

Dr. Loraine Lundquist

- Ph.D. in physics from UC Berkeley
- Faculty associate at CSUN's Institute for Sustainability
- Ran for LA City Council Dist 12 in 2020, lost with 49.4% of the vote



Local Efforts at Decarbonization: How you can get involved!





100% Carbon-Neutral Grid



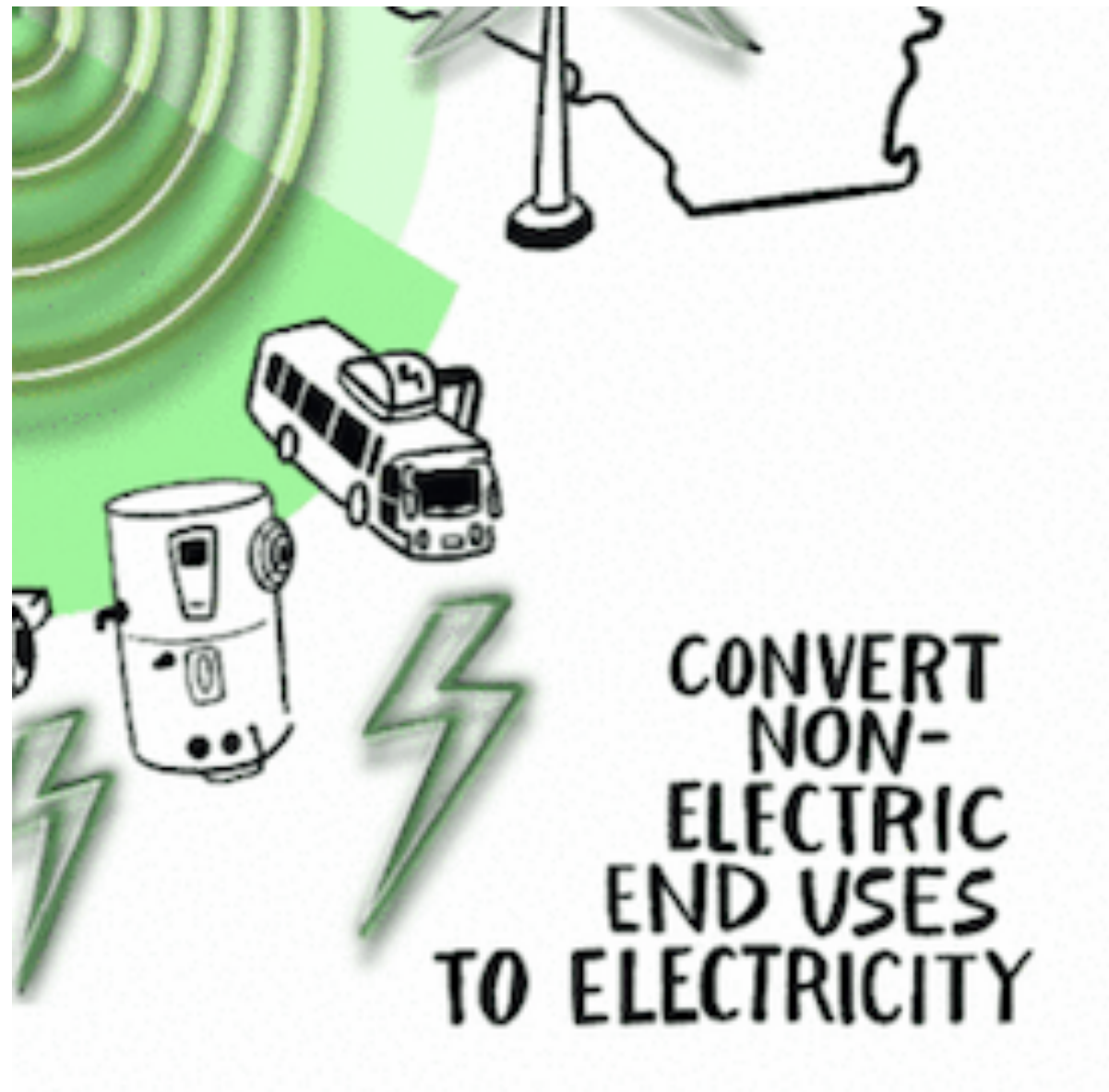
- Largest, most comprehensive study EVER on how to achieve 100% renewable energy (with NREL)
- City Council chose aggressive track: carbon neutral electricity by 2035
- All scenarios require big investment in wind and solar every year starting now
- LADWP is working through implementation. **They will hold public meetings on implementation strategy in May**



