



**California Energy Commission
05.08.2024 Business Meeting
Backup Materials for Agenda Item No. 11**

**2023 Gradual Transformation Additional Achievable Fuel Substitution Scenario
(2023 GT AAFS Scenario) (Docket 23-IEPR-03)**

The following backup materials for the above-referenced agenda item are available as described below:

1. Proposed Resolution, attached below.
2. Notice of Availability, attached below.
3. 2023 GT AAFS Scenario results are available here: [California Energy Demand 2023-2040](https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report/2023-1), <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report/2023-1>

For the complete record, please visit:

- [Docket Number 23-IEPR-03](https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-IEPR-03), <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-IEPR-03>

To stay informed about this project and receive documents as they are filed, please subscribe to the proceeding subscription, which can be accessed here: [2023 Integrated Energy Policy Report](https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report), <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report>. Those on the subscription list receive email notifications and direct links when documents are filed in the proceeding docket.

STATE OF CALIFORNIA
STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION OF THE CALIFORNIA ENERGY COMMISSION ADOPTING THE 2023
GRADUAL TRANSFORMATION ADDITIONAL ACHIEVABLE FUEL SUBSTITUTION
SCENARIO, 2023-2040

WHEREAS, Public Resources Code section 25301(a) requires the California Energy Commission (CEC) to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices" and to "use these assessments and forecasts to develop and evaluate energy policies and programs that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety"; and

WHEREAS, the Integrated Energy Policy Report contains these assessments and associated policy recommendations and is adopted every two years, with an Integrated Energy Policy Report Update being adopted each interim year; and

WHEREAS, the 2023 Integrated Energy Policy Report stated that the CEC would develop in 2024 an alternative Additional Achievable Fuel Substitution scenario; and

WHEREAS, the CEC consulted with appropriate state and federal agencies in developing the 2023 Gradual Transformation Additional Achievable Fuel Substitution Scenario (2023 GT AAFS Scenario), 2023-2040 including, but not limited to, the California Public Utilities Commission (CPUC), the California State Air Resources Board (CARB), and the California Independent System Operator (CAISO).

WHEREAS, the CEC held public workshops on August 18, 2023, November 15, 2023, and Demand Analysis Working Group Meetings were held on October 26, 2023, and March 20, 2024, to discuss the AAFS Scenarios and alternative scenario characterizations; and

WHEREAS, on April 24, 2024, staff docketed the Notice of Availability for the 2023 GT AAFS Scenario in Docket No. 23-IEPR-03 identifying the documents that make up the Scenario, including forecasts for electricity demand impacts and gas demand impacts for each of the major planning areas and for the state as a whole; and

THEREFORE BE IT RESOLVED, the CEC hereby adopts the 2023 GT AAFS Scenario along with any changes identified at its May 08, 2024 Business Meeting, and directs CEC staff to make the scenario available to the public.

It is so Ordered.

CERTIFICATION

The undersigned Secretariat to the CEC does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the CEC held on May 08, 2024.

AYE:

NAY:

ABSENT:

ABSTAIN:

Dated:

Kristine Banaag
Secretariat

CALIFORNIA ENERGY COMMISSION715 P Street
Sacramento, California 95814energy.ca.gov

CEC-70 (Revised 7/22)

*IN THE MATTER OF:**2023 Integrated Energy Policy Report
(2023 IEPR)*

DOCKET NO. 23-IEPR-03

NOTICE OF AVAILABILITY

RE: New Additional Achievable Fuel
Substitution Scenario

Notice of Availability 2023 Gradual Transformation Additional Achievable Fuel Substitution Scenario, 2023 – 2040

The 2023 Gradual Transformation (GT) Additional Achievable Fuel Substitution Scenario (AAFS), 2023 – 2040, is available for public review and will be considered for adoption at the California Energy Commission (CEC) business meeting on May 8, 2024. In the *2023 IEPR*, staff proposed six AAFS scenarios for the 15-year electricity demand forecast, reflecting variations on clean energy policy and implementation. While the scenarios were intended for use in electricity system planning, the *2023 IEPR* recommended against using them for gas system planning. It stated that:

There is considerable uncertainty surrounding the pace at which building electrification, and the use of the planning forecast or local reliability scenarios could introduce risks to gas system reliability. However, the scenarios that exclude [the California Air Resources Board's (CARB)] concept for a zero-emission appliance standard are overly conservative, assuming little building electrification, which is not aligned with the state's goals and the proposed regulations and appliance standards currently under development. As more information becomes available throughout 2024, staff will collaborate with stakeholders to develop a new scenario that strikes the right balance.

