

Beneficial Electrification

The Beneficial Electrification League



The new degree of comfort.®



BEL's Mission and Vision



Vision

We envision a future where electrification is broadly implemented, when beneficial, to drive economic development, meet consumer needs, and achieve environmental goals.

Mission

Our mission is to facilitate electrification, when it is beneficial, by promoting understanding among key stakeholders, championing necessary grid infrastructure, and developing actionable resources to accelerate implementation.

What is “Beneficial Electrification?”

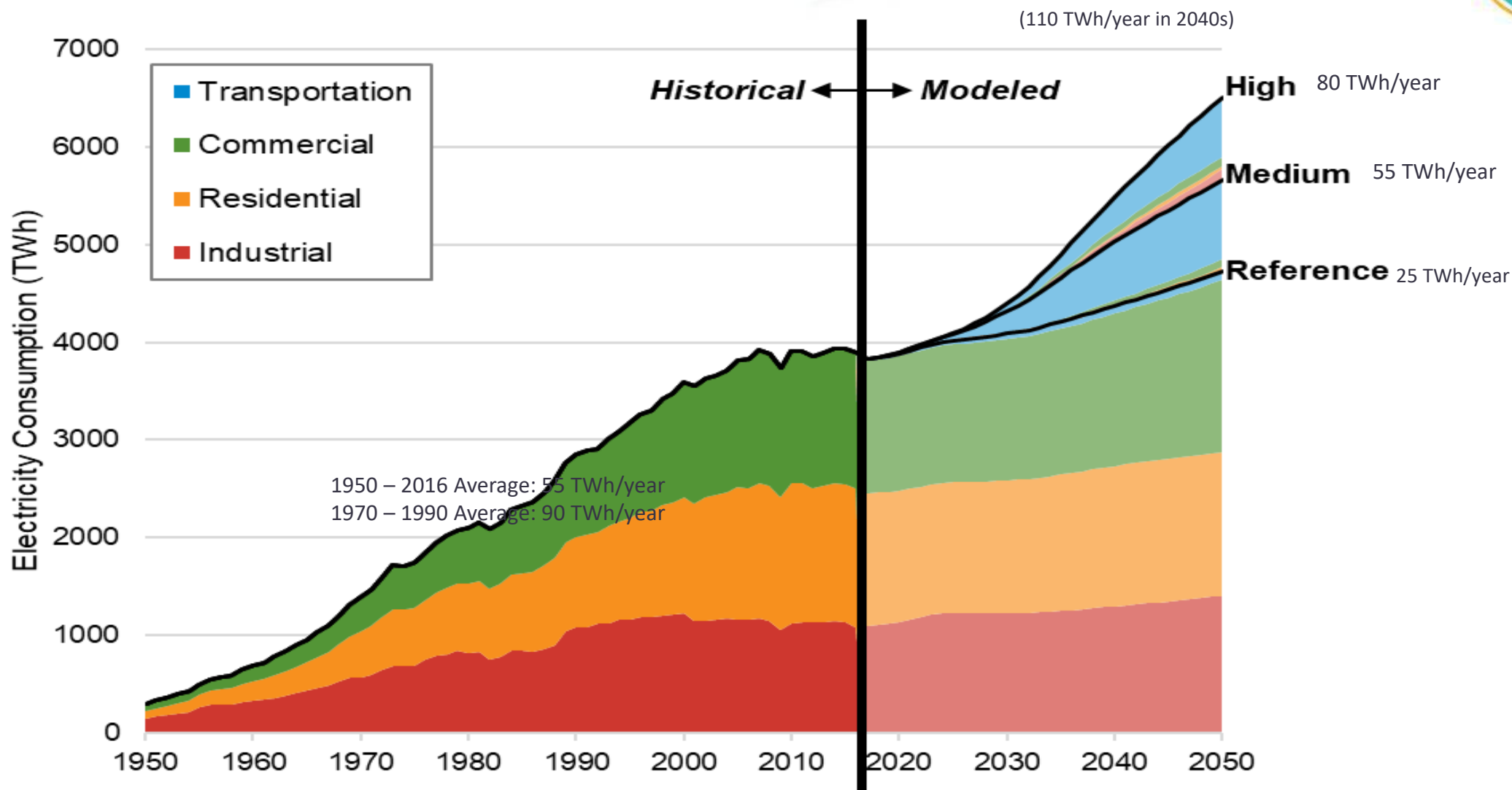
Beneficial Electrification (BE) includes the application of electricity to end-uses where doing so satisfies at least one of the following conditions, without adversely affecting the others:

- Saves consumers money over time;
- Benefits the environment and reduces greenhouse gas emissions;
- Improves product quality or consumer quality of life;
- Fosters a more robust and resilient grid

Beneficial Electrification programs are a valuable opportunity to engage both electric utilities and environmental groups in the effort to identify solutions that work well for the end-use consumer, local communities and the environment.

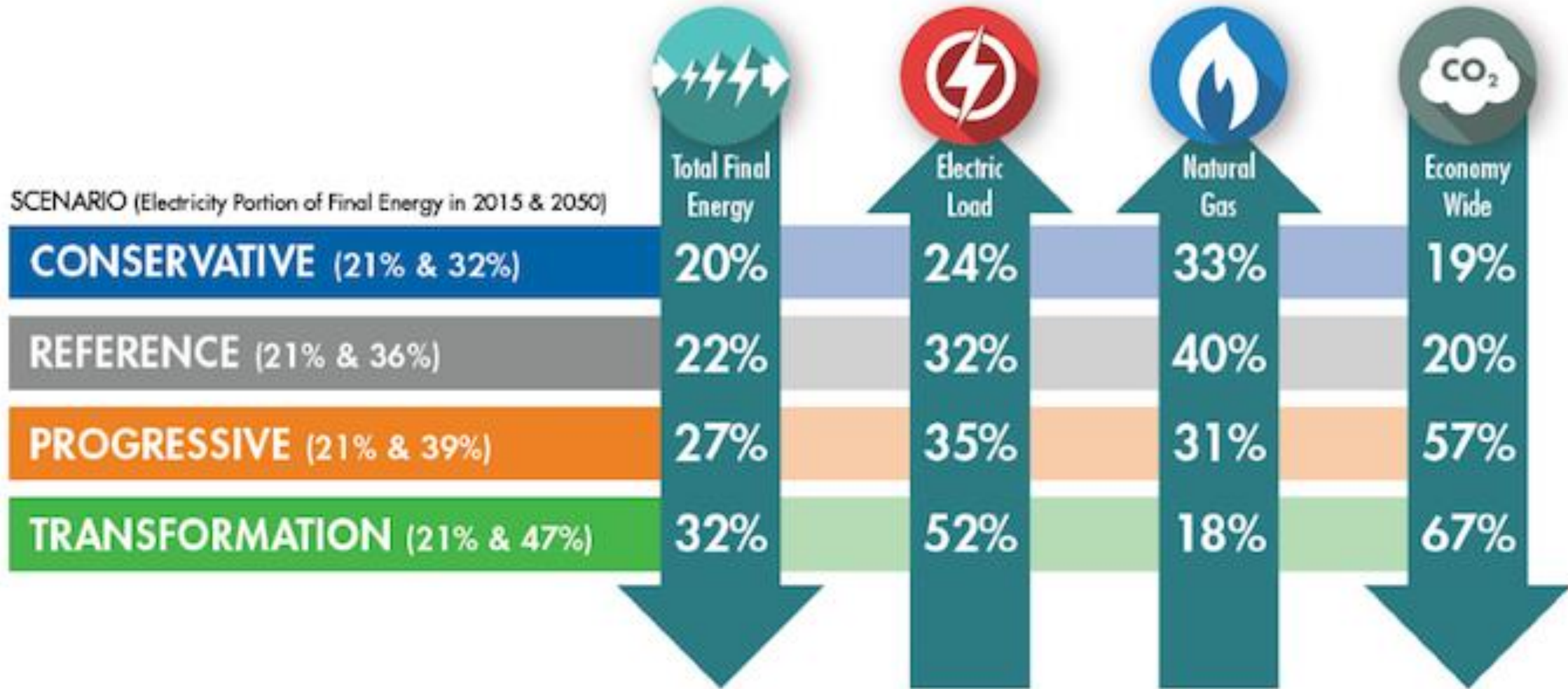
NOT an “Electrify Everything” Concept

Electric Load Growth Significant, but Not Unheard of



