

California Energy Commission

Load Management Standards and MIDAS



Enabling Mass-Market Demand Flexibility
Through Hourly Marginal-Cost Based
Rates and Responsive Automation

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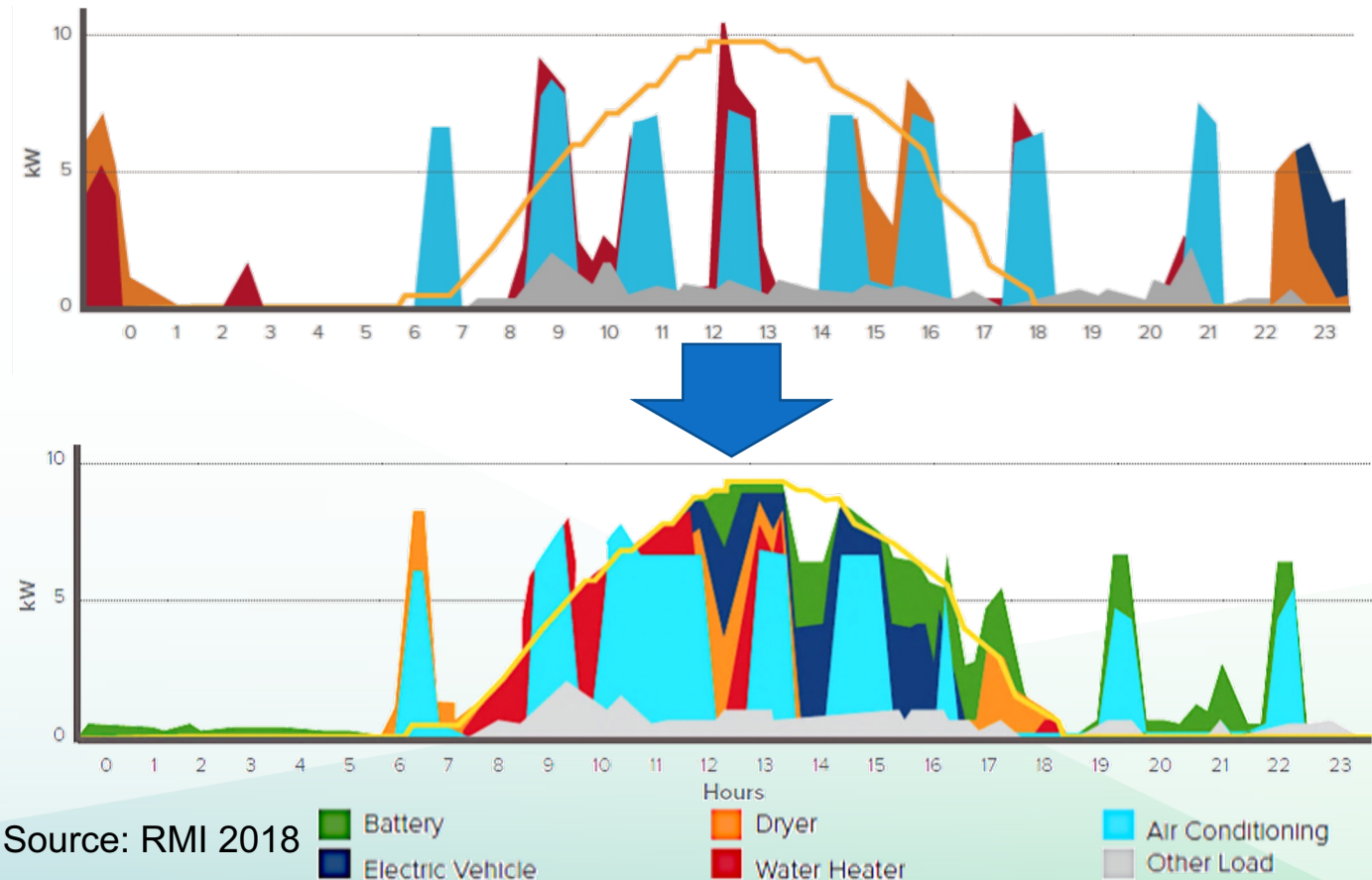
Load Management Standards Lead