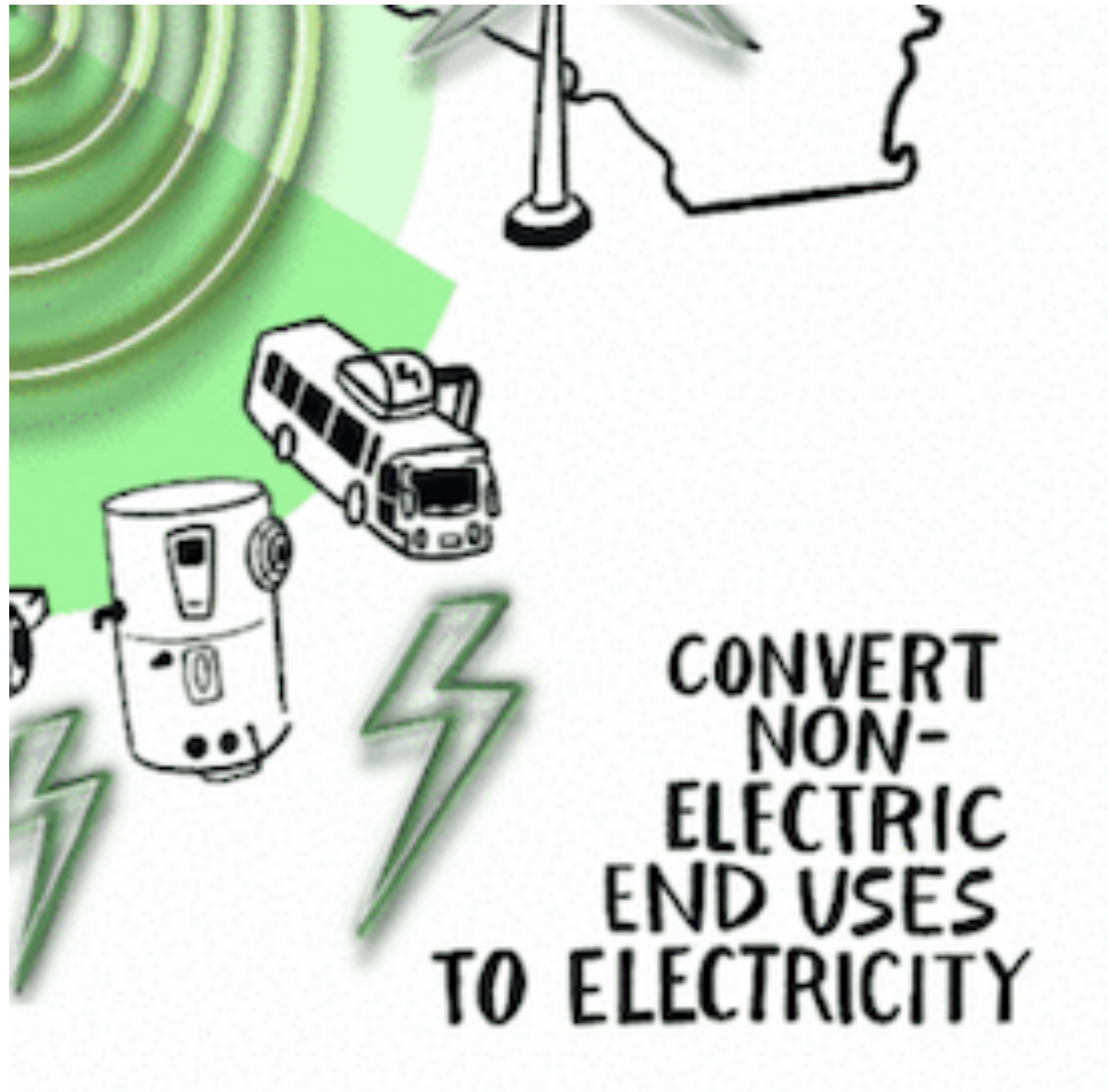
100% Green Power Default



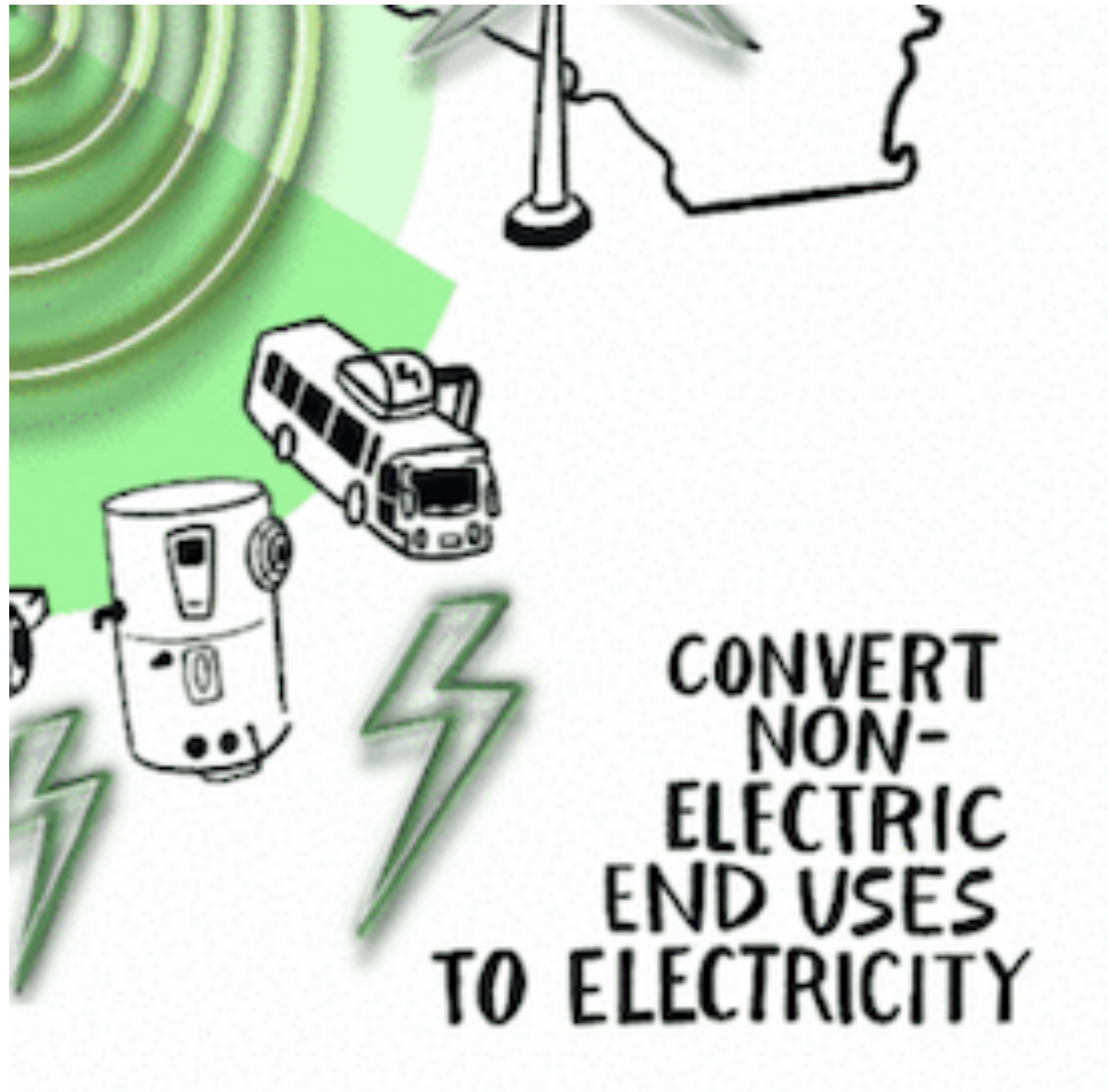
- Serves a number of cities in LA and Ventura County including Rolling Hills Estates and Redondo Beach
- By October, 18 member cities including Redondo Beach and others will have 100% Green Power as the default rate option



- Motion introduced in LA City Council Feb 10: Require all new construction to be zero fossil fuels by Jan 1, 2023
- 50 other cities in CA



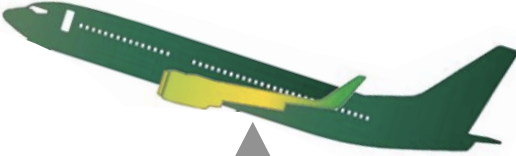
- Motion passed LA County Board of Supervisors 3/15: Require all new construction to be zero fossil fuels by Jan 1, 2023.
- Explore funding opportunities to accelerate electrification of existing buildings



South Coast Air Quality Management District

- Long-term Air Quality Management Plan: Considering requiring only zero-emission furnaces and water heaters allowed for purchase

What can we electrify?