Source: NREL

EPRI Study 2018 – And Others

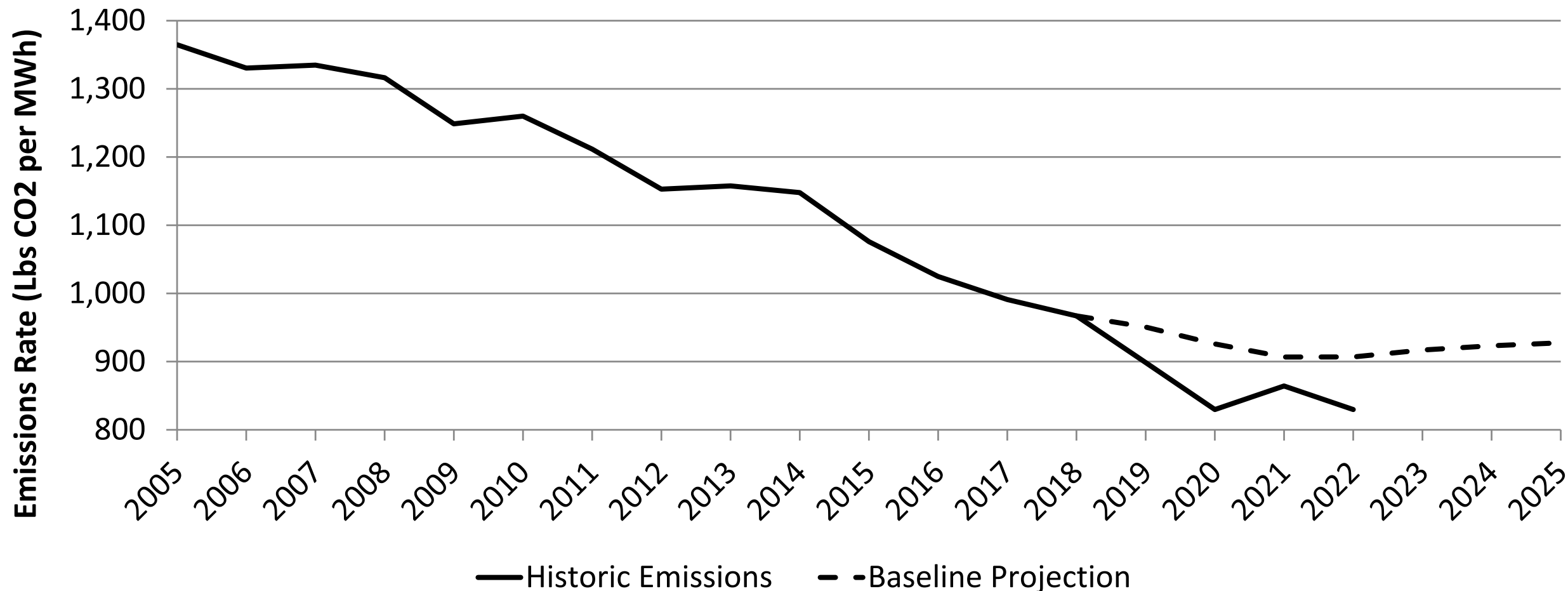


- NREL forecasts an 81% increase in load
- Eversource projects a 150% demand increase by 2050
- National Grid expects peak demand to double

Opportunity to Improve “Emissions Efficiency”



Electricity is Getting Cleaner Over Time



By virtue of being plugged into the grid, the environmental performance of electric devices improves over time. (Source EIA)

Beneficial Electrification

What's your favorite thing powered (or charged) by electricity?