Efficiency Division, California Energy Commission



Load Management

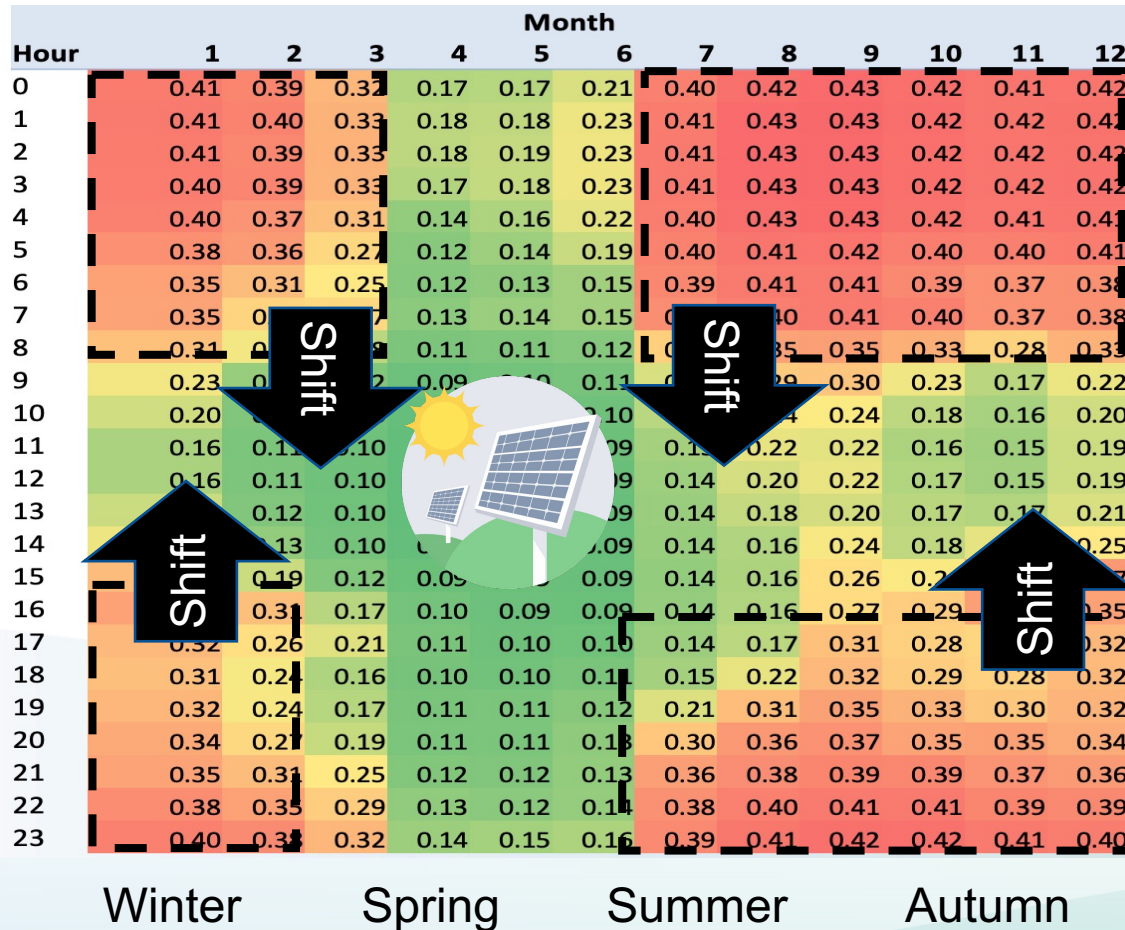
The process of maintaining the electric supply-demand balance by adjusting the load rather than the power station output.





Decarbonization Requires Load Shifting

2021 Hourly Marginal Emissions Intensity (MT CO₂/MWh)



Shift electricity use from dirty hours...

...to clean hours
(charge, heat, cool, pump: 9am to 3pm)

HOW?