Planes

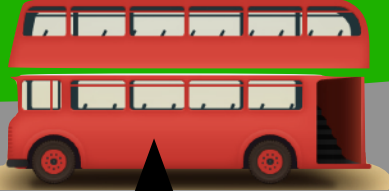
Ships



Building Heat



Water heaters



Buses & Trucks

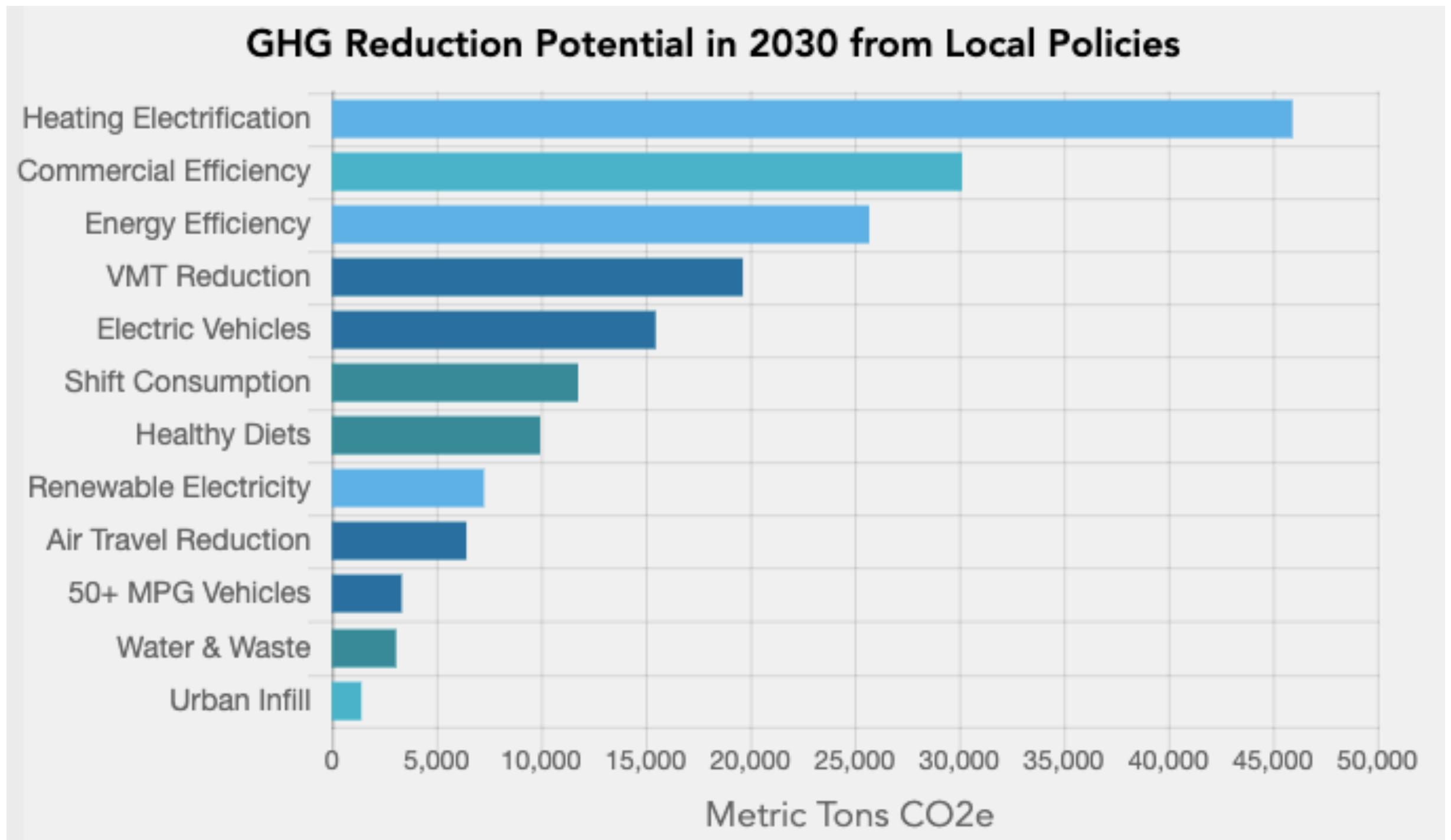
Passenger vehicles



Stoves & Ovens

Clothes Dryers

GHG Reduction Potential in Palos Verdes Peninsula



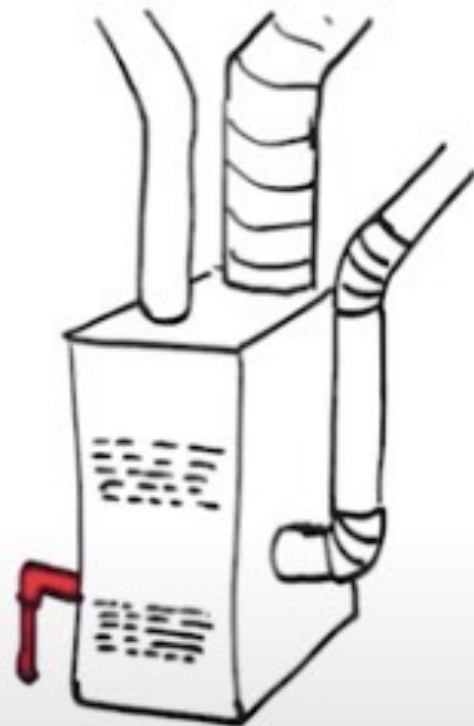
Heating and Cooling in one: Electric Heat Pump