What's Your BE Experience?



Technology Interest Beyond EVs



Inflation Reduction Act – August 2022

Infrastructure Investment and Jobs Act (IIJA)



Opportunity for Appalachian Communities

Appalachian Region Community-Owned Grid Resilient Infrastructure Project (ARCO-GRIP)



PROJECT SNAPSHOT



GRANTEE

Beneficial Electrification League



STATES IMPACTED

Georgia, New York, Pennsylvania, and Tennessee



ARC FUNDING

\$500,000



PARTNERS

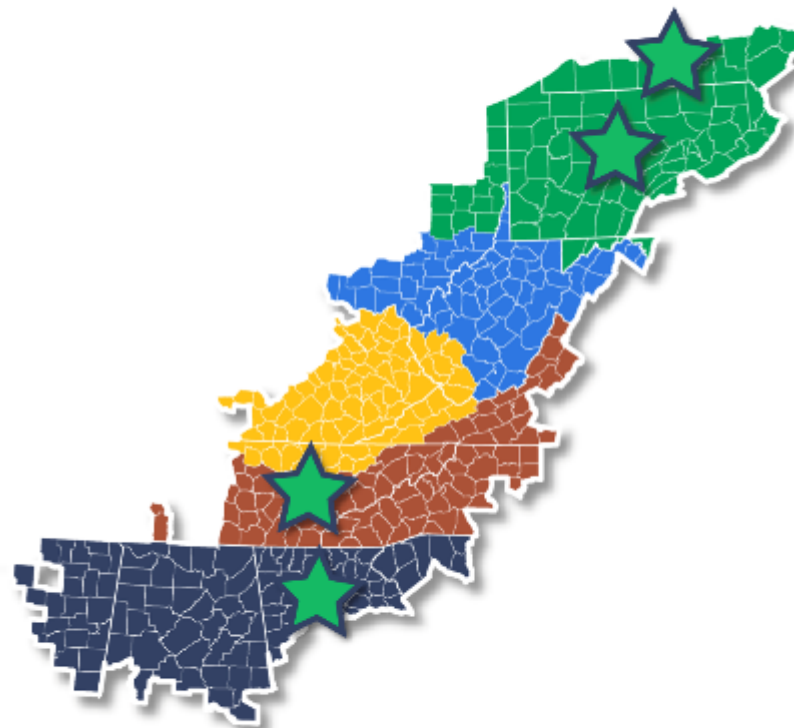
Georgia Environmental Finance Authority, Georgia Institute of Technology, National Electric Energy Testing, Research & Applications Center, Oglethorpe Power Corporation, Georgia Transmission Corporation, Jamestown BPU, Otsego Electric Cooperative, Delaware County Electric Cooperative, Northwestern Rural Electric Cooperative Association, Pennsylvania Rural Electric Association, Tennessee Valley Authority, Tullahoma Utilities Authority, Tennessee Valley Public Power Association, Oak Ridge National Laboratory, Electrification Strategies, LLC, Aerinet Solutions Corporation



