
Telluride
August 27, 2021

What makes electrification beneficial?



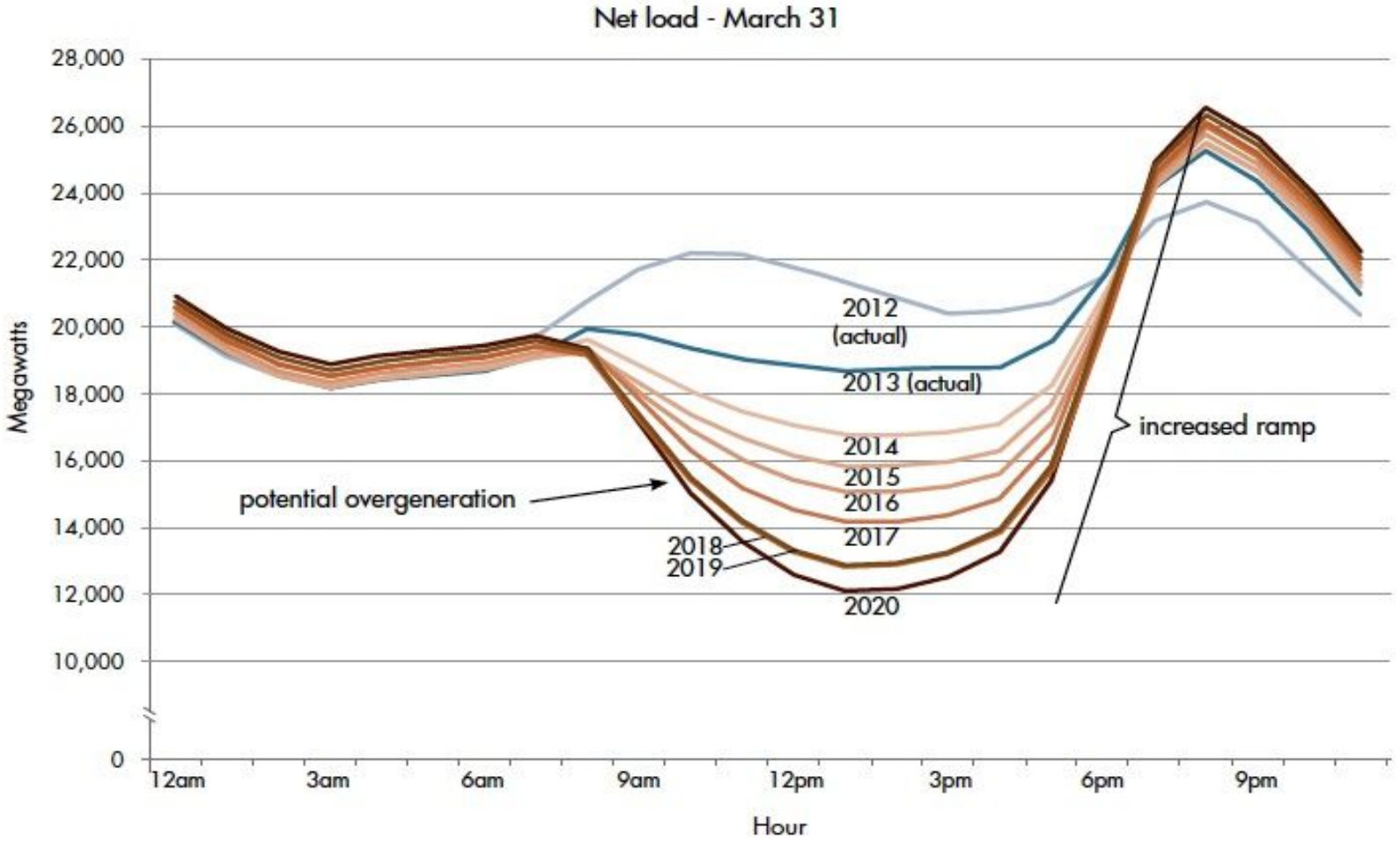
A little local history

Let's look at the multiple benefits of electrification



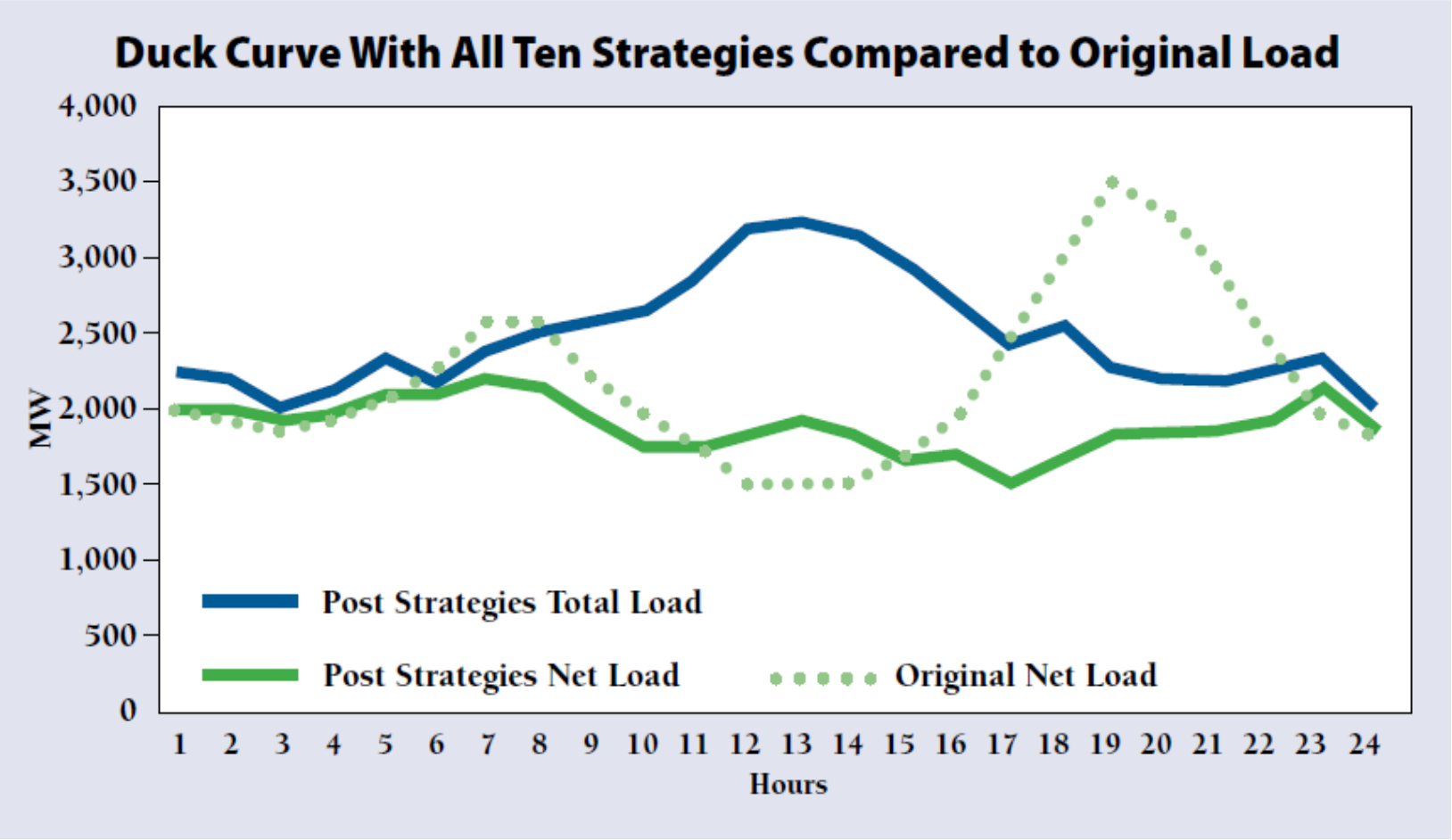
Source: The Multiple Benefits of Energy Efficiency and Renewable Energy, EPA

Grid issues: If it quacks like a Duck…Solar can create supply/demand imbalance



Source: California ISO

How can Beneficial Electrification help the Grid?



