

Electrification: It's a Gas, Gas, Gas

Jay Stein

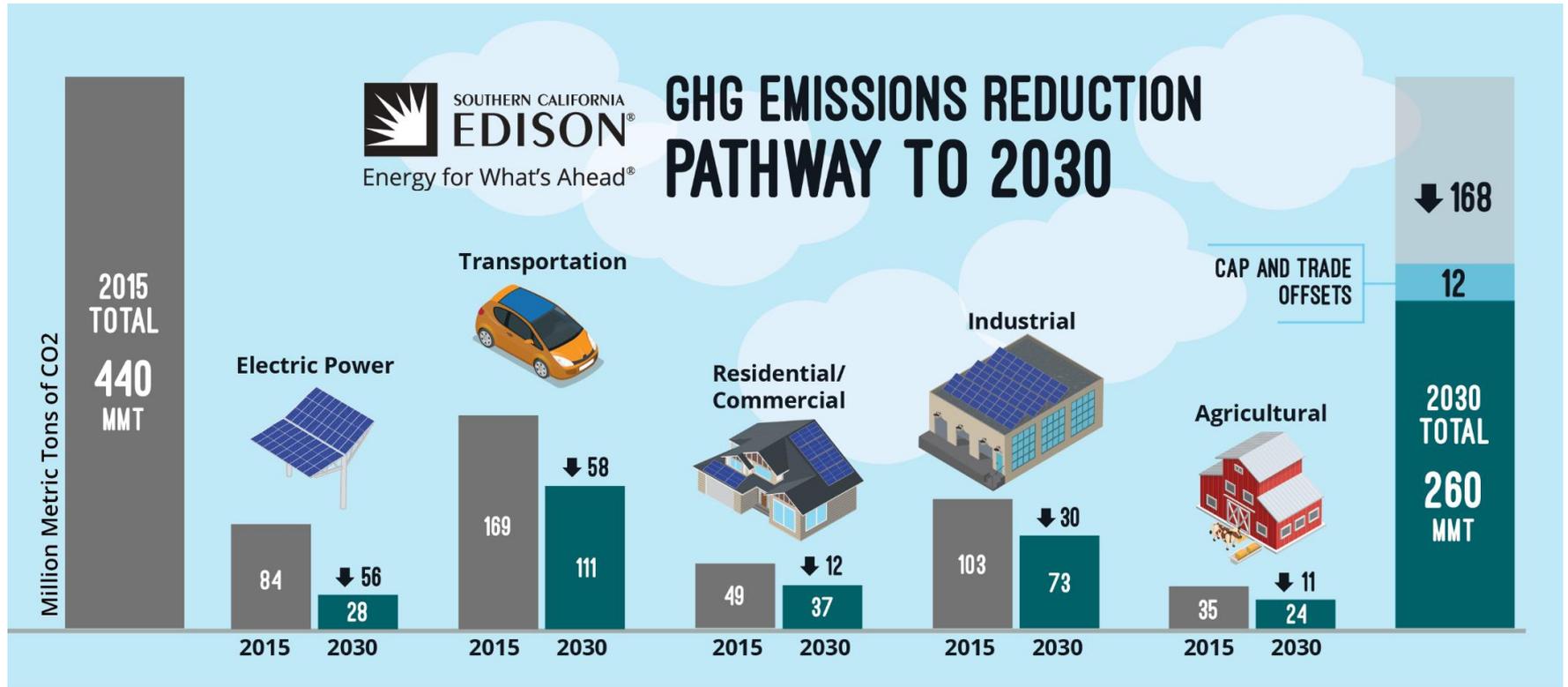
Senior Fellow, E Source



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Electrification is picking up momentum



Source: [The Clean Power and Electrification Pathway: Realizing California's Environmental Goals](#) (PDF), Southern California Edison (2017)

Is this the beginning of the end for gas?

“

The end of natural gas is near.”