ANNOUNCEMENT DATE

October 2023

STATES IMPACTED



Beneficial Electrification League



IRA Electrification Funding – Slow Moving



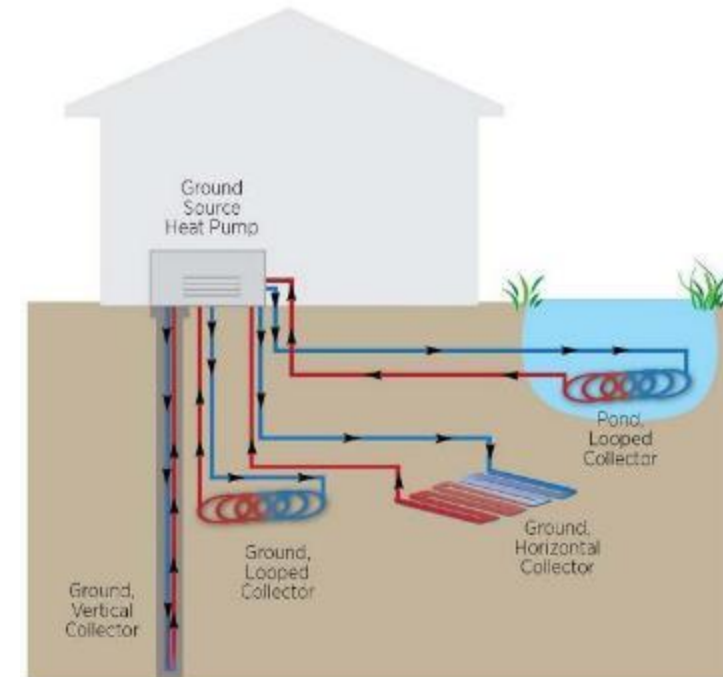
- IRA Energy Efficiency/Electrification funding
 - was a distant memory
 - Aug. 16, 2022
- Revitalized for kick off to states
- Deadlines
 - States must apply by 01/31/25
 - Intent must in by 08/16/24
- Tax incentives available now!



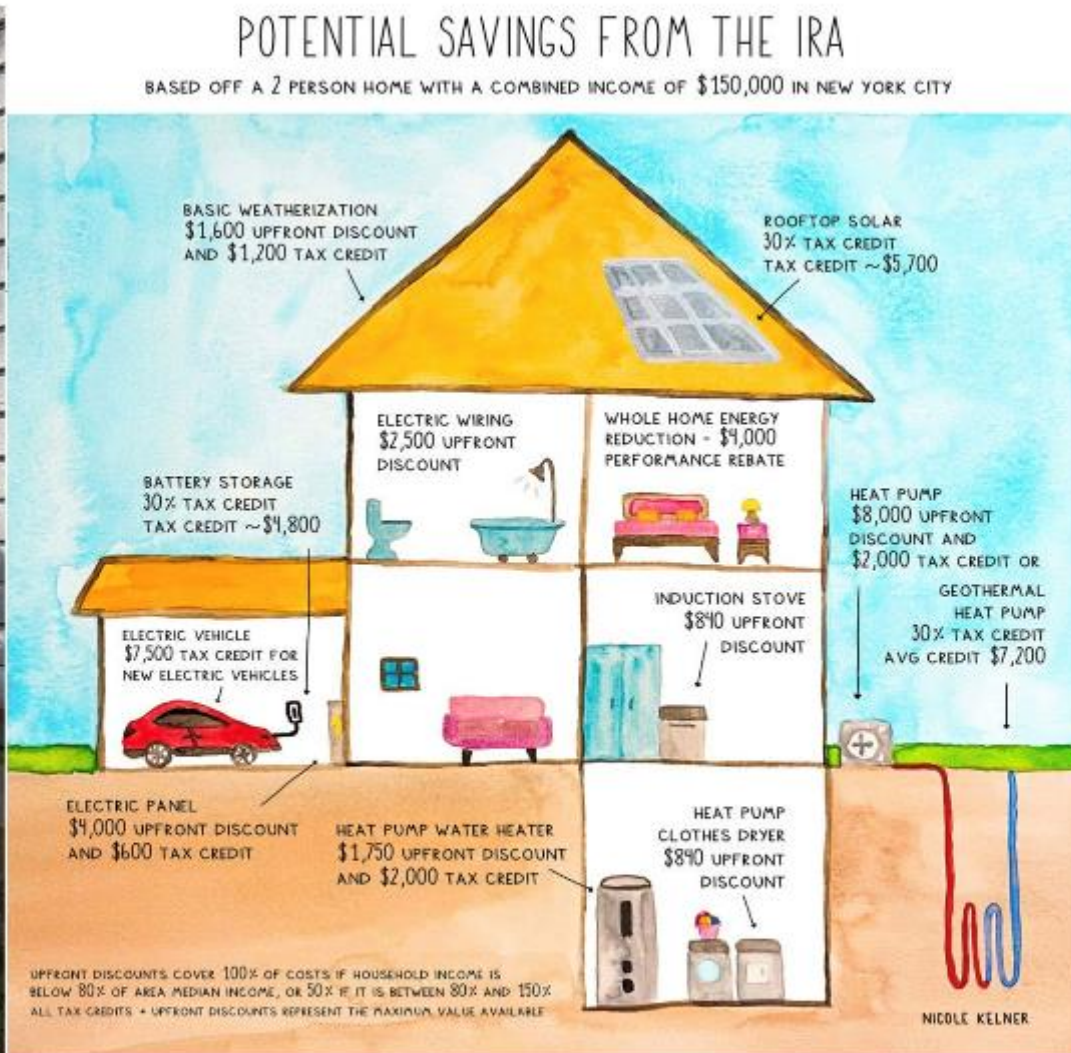
Why Weatherize and Electrify Together?



