

The Energy Wallet

U.S. and State-Level Household Energy Expenditures, Past, Present and Future



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Energy Wallet: Motivation

- Direct household energy expenditures are a key metric for affordability, but only half the story: must be understood relative to income and other costs and factors at the household level
- The **Energy Wallet** provides a broad perspective, integrating expenditures on utility bills, distributed energy resources, and other fuel purchases and showing historical trends and variation across states
- Future technological and structural change, in particular electric vehicles, have the potential to reduce significantly average household energy expenditures, with high variance regionally and across household types

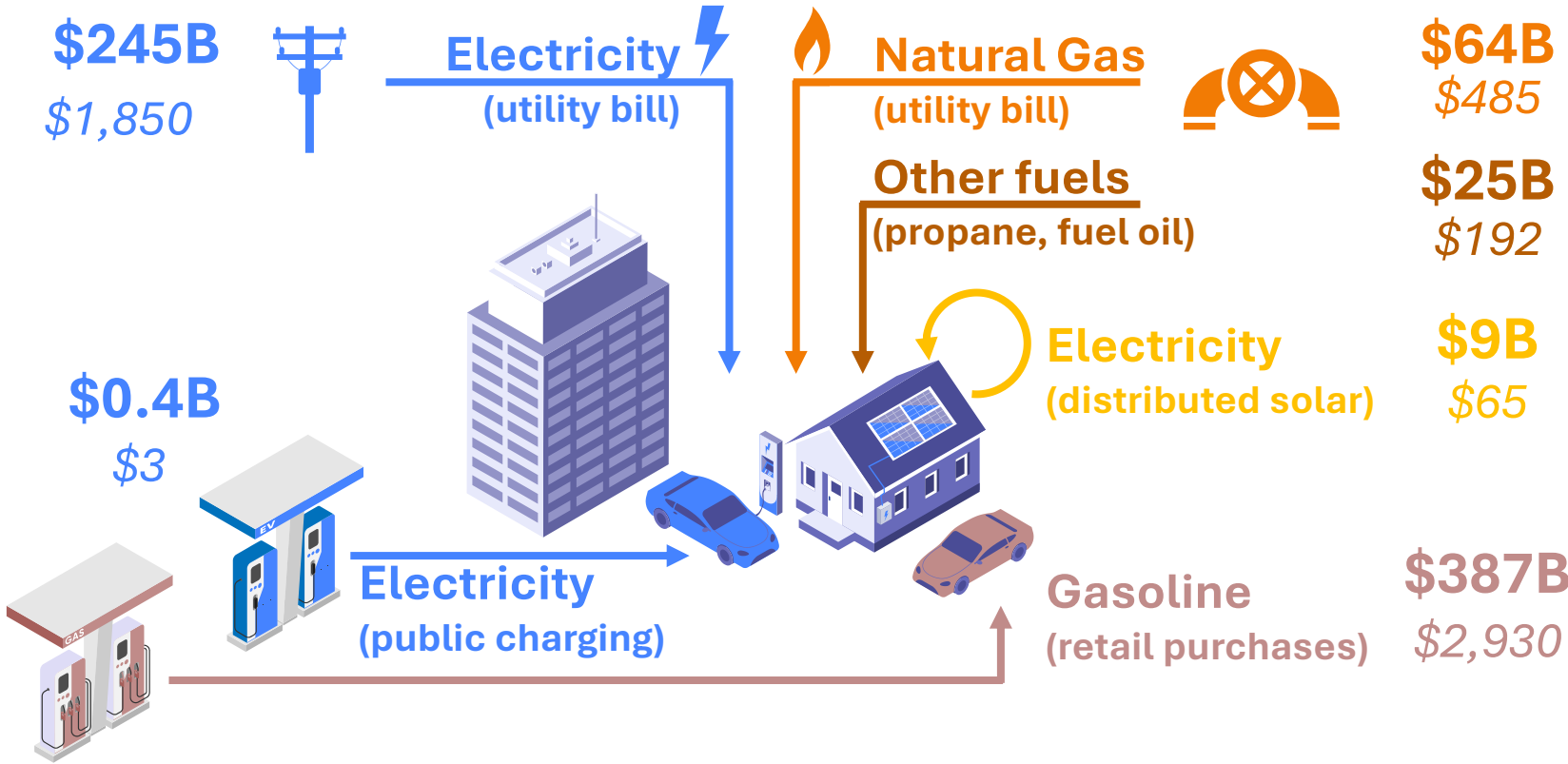
What are current direct household energy expenses?



Energy Wallet

\$731B
\$5,530

U.S. Total Household Direct Energy Expenditures in 2024
per household

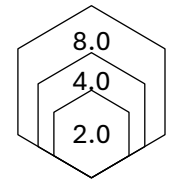
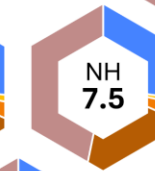


Primary data source: <https://www.eia.gov/state/seds/>

Watts in Your Wallet? State Spending Differences in 2024



US Average



Annual Household Energy Expenditures in 2024\$ (thousands)

