

DOCKETED	
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2023 IEPR Additional Achievable Fuel Substitution Scenarios

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Acronyms, Initialisms, and Abbreviations

A&A – Additions and Alterations
AAEE – Additional Achievable Energy Efficiency
AAFS – Additional Achievable Fuel Substitution
AQMD – Air Quality Management District
BAU – Business as Usual
CARB – California Air Resources Board
CCA – Community Choice Aggregators
CEC – California Energy Commission
Com – Commercial Sector
EAD – Energy Assessments Division
EBD – Equitable Building Decarbonization
FSSAT – Fuel Substitution Scenarios Analysis Tool
GT AAFS – 2023 Gradual Transformation Additional Achievable Fuel Substitution Scenario
HPWH – Heat Pump Water Heater
IEPR – Integrated Energy Policy Report

IOU – Investor-Owned Utility
IRA – Inflation Reduction Act
LR – Local Reliability Scenario
NC – New Construction
PiCS – Programs and incremental Codes and Standards
POU – Publicly Owned Utility
PS – Planning Scenario
RENs – Regional Energy Networks
Res – Residential Sector
ROB – Replace on Burnout
SH – Space Heaters
TECH – Technology and Equipment for Clean Heating initiative
WH – Water Heaters
ZEAS – Zero-Emission Appliance Standards



2023 AAFS Scenarios

- **“Additional Achievable” Load Modifier Scenarios**

- Capture a range of additional potential impacts beyond the baseline demand forecast but are within the range of what is reasonably expected to occur

- **Two AAFS Impact Categories**

1. Programs and incremental Codes and Standards (PiCS)
2. **ZEAS** (modeled using FSSAT)

AAFS Modeling Framework

IEPR Baseline Gas Forecast

1. AAFS & AAEE PiCS Scenarios
(modeled using R scripts and a set of Excel workbooks)

2. ZEAS Scenario impacts
(modeled using FSSAT that incorporates the PiCS scenarios)

AAFS IEPR Scenario Results



Modeled 2023 AAFS PiCS

- **IOU fuel substitution programs**
- **POU fuel substitution programs**
- CCA/RENS
- Title 24 Res and Non-Res NC and A&A
- Targeted Electrification
- Affordable Housing and Sustainable Communities

- **TECH Clean California**
- California Electric Homes Program
- Wildfire and Natural Disaster Resiliency Rebuild

- **Equitable Building Decarbonization (EBD)**
 - IRA Incentive Program
 - CEC’s EBD Program Direct Install & Tribal Direct Install
 - EBD Non-IOU TECH
- Food Production Investment Program
- Self-Generation Incentive Program HPWH
- Local Governments Challenge

AAFS PiCS Scenarios

1	2	3	4	5	6
Impacts Also Increase by Scenario					
Impacts Also Increase by Scenario					
Impacts Also Increase by Scenario					



PiCS and ZEAS in 2023 AAFS Scenarios

Planning
(PS)

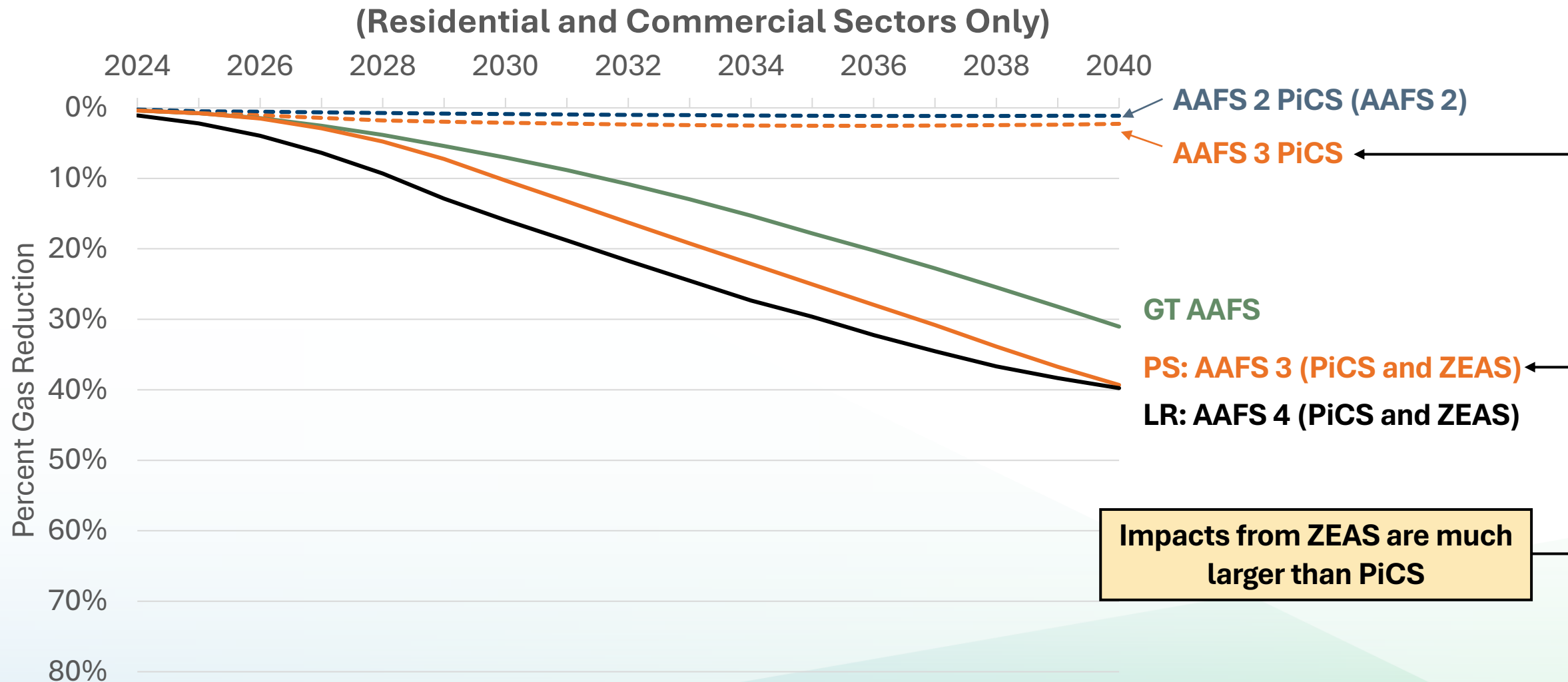
Local
Reliability (LR)