- Electrification without Weatherization = potential comfort issues and oversizing
- Weatherization without electrification = missed opportunity for assessment and BE/EE opportunities
- W/E Together = Reduced peak load (counterintuitive), increased comfort and multiple benefits



Cold Climate Performance



W/E Together – Using Data For BE Results

ANNUAL COST FOR WATER HEATING TECHNOLOGIES (\$/YEAR)

	SF-1	SF-2	SF-3	SF-4	MFG-1	MFG-2	MFG-3
Std Electric Resistance	\$ 298	\$ 356	\$ 415	\$ 474	\$ 291	\$ 339	\$ 384
GIWH (40/50 Gal)	\$ 292	\$ 347	\$ 403	\$ 460	\$ 286	\$ 331	\$ 374
GIWH (80 Gal)	\$ 363	\$ 414	\$ 467	\$ 516	\$ 357	\$ 399	\$ 439
HPWH (Base Efficiency)	\$ 393	\$ 408	\$ 425	\$ 440	\$ 386	\$ 396	\$ 407
Gas	\$ 309	\$ 348	\$ 393	\$ 470	\$ 303	\$ 336	\$ 371
Propane	\$ 355	\$ 419	\$ 493	\$ 594	\$ 346	\$ 399	\$ 457

Assumptions: Mean emissions cost, mean installed cost, all homes have laundry units, all technologies have storage

Cheapest Option

Most Expensive Option

Collaborate with Labs For BE Results

Assessment of Centralized Domestic Hot Water Systems as An Electrification Option for Multi-Family Water Heating in Cold Climates

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Figure 11: Central HPWH Electricity Consumption for 1/1/2022 in Los Angeles