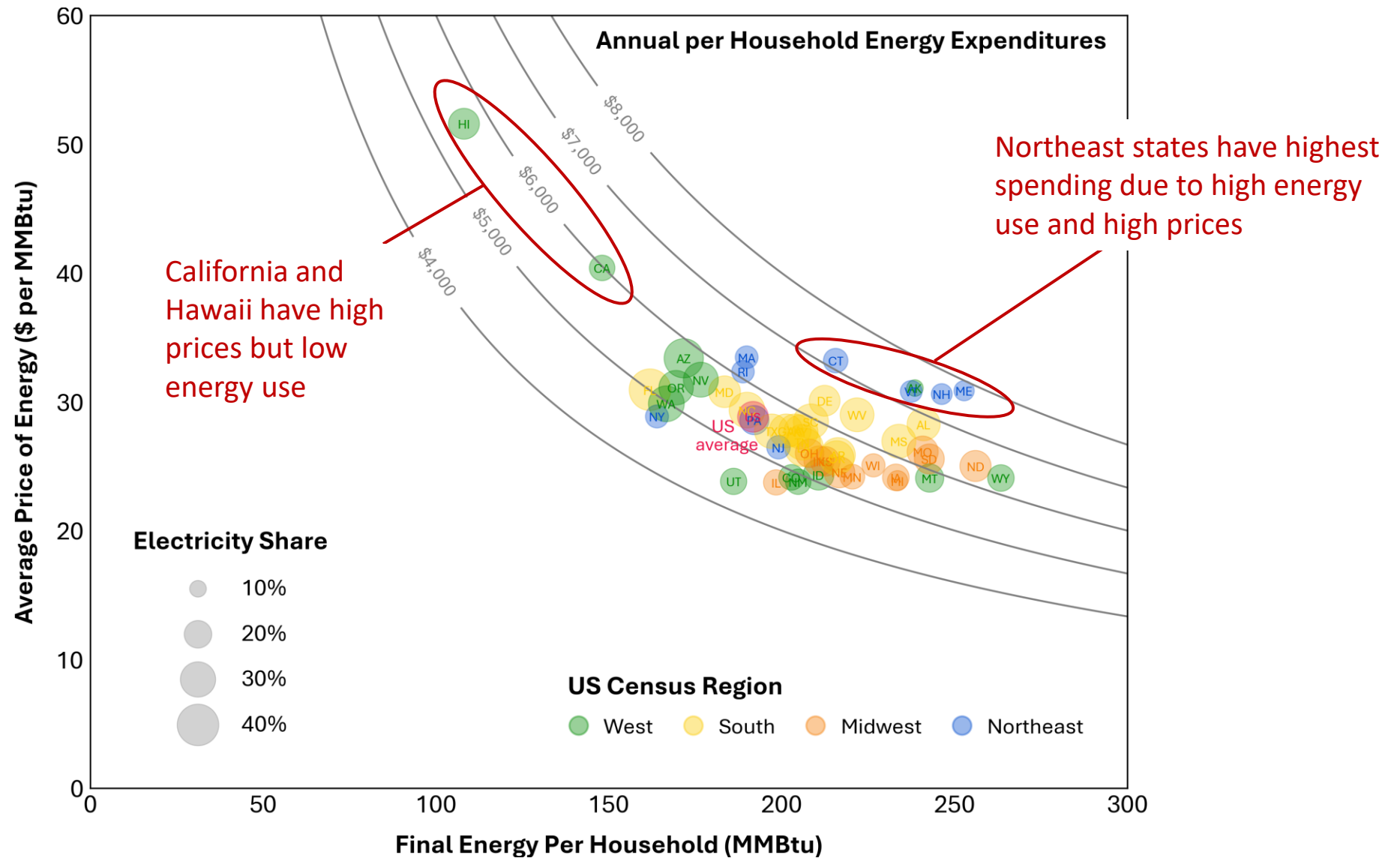


- Electricity
- Solar
- Natural Gas
- Other Fuels
- Gasoline

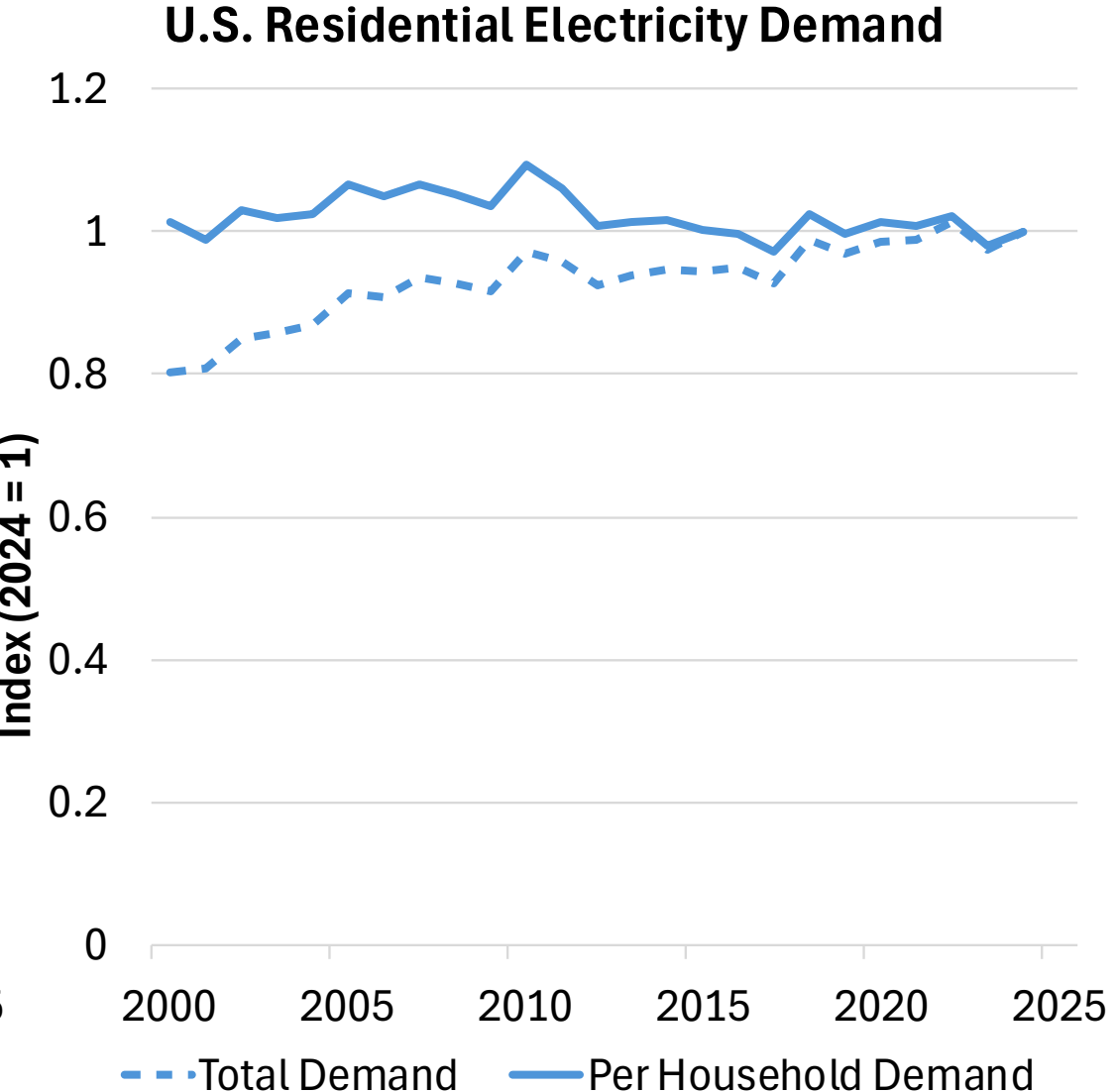
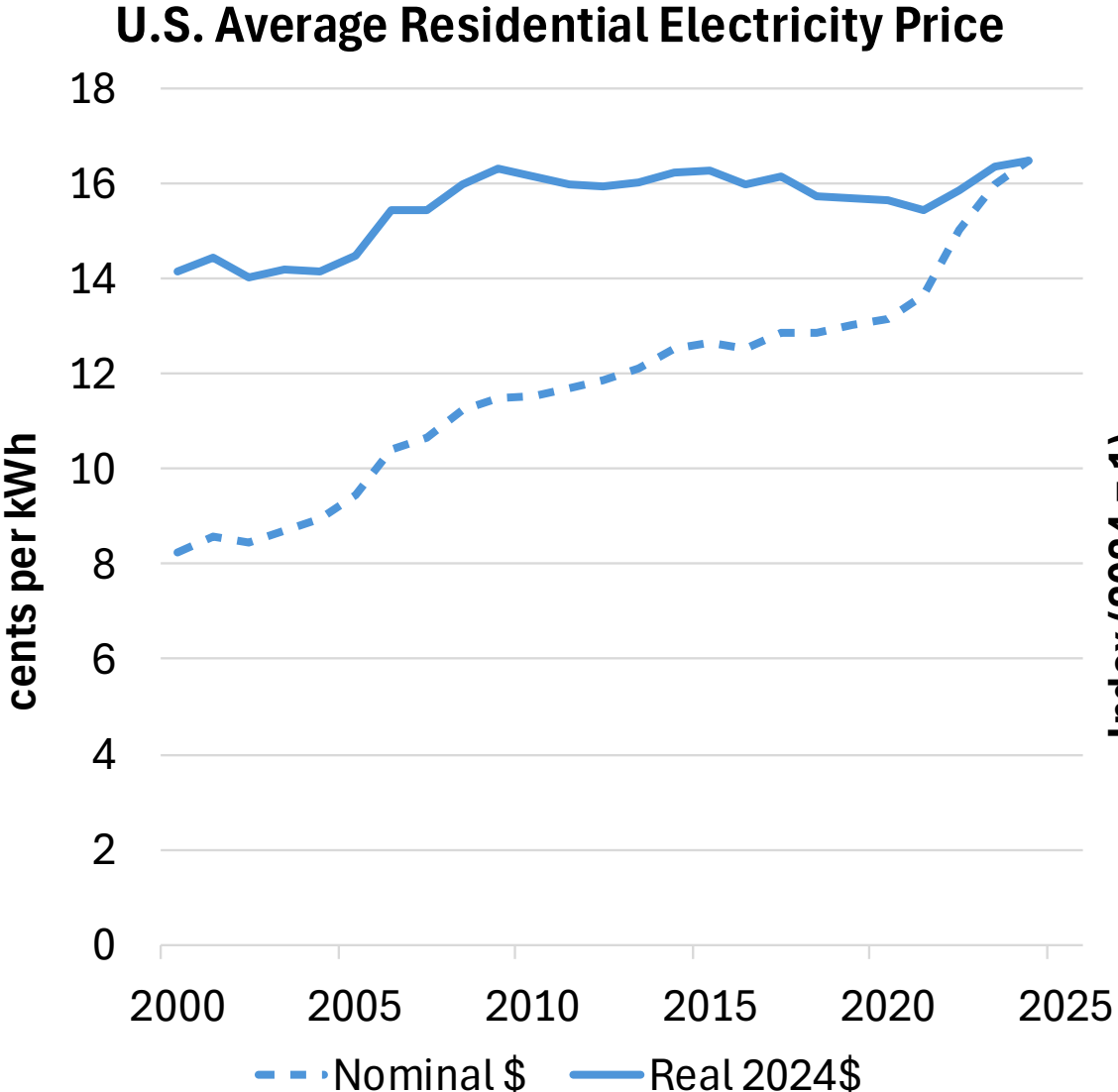