Source: Teaching the Duck to Fly, Regulatory Assistance Project (RAP)

Beneficial Electrification in the home

Source: Equitable Beneficial Electrification for Rural Electric Coops, *RE-AMP Network* & *We Own It*

SMPA promotes local Beneficial Electrification

See website for rebate offers:

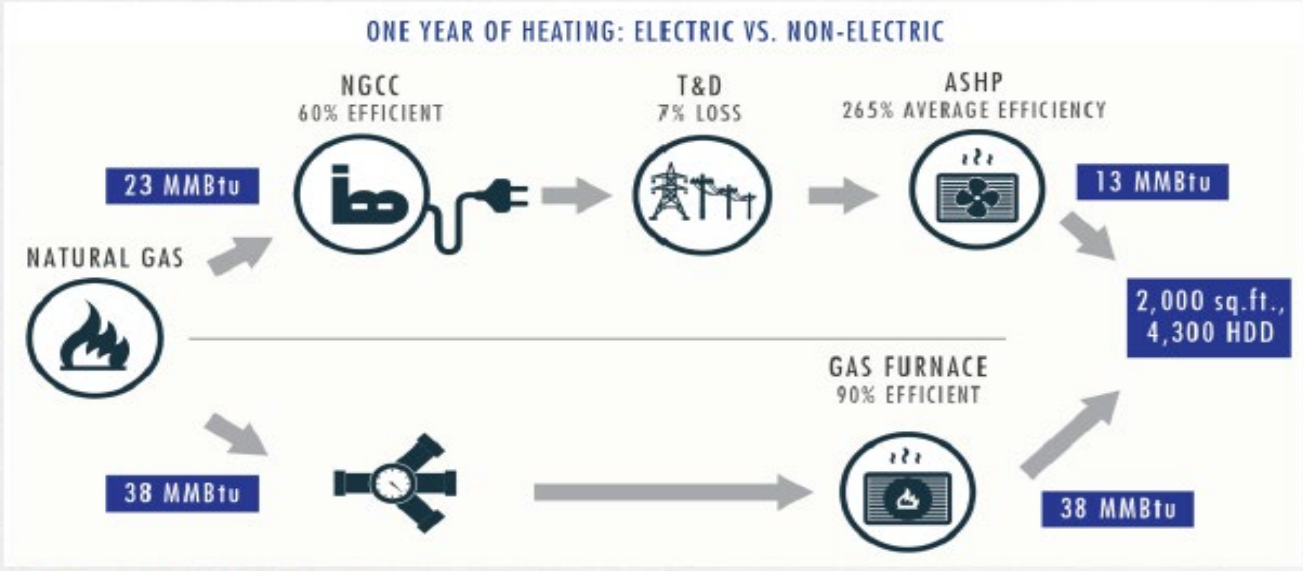
Geohttps://www.smpa.com/content/electric-vehicles-and-beneficial-electrificationchemical

- ❑ Outdoor equipment
- ❑ Heating & Cooling, Lighting, Appliances, Water Heating, thermal storage
- ❑ EV charging, Electric Vehicles, Electric Bicycles
- ❑ Commercial equipment, motors, lighting, etc.

Programs administered by *Eco-Action Partners*, and supported by *Tri-State*

Environmental Benefits: GHG Reduction

Even with partially fossil-grid today, electrification reduces emissions



Source: EPRI, "Efficient Electrification"

EPRI: an air source heat pump powered by natural gas electricity consumes half as much energy as an efficient natural gas furnace – even when accounting for upstream electricity generation and transmission losses

Source: EPRI National Electrification Assessment

The Beneficial Electrification Toolkit

Technologies

- Non-Road & Material Handling
- On-Road, Light-Duty
- On-Road, MD & HD
- On-Road, Buses
- Food Preparation
- Custom
- Manufacturing
- Infrastructure (Ports/Airports)
- HVAC
- Water Heating
- Recreational
- Trains

Locations

- Home
- Multi-family
- Workplace or Destination
- In-route
- Fleets

Strategies

- Infrastructure Deployment
- Rate Design
- Education & Outreach
- Incentives & Financing
- Partnership Planning
- Managed Charging
- Active Load Management (DR, V2G)

Source: Peak Load Management Alliance (PLMA)

Summary

- ❑ There are many grid, consumer, and environmental benefits to electrification
- ❑ As the *Energy Transition* continues, electricity is getting cleaner & cheaper
- ❑ Energy storage costs are declining rapidly
  - Applications and types of storage go beyond batteries
- ❑ Beneficial Electrification provides a means for local & personal action
- ❑ Evaluate programs and actions to assess which provide cost effective impacts
- ❑ Climate change is already here - we must act now

