



California Energy Commission Load Management Standards



*SMUD's Strategic Development Board
Committee meeting*

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California State Goals

100% emissions-free vehicles by 2035



100% carbon-free grid by 2045

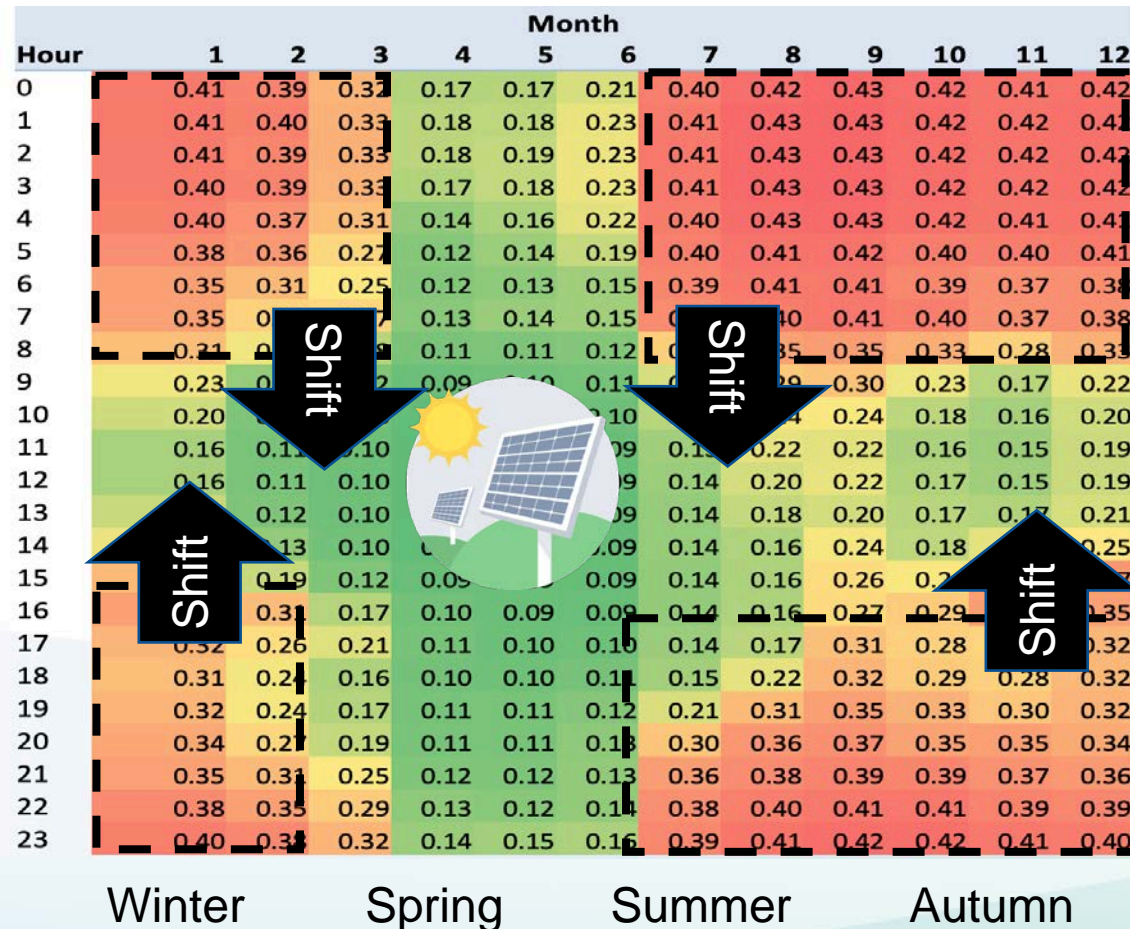




Renewables alone aren't enough

Load management helps decarbonize the grid

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?

Publish price & emissions signals for automation devices to reschedule default run-times



Challenges to Load Management

1. No public access to machine-readable TOU prices
2. Markets for grid-responsive automation are limited
3. Existing TOU rates not sufficiently granular in time/space
4. Customers unaware of load shifting automation options



Proposed Amendments to the CEC's Load Management Standards

1

Rate Database

- Maintain the accuracy of existing and future time-varying rates in the publicly available and machine-readable MIDAS rate database.