–Danny Kennedy, Managing Director,
California Clean Energy Fund

“

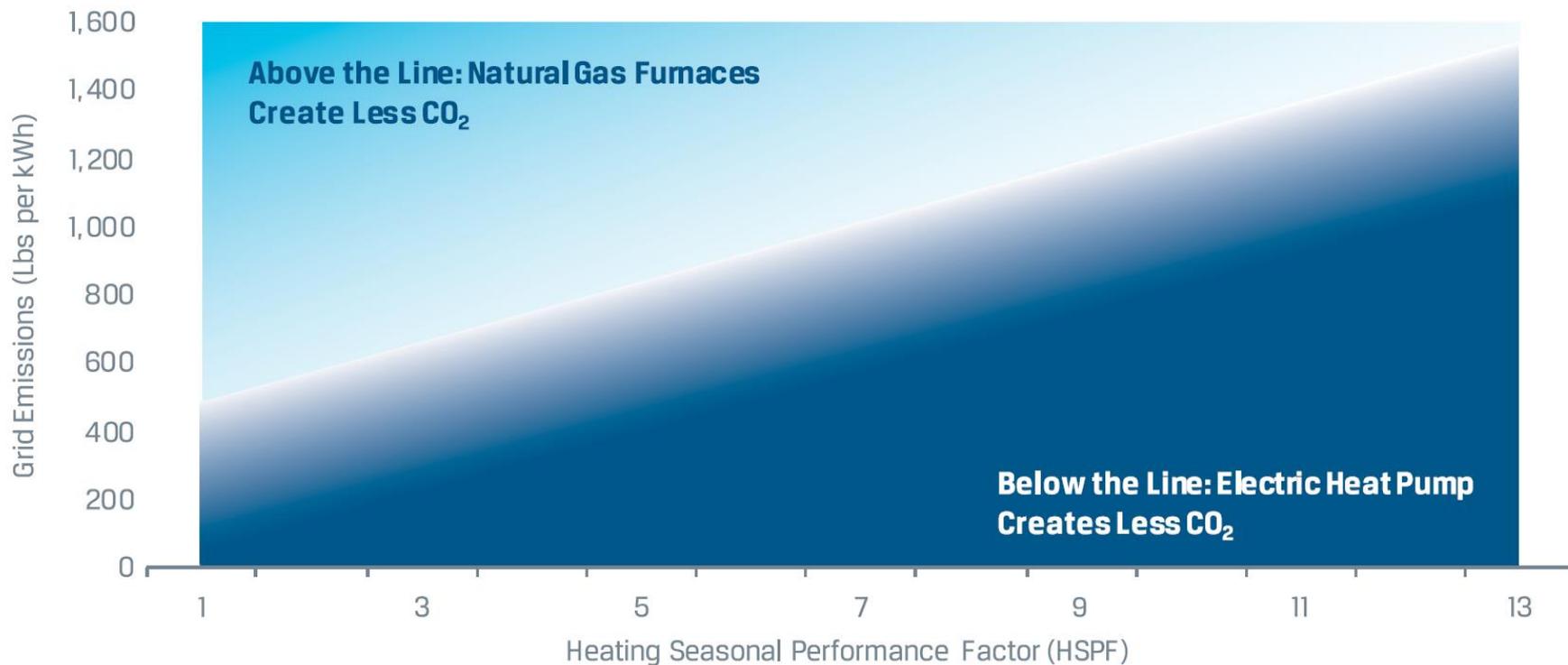
We need to get off the gas.”

–Kendra Tupper, Chief Sustainability
Officer, City of Boulder

Let's make good use of the gas grid



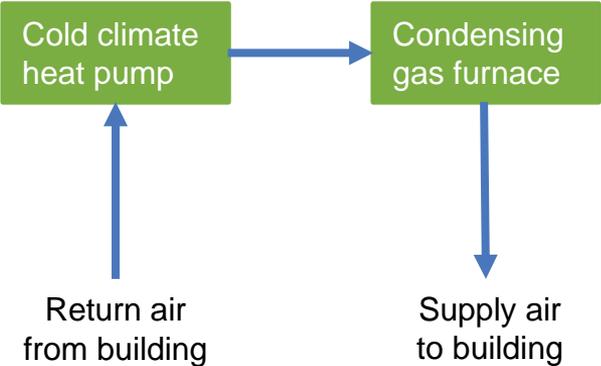
Minimum emissions a moving target



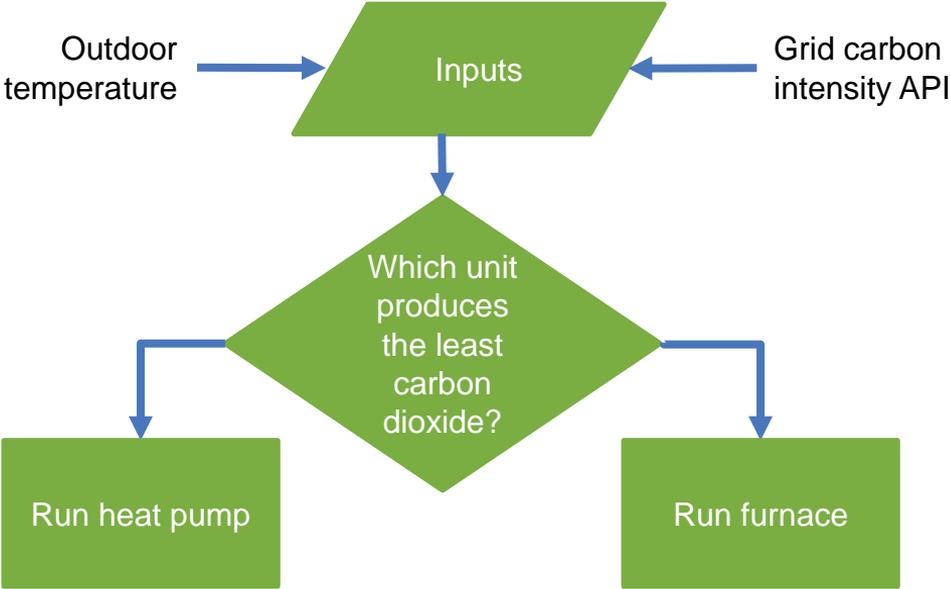
Source: American Gas Association

Dual-fuel carbon-responsive HVAC

Physical system



Controls



Where does grid carbon intensity data come from?



Benefits

Everyone:

Lower retrofit costs
Resilience

Gas companies:

Participate in
decarbonization
Not excluded from
heating market

Dual-fuel:

Protect gas business
Comprehensive offering

Electric companies:

Lower retrofit costs
Slow down influx of load
onto grid

Climate advocates:

One less point of conflict

The fine print



- Lots of unknowns:
 - Costs
 - Control strategies
 - Location specific
- Might have to compensate customers for uneconomic operation

For more information



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