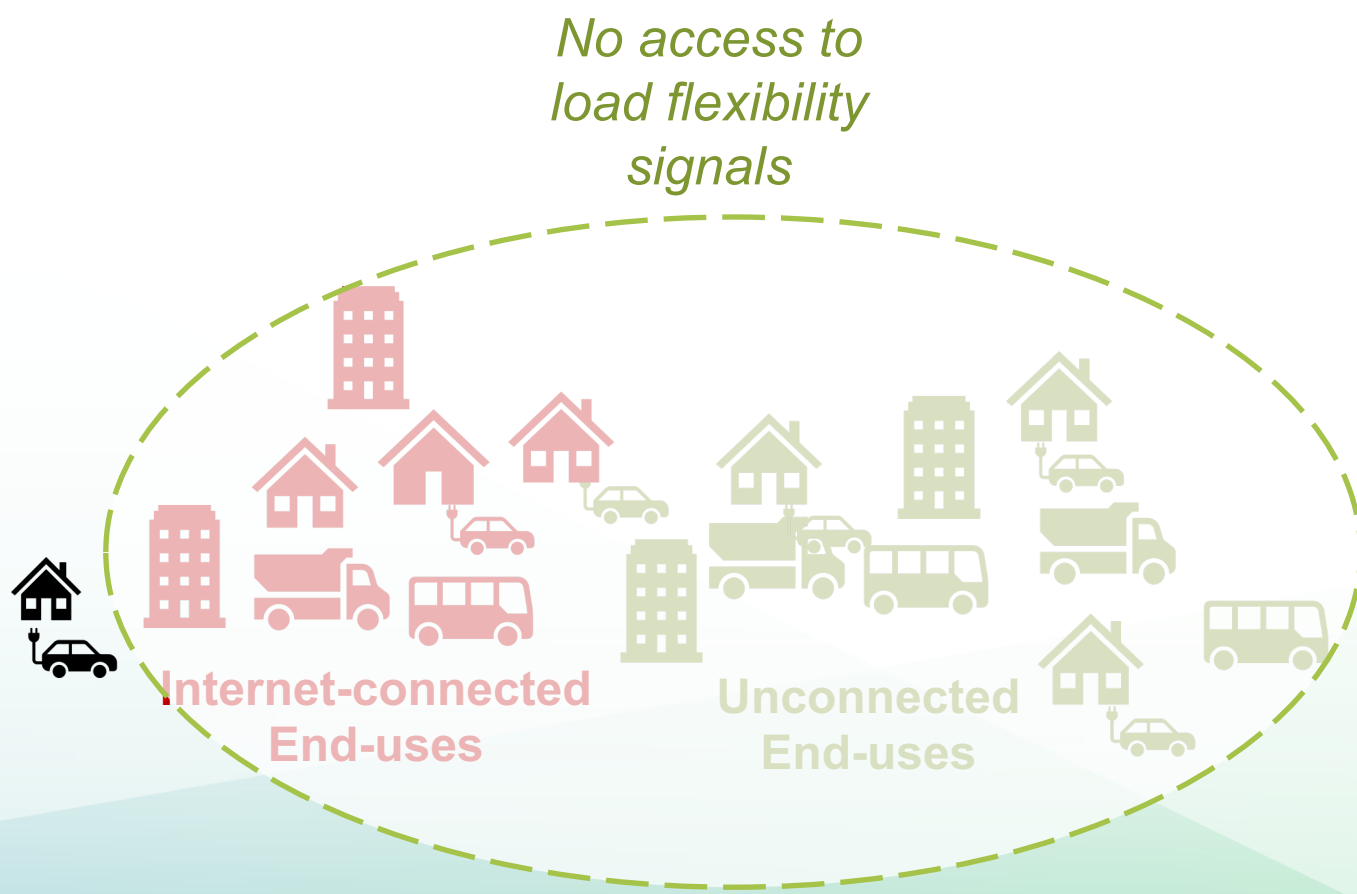
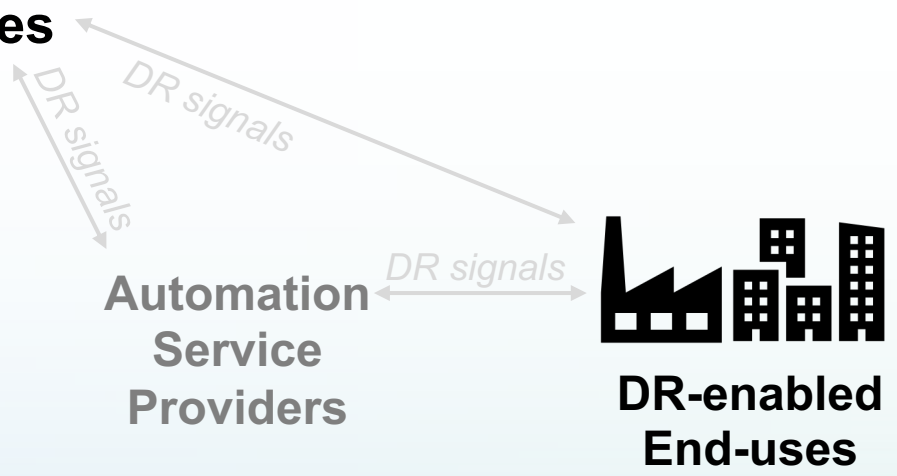
Reschedule default run-times by responding to price/GHG signals