2

Third-Party Services

- Develop a standard rate information access tool to support third-party services

3

Hourly Rates

- Develop and submit locational rates that change at least hourly to reflect marginal wholesale costs.

4

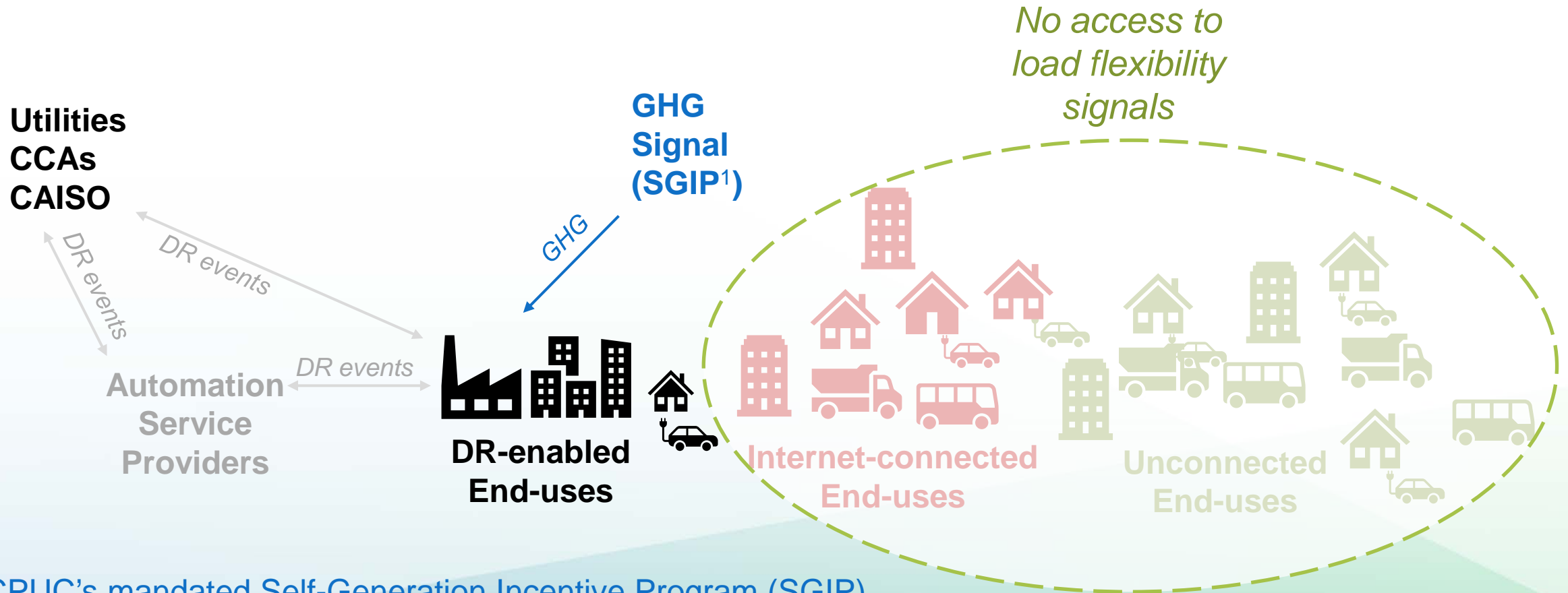
Customer Education

- Integrate information about new time-varying rates and automation technologies into existing customer education and outreach programs.