- It's both furnace and AC
- More efficient
- Safer than gas
- Often cheaper, (installation can be \$\$)
- Quiet
- Less indoor air pollution

Heat pumps use much less TOTAL energy than combustion

Gas furnace



status quo

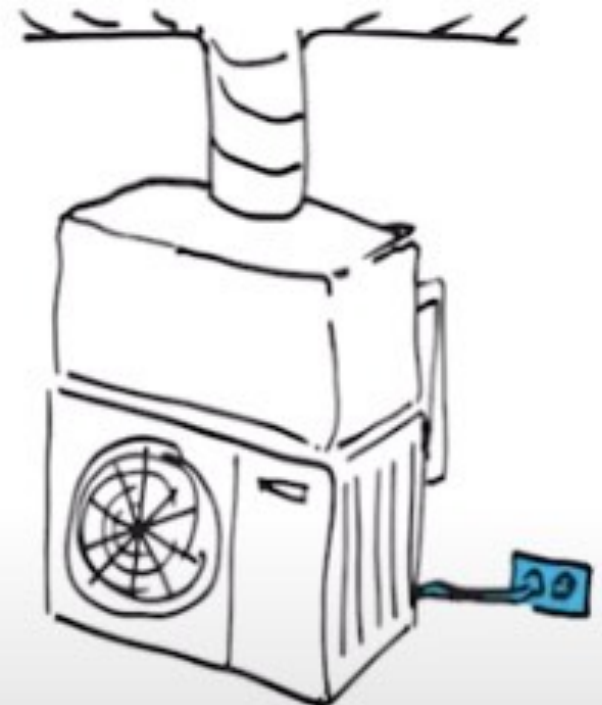


waste

clean
electrification



Electric Heat Pump



ENERGY USE.