Interactive map at <https://energywallet.epri.com/>

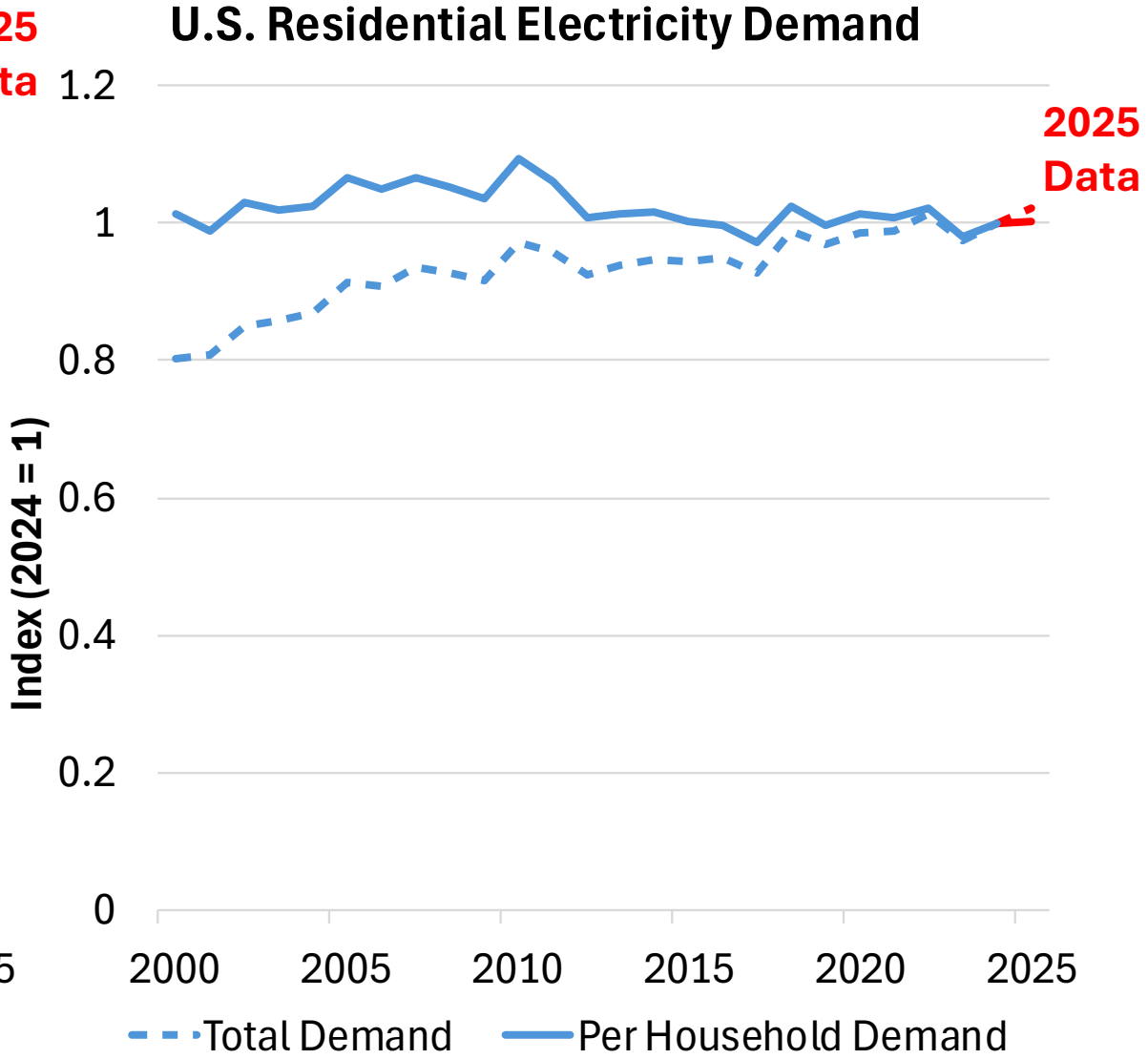
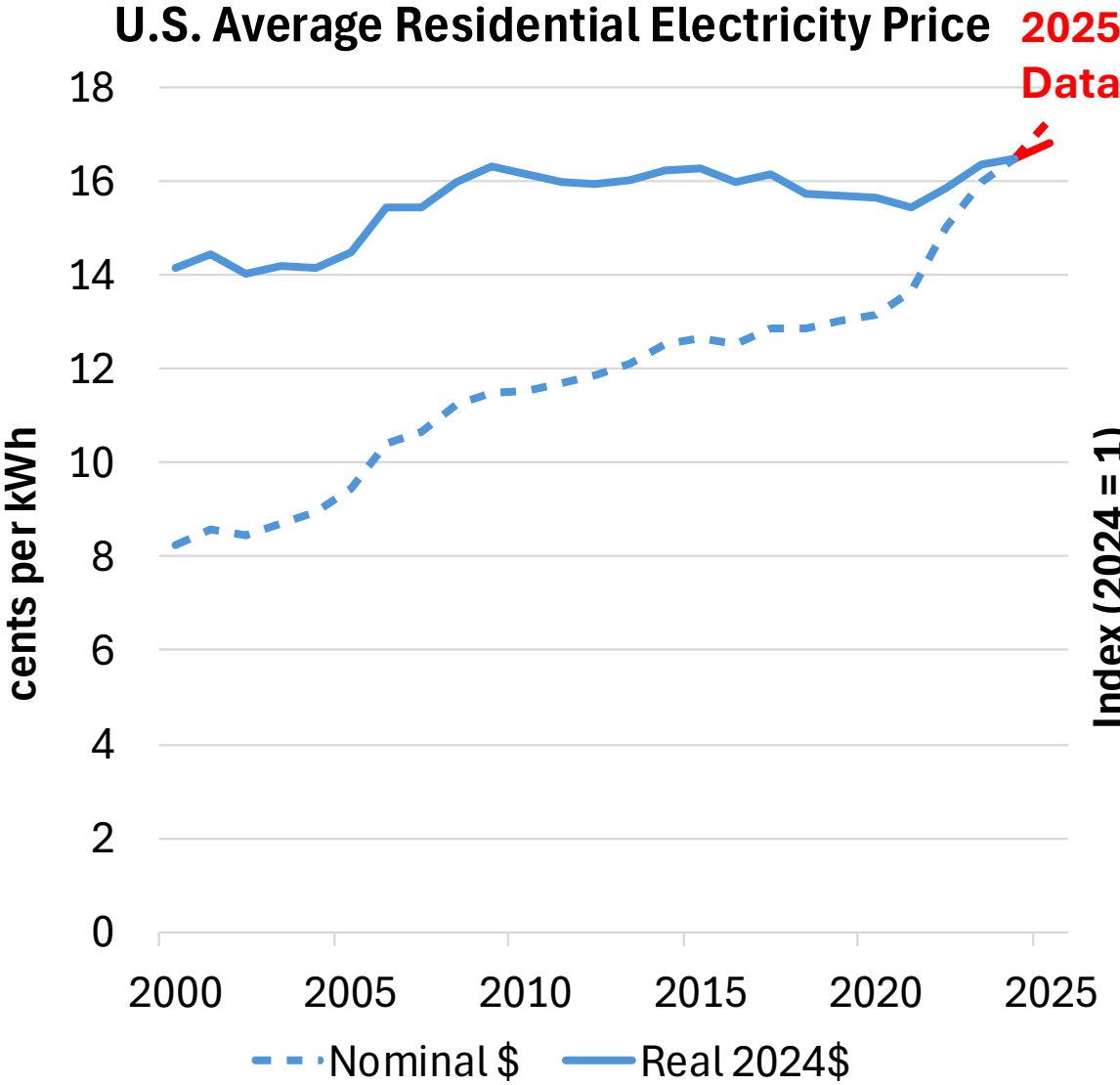
State-Level Energy Prices and Energy Demand