Load Management Today

Payment for Load Control / Demand Response (DR)



¹ The CPUC's mandated Self-Generation Incentive Program (SGIP)



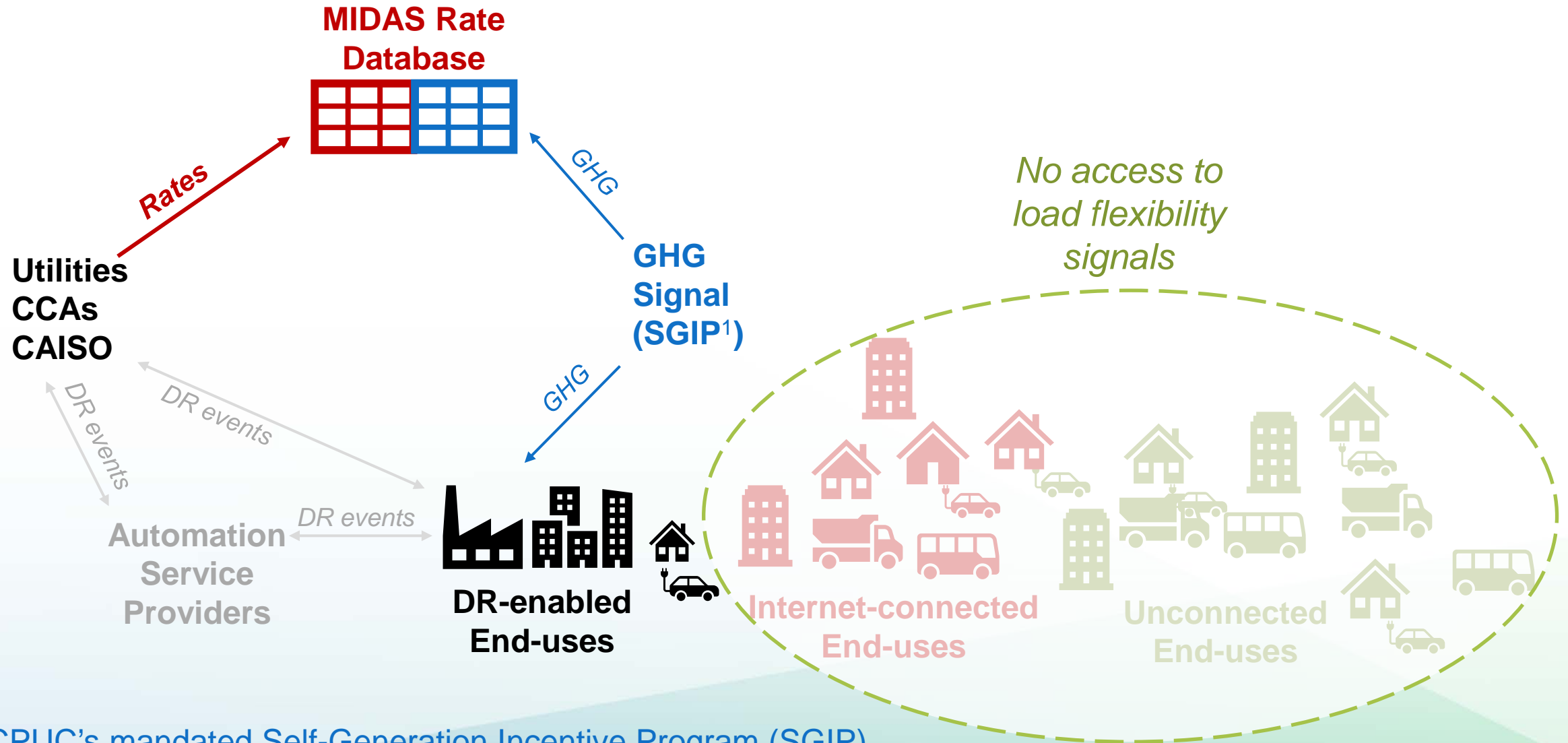
Shortfalls of DR programs

- High costs
- Limited demand resources
- Limited customer involvement, user experience, and sustainability
- Limited support for technology markets
- Equity issues