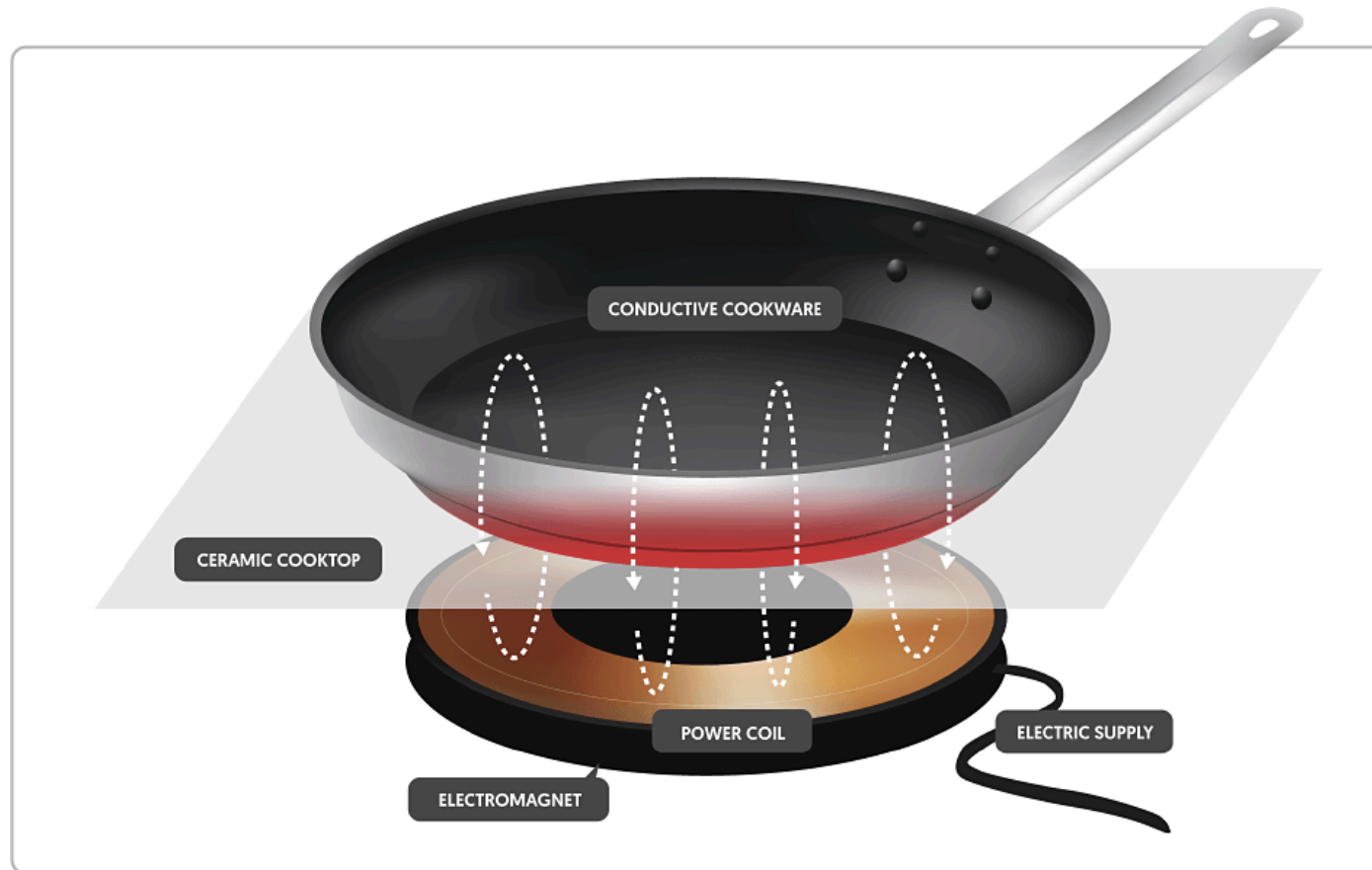
This is widely true for all electric appliances – they are inherently more efficient..

It's physics!

Induction Stove: NOT your parent's glass-top electric



Induction stove: heats via magnetic induction



- More efficient
- Preferred by chefs because fast heating and precise heat control
- Safer than gas (getting burned)
- Safer than gas (indoor pollution)
- Safer than gas (explosion)
- More expensive

Even modern gas stoves create harmful levels of indoor air pollution



- **Children in homes with gas stoves are 42% more likely to experience asthma symptoms, and 24% more likely to be diagnosed with lifetime asthma**
- **Homes with gas stoves have about 50-400% higher nitrogen dioxide levels, 30x more carbon monoxide, and 2x as much PM2.5**