Electricity Expenditure Trends: Price × Quantity

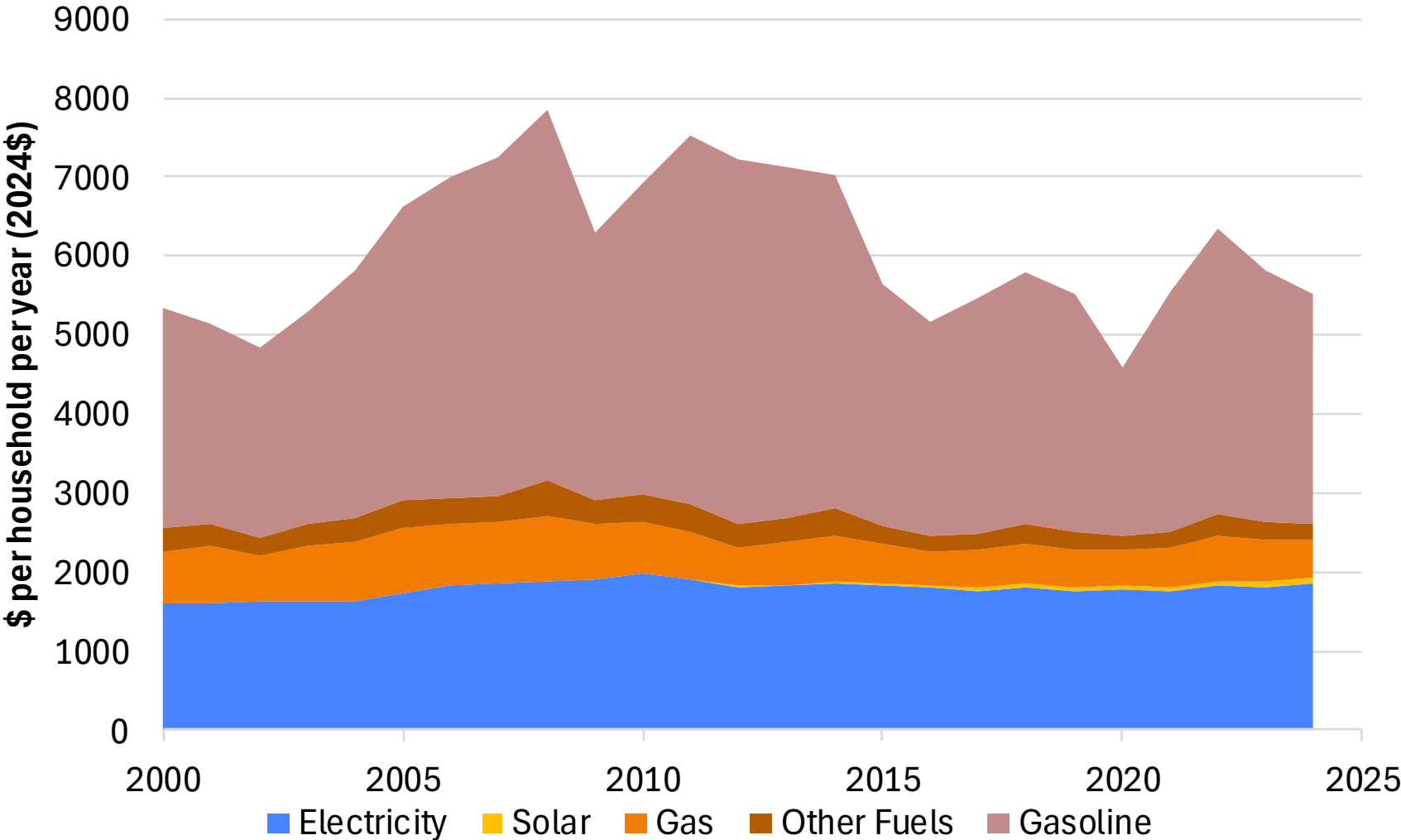


Electricity Expenditure Trends: Price × Quantity



Real per household expenditures have remained flat

Per Household Expenditures, 2024\$

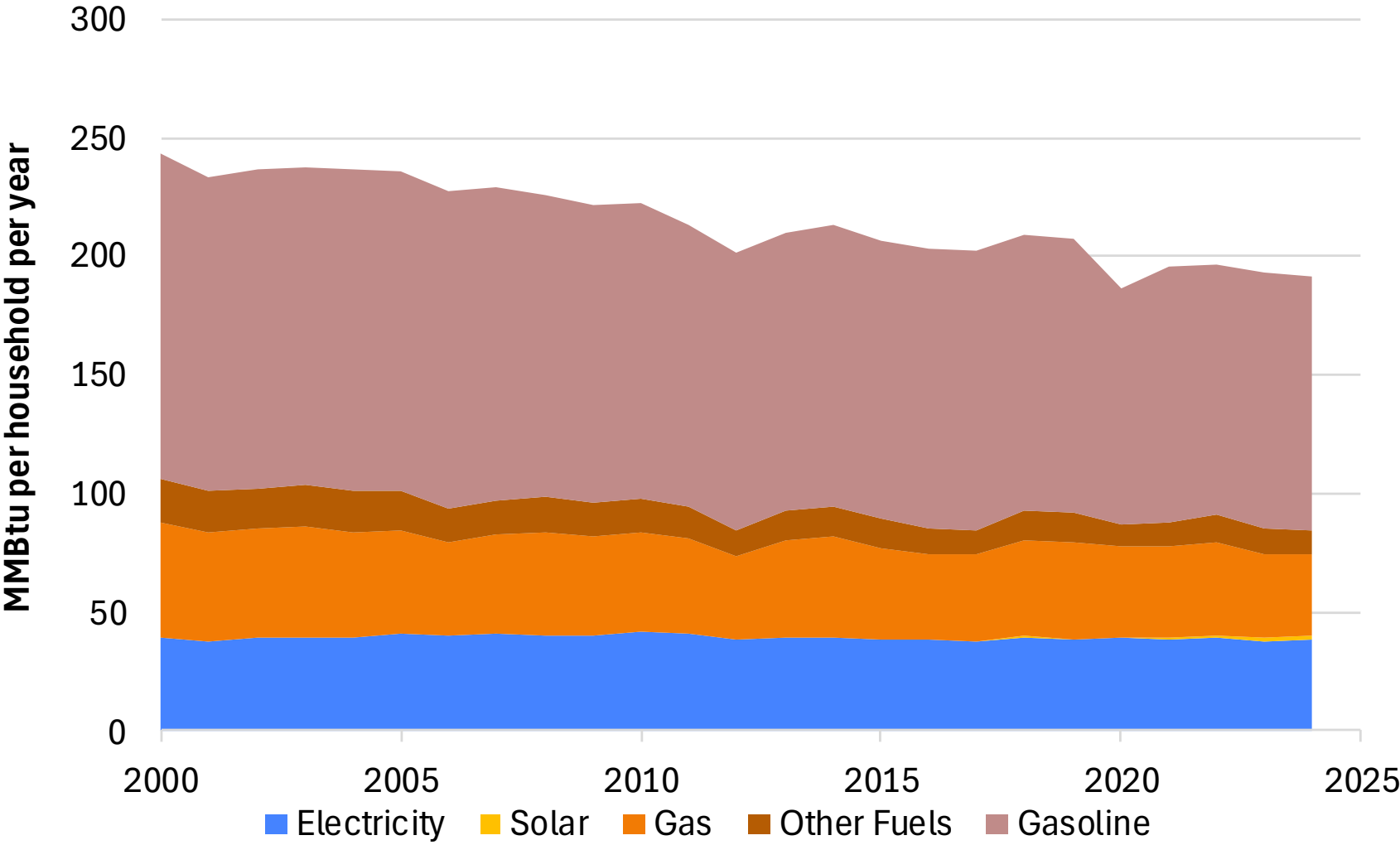


Accounting for:

- Population growth ✓
- Inflation ✓