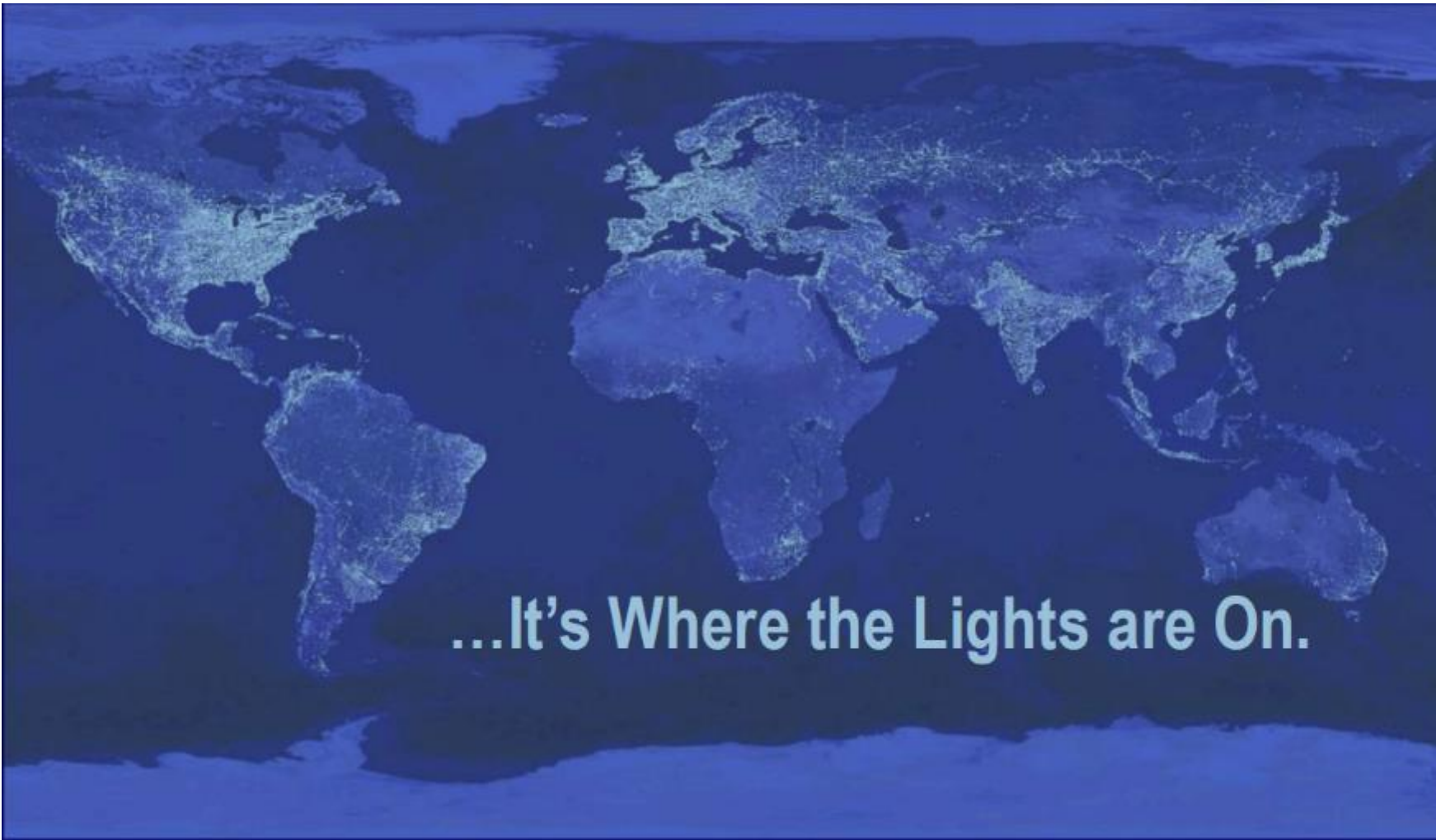
Table 1: HPWH operation cost comparison in Los Angeles

	No Preheat Baseline	Preheat @10am-1pm
Annual total utility cost [\$]	6471	5994 (7.4% ↓)
GHG Emission [lbCO2/year]	15900	14286 (10.2% ↓)

Table 2: HPWH operation cost comparison in Chicago

	No Preheat Baseline	Preheat @10am-1pm	Preheat @3am-6am
Annual total utility cost [\$]	5479	4681 (15%↓)	5727 (4.5%↑)
GHG Emission [lbCO2/year]	63030	55025 (13%↓)	65902 (4.6%↑)

You Can See Prosperity...



Email: Ahofmann@be-league.org

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