1. PiCS Scenarios	AAFS 1	AAFS 2	GT AAFS	AAFS 3	AAFS 4	AAFS 5	AAFS 6
AAEE PiCS			3	3	2	2	2
AAFS PiCS	1	2	3	3	4	5	6

2. FSSAT ZEAS Modeling	AAFS 1	AAFS 2	GT AAFS	AAFS 3	AAFS 4	AAFS 5	AAFS 6
Gradual Transformation to 100% ROB Adoption by 2040 (Res & Com SH & WH)	No FSSAT ZEAS Modeling		Included				
CARB 2030 ZEAS				Slow Ramp for SH & WH	SH & WH	All Appliances + Res Propane	Efficient for All Appliances + Res Propane
Bay Area AQMD Rules 9-4 & 9-6 (Res & Com SH & WH)				Included	Included	Included	Included
South Coast AQMD 1146.2 (Com WH)			Included				Included

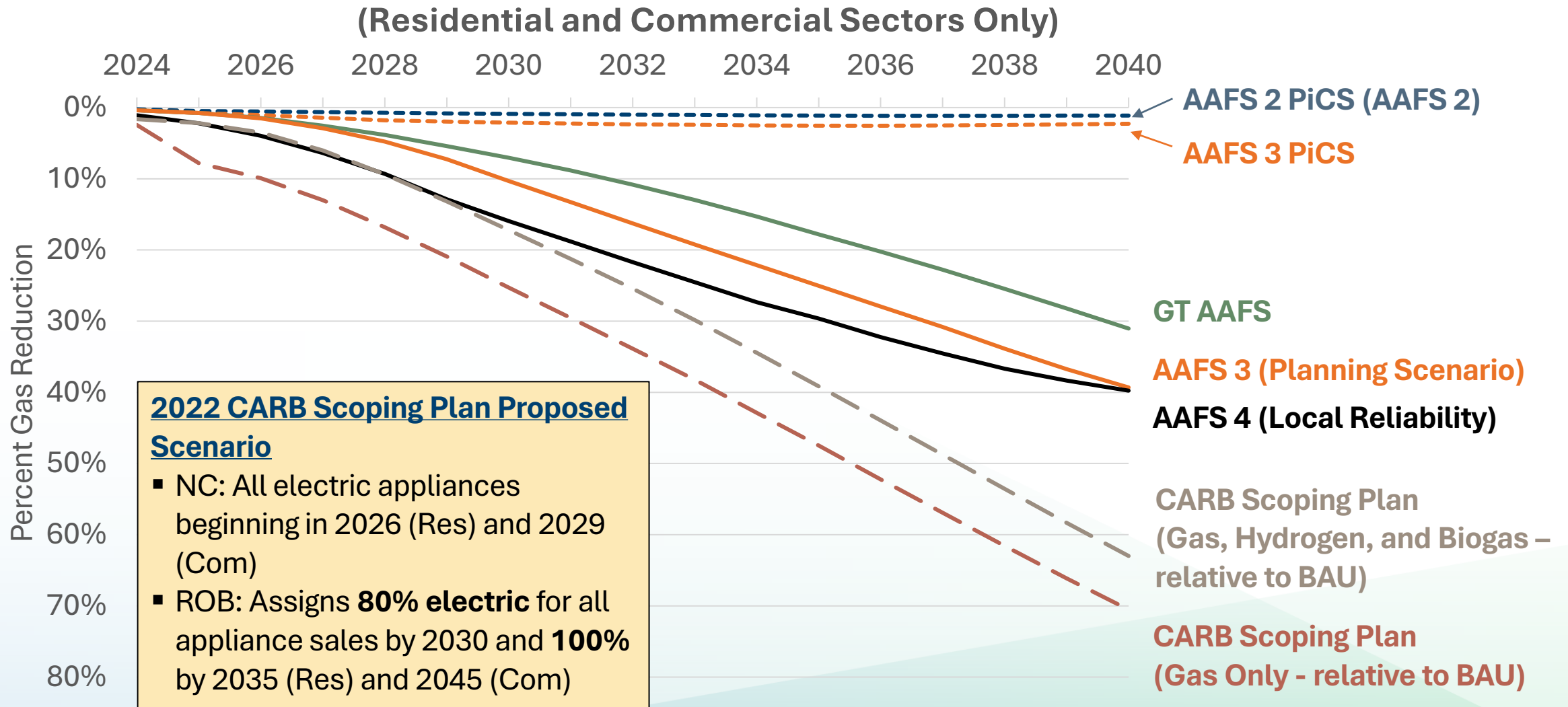


2023 IEPR Statewide Gas Impacts





Comparing 2023 IEPR and CARB Scoping Plan





Thank you