- Price volatility (especially petroleum)

Per household energy use has declined

Per Household Final Energy



Accounting for:

- Population growth ✓
- Inflation ✓
- Price volatility ✓
(especially petroleum)

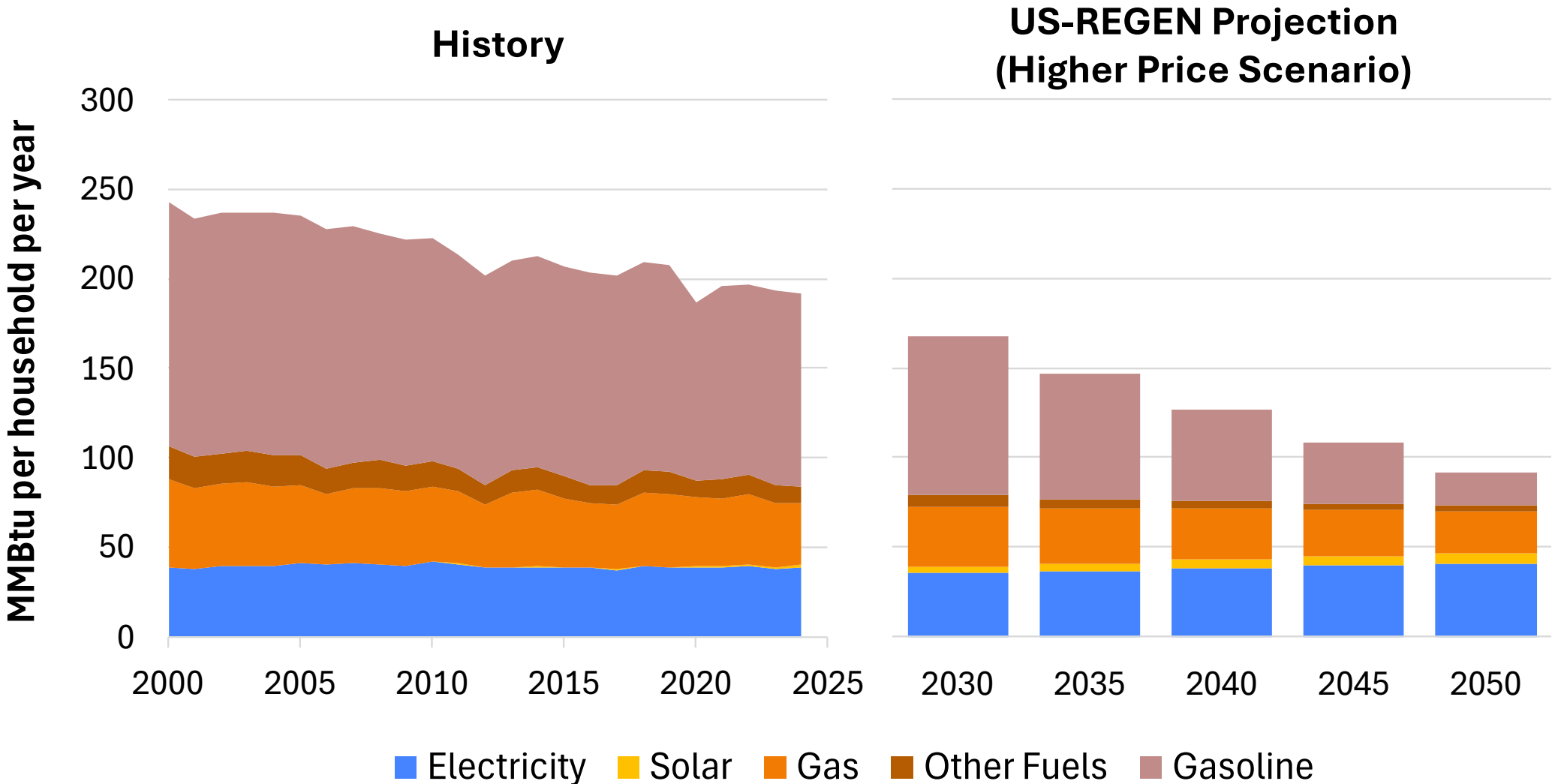
Some demand volatility from weather and macro events (e.g. pandemic)

How do these trends project in the future?