Load Management Standards

Time-varying rates and greenhouse gas (GHG) signals

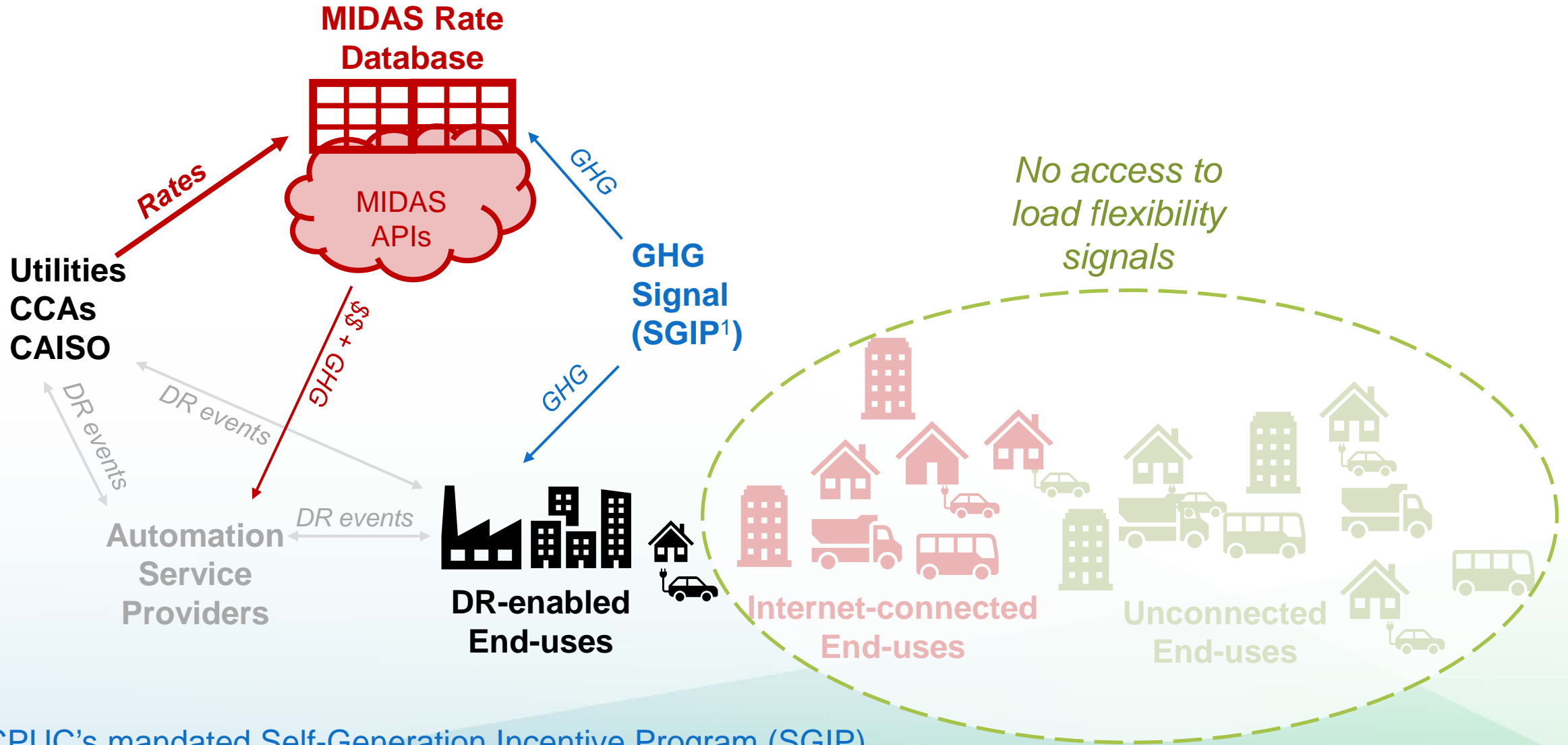


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Load Management Standards

Time-varying rates and greenhouse gas (GHG) signals

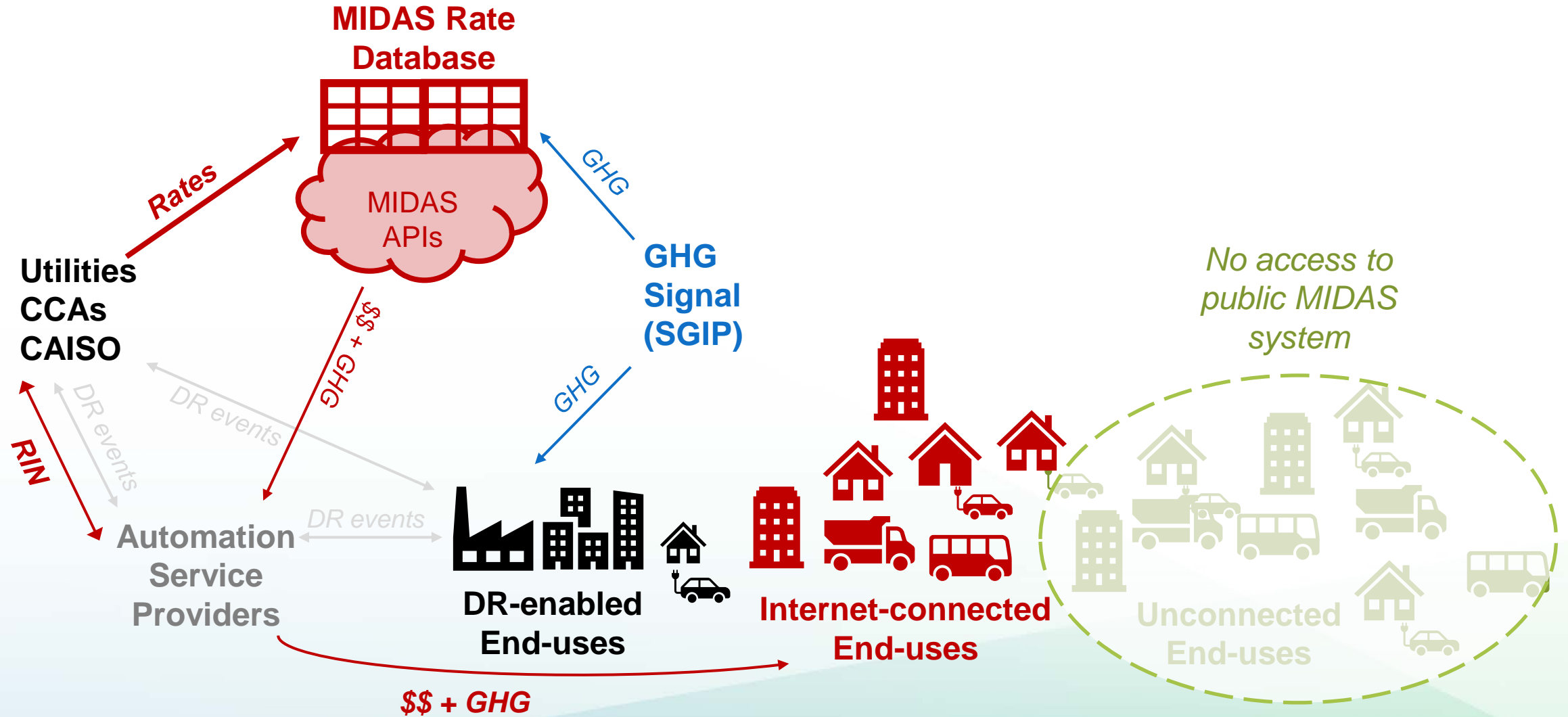


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Load Management Standards

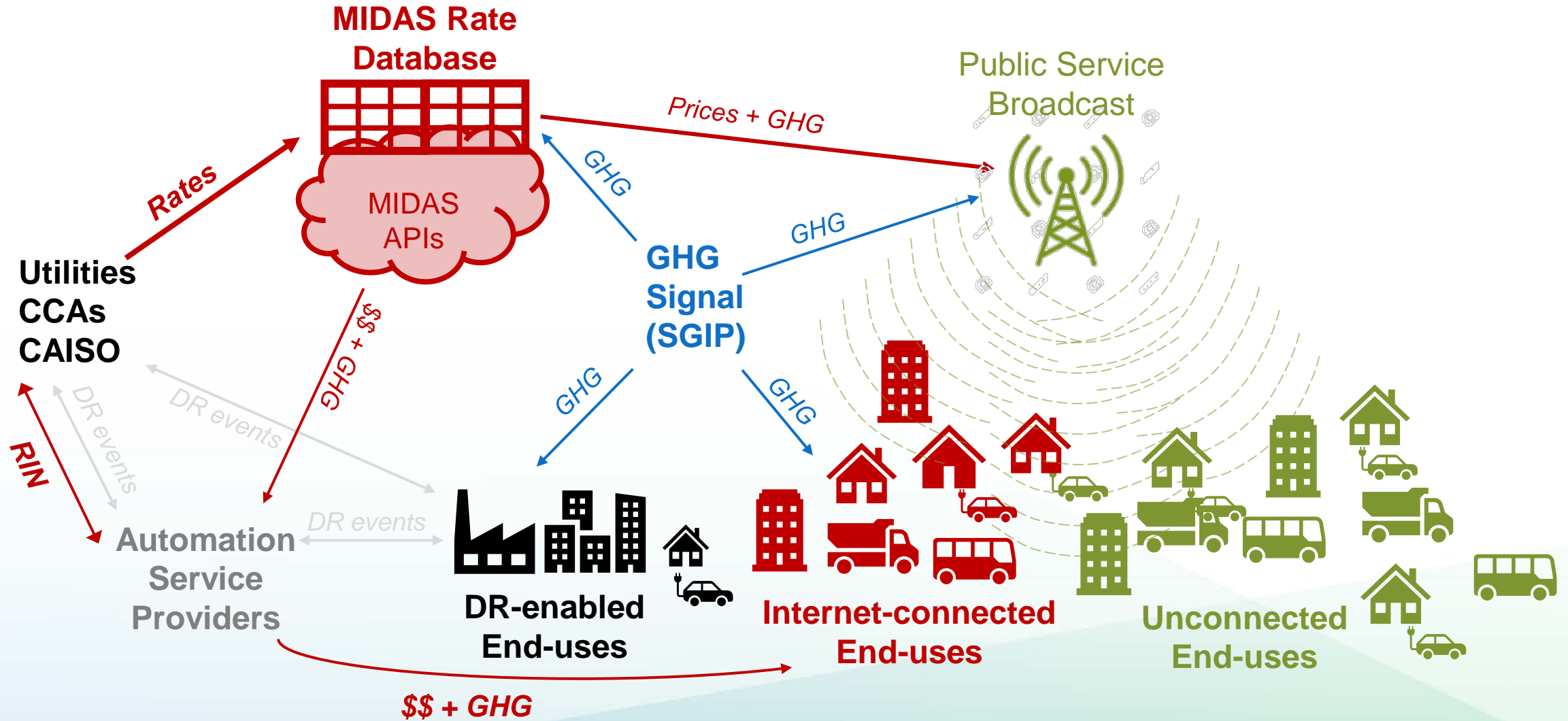
Time-varying rates and greenhouse gas (GHG) signals





Long-term Vision: Public Broadcast

Time-varying rates and greenhouse gas (GHG) signals





Locational Marginal Pricing Benefits

- Customer benefits
- Societal benefits
- System and utility benefits



Schedule (may be revised)

1. MIDAS w/ TOU, GHG, FlexAlerts: **2021**
2. Flexible Demand Appliance Standards: **2023**
3. MIDAS locational hourly pricing: **2025**
4. Public broadcast: **under research**



For more information

- CEC Staff Contacts
 - Technical analysis: Karen Herter
 - Economic analysis: Gavin Situ
 - Project management: Gabe Taylor
- Relevant Documents and Websites
 - [CEC Draft Staff Analysis of Proposed Amendments](#)
 - [2020 Load Management Rulemaking website](#)
 - [Load Management Standards: CCR Title 20 §1621-1625](#)
 - [Flexible Demand Appliance Standards: PRC 25402](#)
 - [Warren-Alquist Act: PRC 25403.5](#)