<https://rmi.org/insight/gas-stoves-pollution-health>

<https://academic.oup.com/ije/article/42/6/1724/737113?login=false>

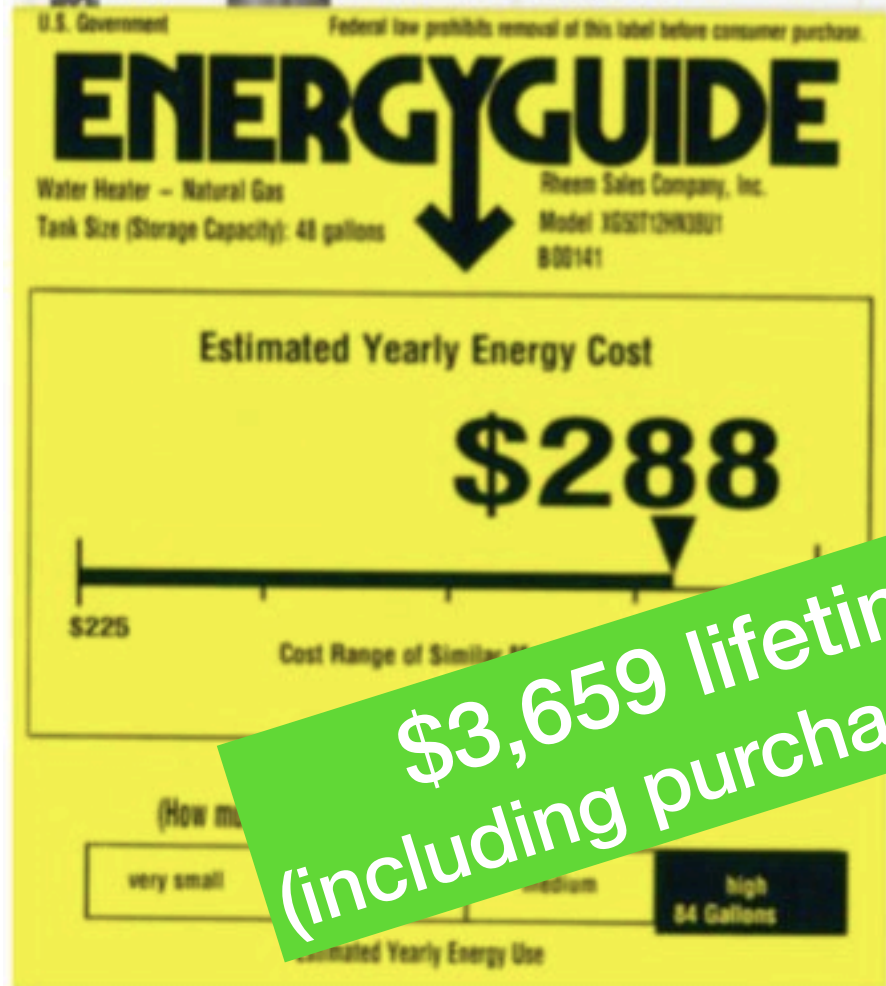
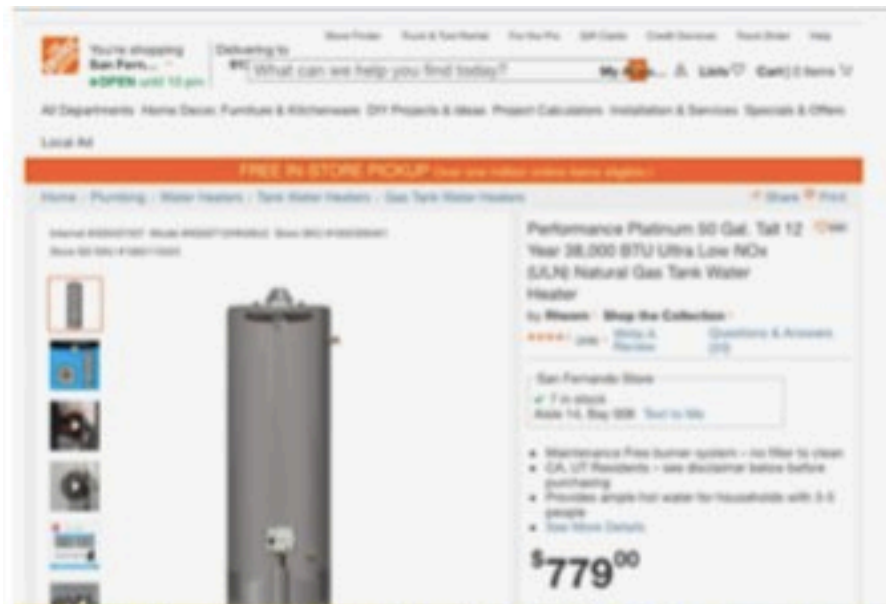
Electric Water Heater