- US-REGEN model scenarios used to evaluate household energy consumption and expenditures in the future:
 - **Lower Price** scenario includes IRA subsidies and lower fuel prices
 - **Higher Price** scenario phases out IRA subsidies and includes higher fuel prices
- Electrification of space and water heating and personal vehicles is driven by economic adoption
 - EVs make up around half of vehicle sales by 2035
- Uncertain impacts of non-residential load growth (e.g. data centers) and potential supply bottlenecks

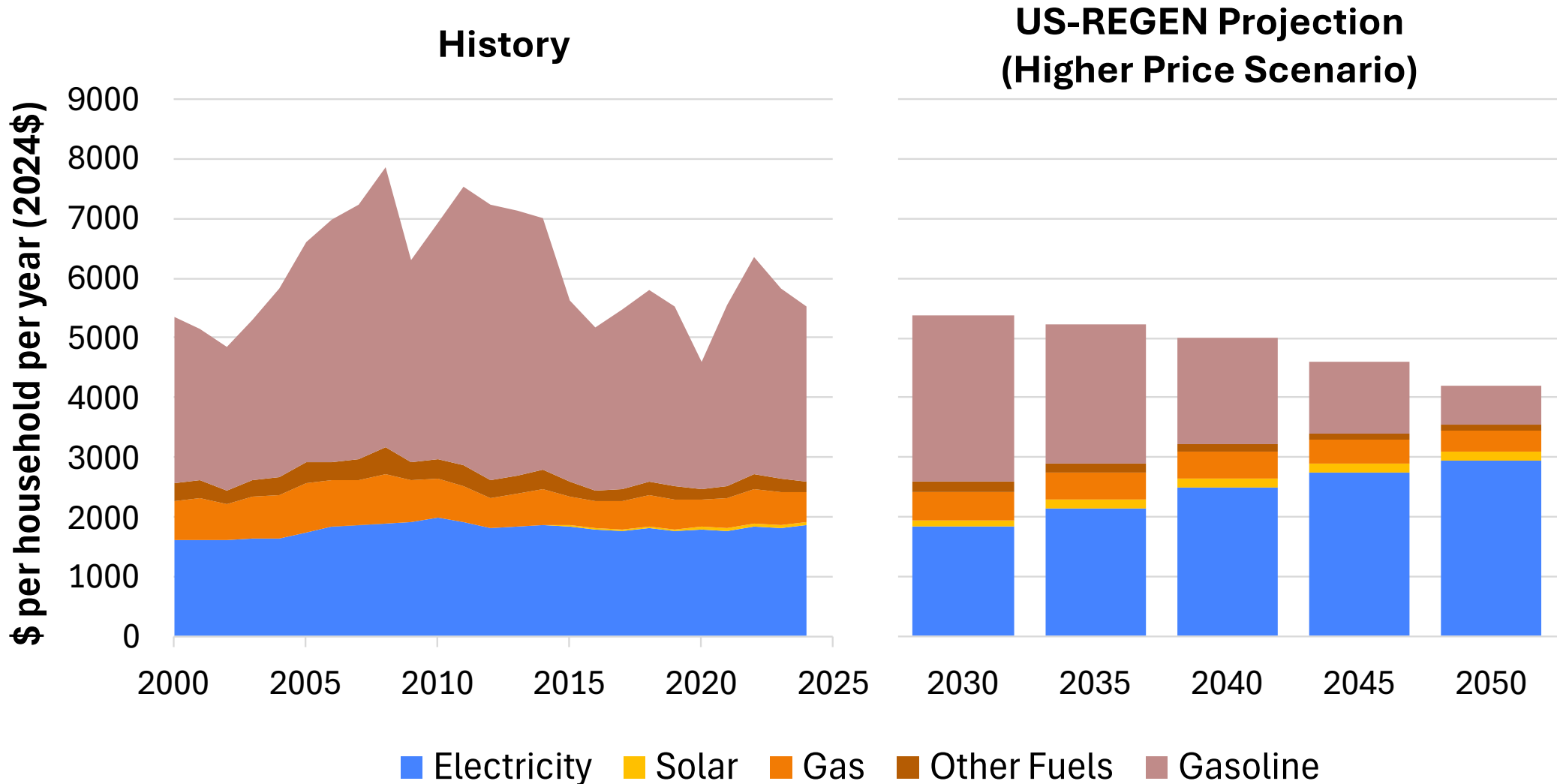
Per household energy demand projected to decline