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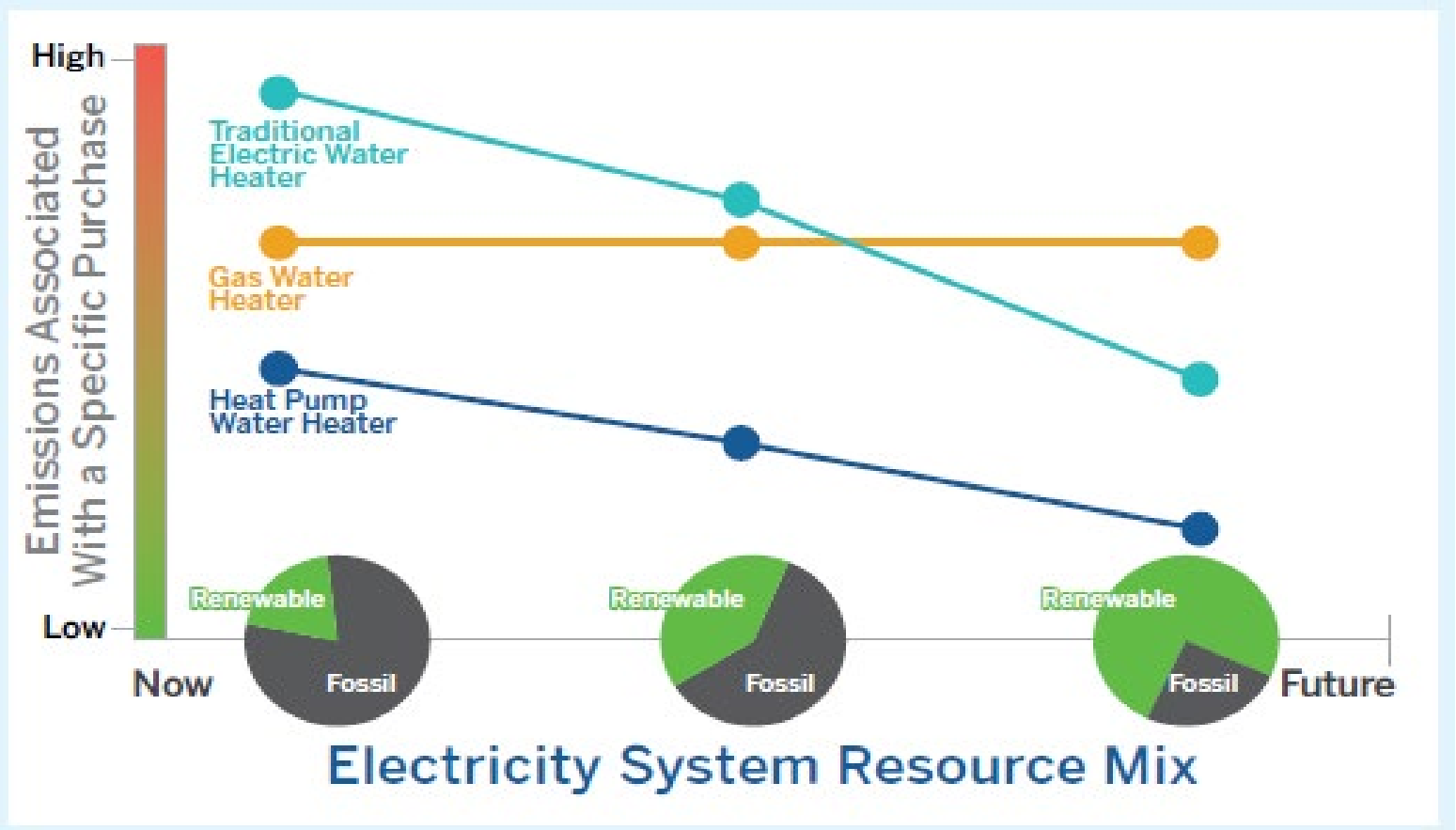
How generation mix changes technology impacts



Source: Beneficial Electrification, Ensuring Electrification in the Public Interest; RAP