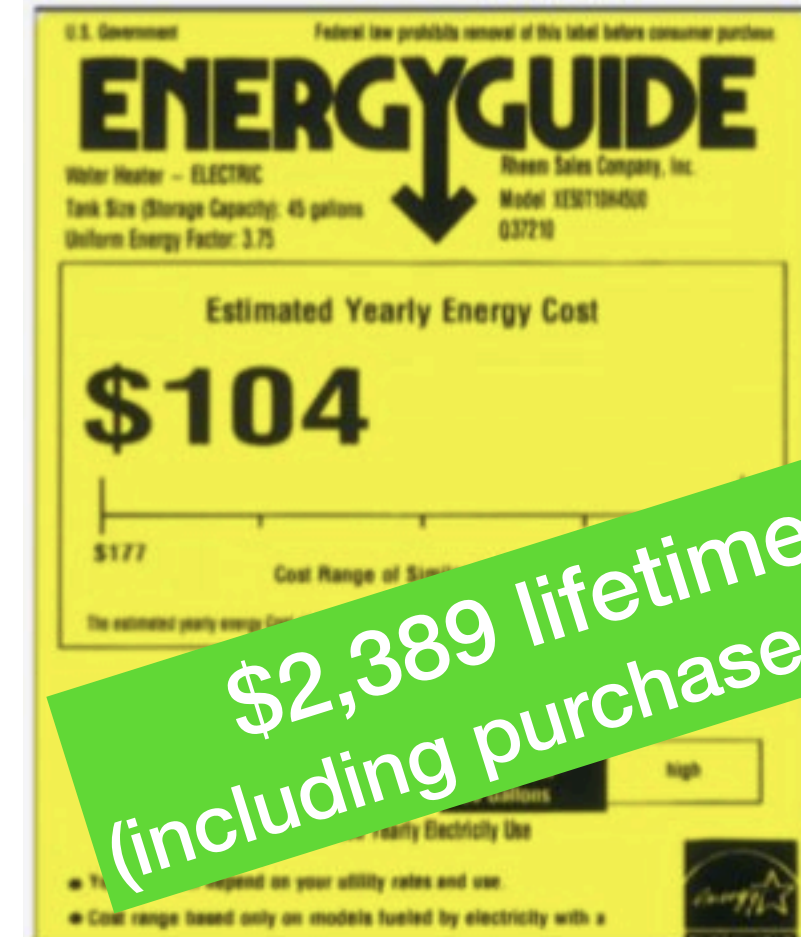
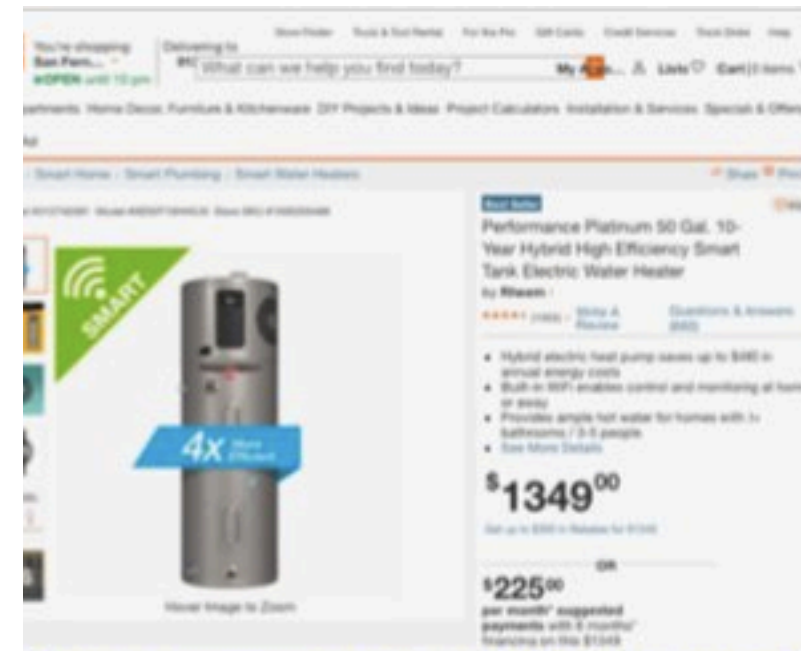
- Tank and tankless versions
- Often cheaper over the lifetime

Electric water heaters are cheaper over their lifecycle

Gas Water Heater



Electric Water Heater



Questions?

[Follow me](#)



[@loraineforla](#)