despite increased electricity use

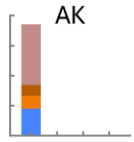


Per household energy wallet projected to decline

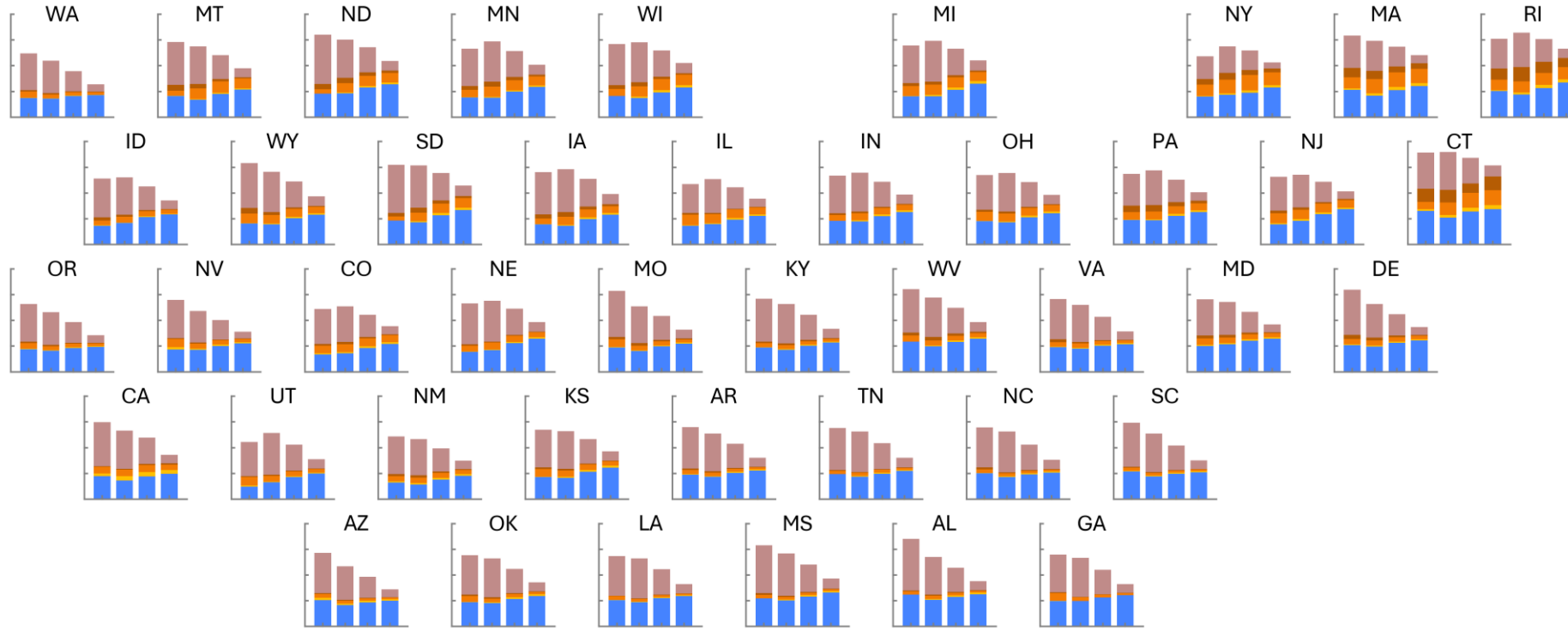
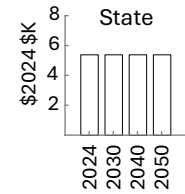
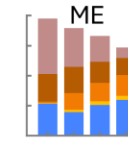
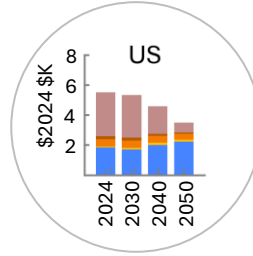
despite increased electricity expenditure



Annual Expenditures 2024-2050 | Higher Price Scenario

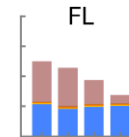
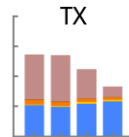
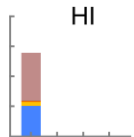


US Average

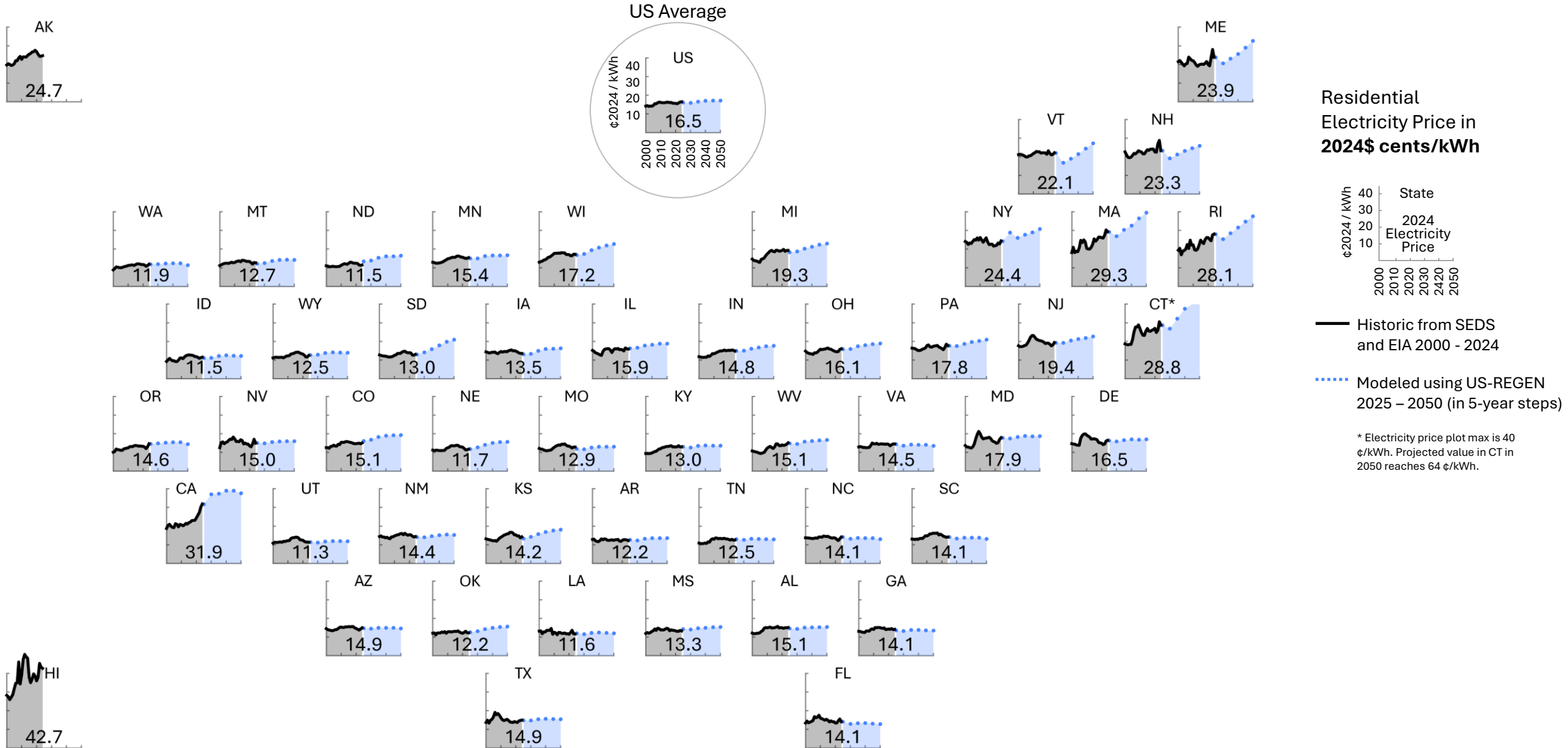


Annual Household Energy Expenditures in 2024\$ (thousands)

- Electricity
- Solar
- Natural Gas
- Other Fuels
- Gasoline



Residential Electricity Price 2000-2050 | Higher Price



Energy Wallet Key Takeaways



Energy Wallet Spending Could Decline

Technological change, especially electric vehicle adoption, has the potential to reduce real average household energy expenses 36-42% by 2050



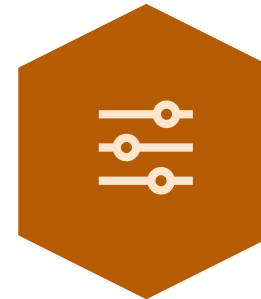
State-Level Differences in Current Spending

Reflects differences in existing fuel mix and fuel prices, climate impacts (e.g., on heating, cooling, charging load), and structural differences in demand