Current Demand Response System

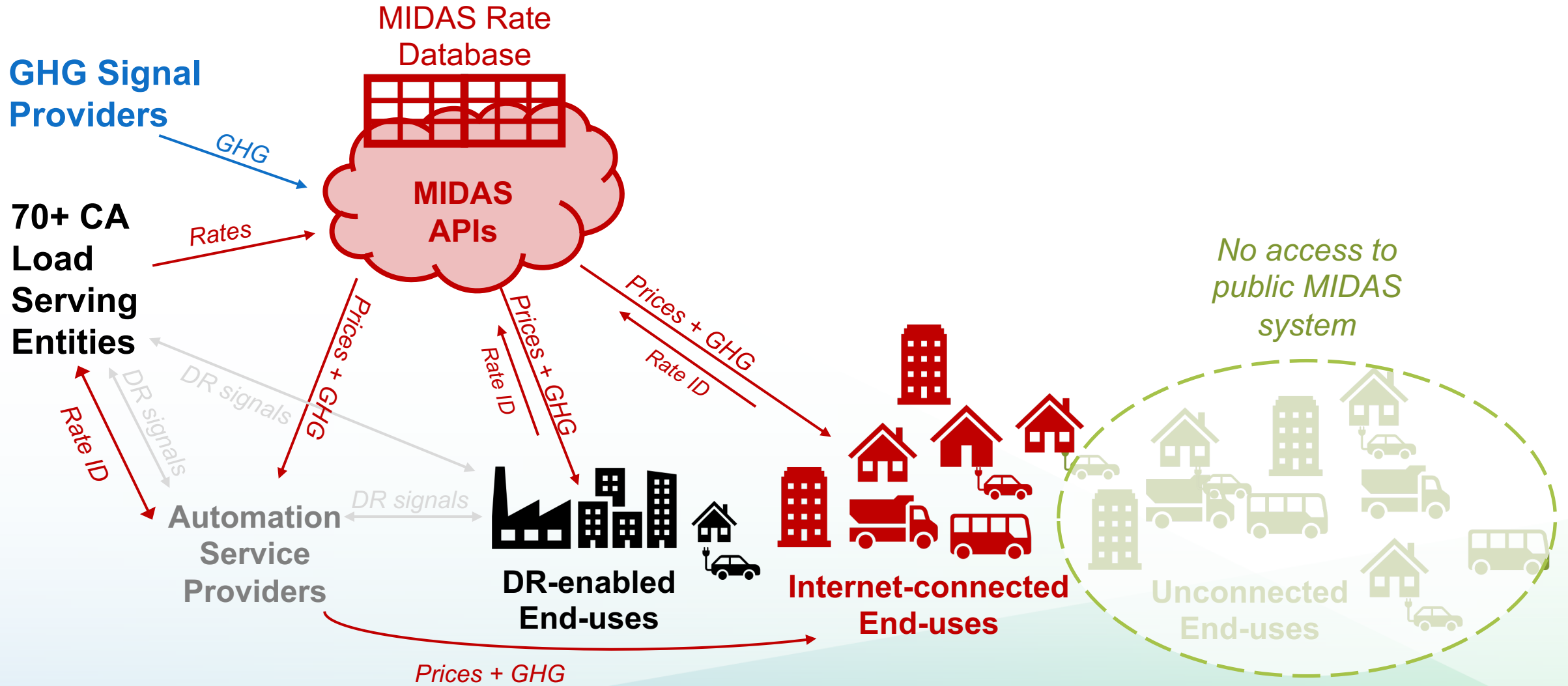
GHG Signal Providers

70+ CA Load Serving Entities



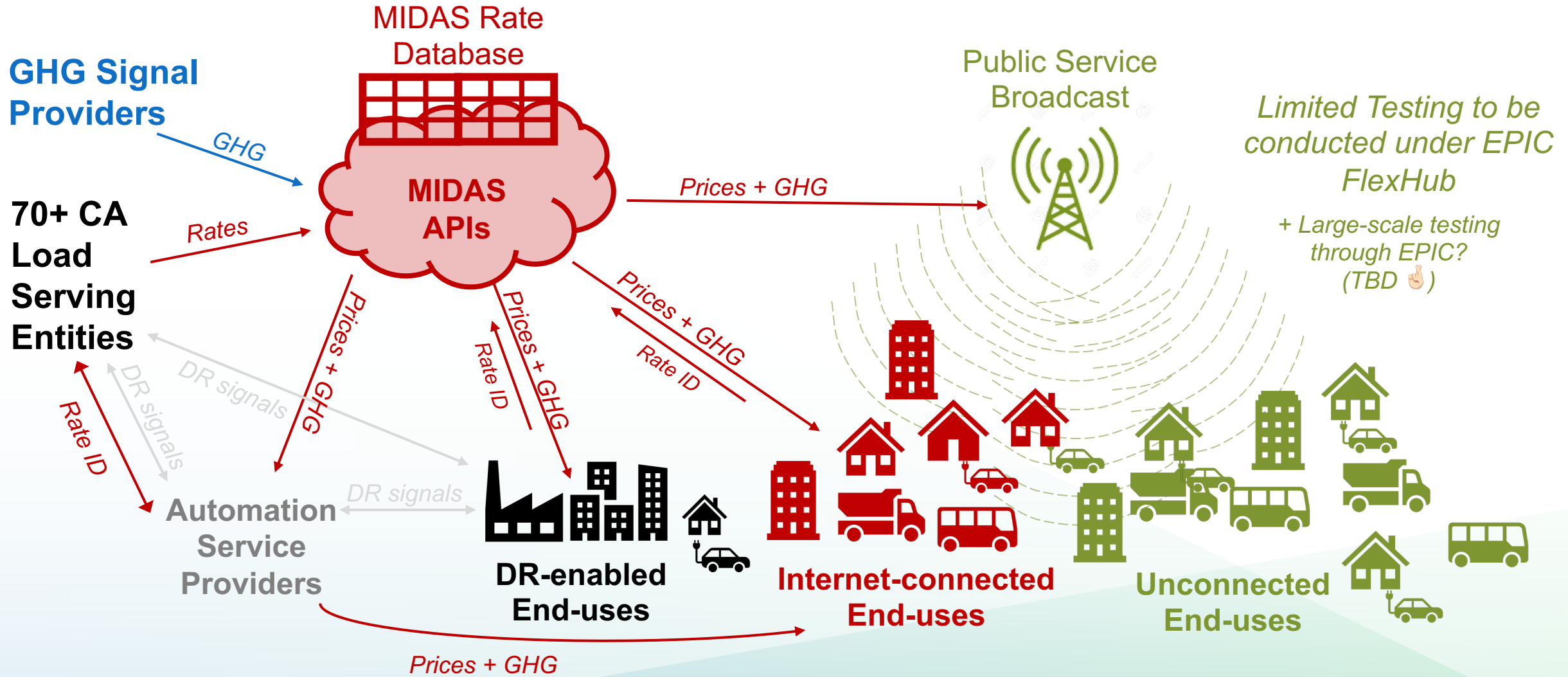


In Development: Public MIDAS System





Next: Expand to the Unconnected





CA Load Management Standards

1

Rate
Database

Utilities maintain time-varying rates in the MIDAS rate database

2

Automation
Services

Develop a statewide rate information access tool to support automation services

3

Hourly
Rates

Provide customers with the option of rates that change at least hourly to reflect marginal wholesale costs

4

Customer
Education

Integrate information about new hourly rates and automation technologies into customer education and outreach programs



Customer Benefits

- Universally accessible and free
- 100% voluntary for all customers, who can...
 - Choose a time-dependent rate or program (or not)
 - Choose their own automation technology (or not)
 - Choose their own valuation of electricity services
- Reduce inequities
 - Any customer can participate and save money
 - Reward the most efficient customers, not those with the largest curtailable loads (in contrast with DR)
 - Reduce overpayment by customers with flatter load shapes
- Reduce bills by avoiding peak rates
- Increased satisfaction of contributing to GHG reductions
- Lower system costs → Lower rates for all customers



Thank You!

Questions:

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