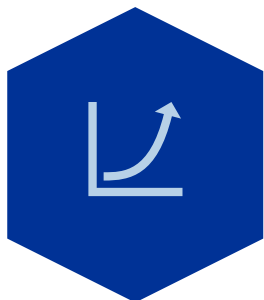
Gasoline Is Largest Current Category

In 2024, U.S. average energy wallet was \$5,530 per household, and gasoline accounted for \$2,930



Energy Wallet Declines Vary by State

State-level average declines range from 10% to 50% by 2050 in real terms (36% national average)



Higher Electricity Demand Over Time

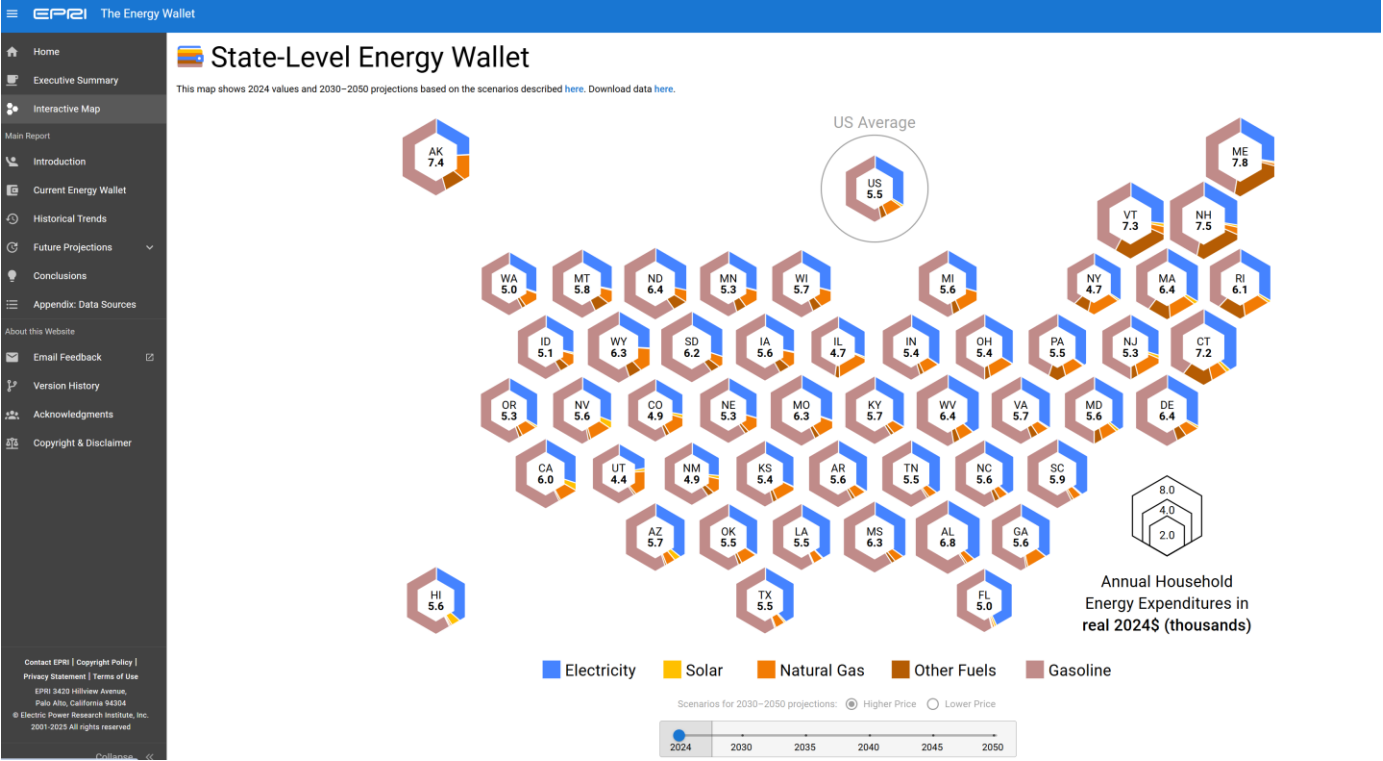
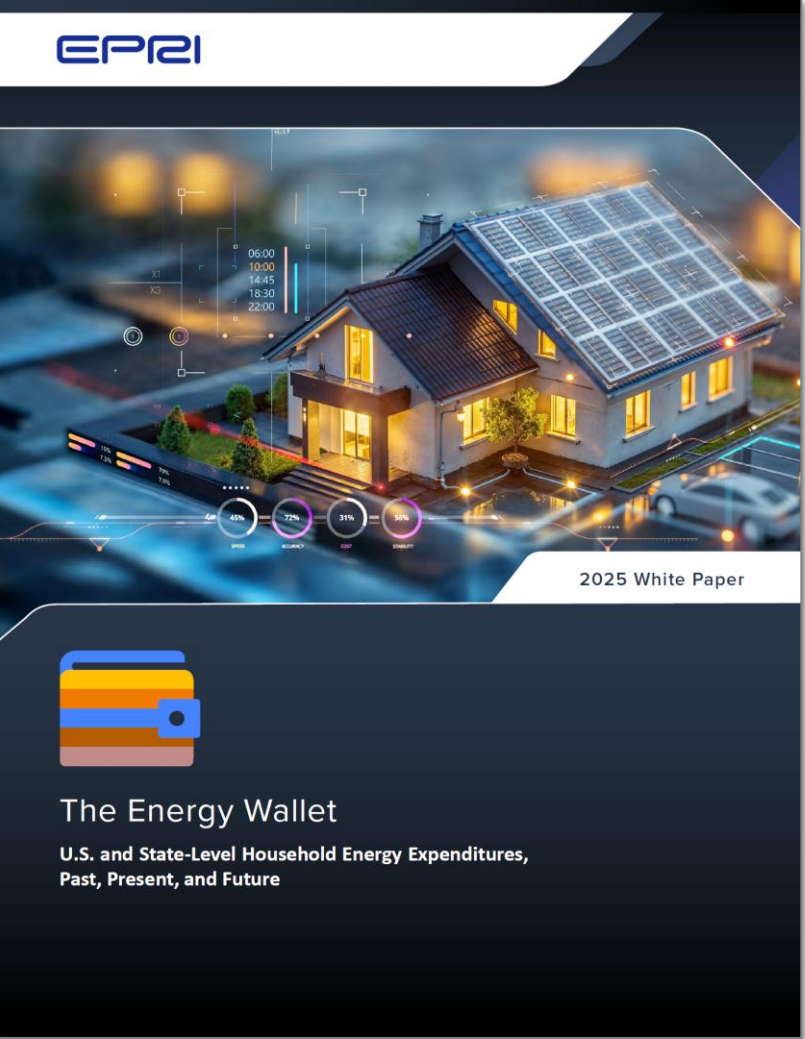
Deployment of electric vehicles and heat pumps increase electricity demand and spending, but these increases are more than offset by lower gasoline



Lower Energy Wallet Even with Higher Fuel Costs

Higher fuels costs (e.g., from LNG exports) and removal of IRA credits can still lead to lower household costs relative to today, especially with electrification and efficiency

Energy Wallet Report Publicly Available



Interactive website at <https://energywallet.epri.com/>

[EPRI Report 3002033594](#)



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