Through this notice, staff is proposing a new scenario, the 2023 GT AAFS as envisioned in the *2023 IEPR*.

Background

The CEC developed the 2023 GT AAFS Scenario in response to the concerns raised with use of the AAFS scenarios developed for the *2023 IEPR* energy demand forecast for gas system planning. The largest difference between this scenario and the previously adopted AAFS scenarios is the inclusion of CARB's concept for a statewide zero-emission appliance standard. The six previously adopted scenarios include:

- Scenario 1 and Scenario 2: These are considered overly conservative as they assume very little building electrification, which is not aligned with the state’s goals and the proposed regulations and appliance standards currently under development. These scenarios excluded local and statewide zero-emission appliance standards, including CARB’s zero-emission appliance standard concept identified in the 2022 State Strategy for the State Implementation Plan.
- Scenarios 3 through 6: These include local and statewide zero-emission appliance standards, particularly CARB’s concept for a zero-emission appliance standard. CARB began public engagement in 2023 on a potential zero-emission appliance standard that would go into effect in 2030 if passed. CEC staff projected that this type of standard would result in substantial reductions in gas demand. Because this standard is not yet final, and because many uncertainties exist around the pace of building electrification, CEC staff advised against using these scenarios for gas system planning as it could risk reliability and safety issues if building electrification progresses more gradually than projected.

CEC staff developed the 2023 GT AAFS scenario to provide an alternative path with a statewide adoption rate of zero-emission space and water heating appliances that is between that assumed in AAFS Scenarios 2 and 3.

At a March 20, 2024, Demand Analysis Working Group Meeting, CEC staff presented preliminary results for an alternative scenario. After receiving and considering stakeholder feedback, the CEC revised the assumptions and named the scenario the 2023 GT AAFS Scenario. The new scenario assumes a more gradual statewide replacement of gas space and water heaters with zero-emission alternatives than the previously adopted AAFS Scenario 3. Instead of assuming that statewide replace-on-burnout (ROB) adoption reaches 100 percent in 2030, as assumed in AAFS Scenarios 3 through 6, the GT AAFS scenario assumes ROB adoption increases 5 percent per year beginning in 2026, increasing to 7.5 percent per year after 2030, thus reaching a 100 percent ROB adoption rate in 2040. For the 2023 GT AAFS Scenario, staff also updated the characterization of local Air Quality Management Districts’ Zero-Emission Appliance Standards and includes gas and electricity impacts from programmatic AAFS scenario 3 and programmatic Additional Achievable Energy Efficiency scenario 3, which were part of the Planning Scenario for the 2023 IEPR. Programmatic contributions capture reasonably expected impacts from programs developed in support of several goals and standards. The 2023 GT AAFS Scenario impacts dominate these programmatic contributions.

The following documents constitute the 2023 GT AAFS Scenario and will be considered for adoption on May 8, 2024.

Annual AAEE-AAFS

- TN Number: 255741 Title: Gradual Transformation AAFS Scenario Annual Impacts

Hourly AAEE-AAFS

- TN Number: 255737 Title: [Gradual Transformation AAFS Scenario Hourly Impacts - NCNC Planning Area](#)
- TN Number: 255738 Title: [Gradual Transformation AAFS Scenario Hourly Impacts - LADWP Planning Area](#)
- TN Number: 255739 Title: [Gradual Transformation AAFS Scenario Hourly Impacts - IID Planning Area](#)
- TN Number: 255740 Title: [Gradual Transformation AAFS Scenario Hourly Impacts - BUGL Planning Area](#)
- TN Number: 255742 Title: [Gradual Transformation AAFS Scenario Hourly Impacts - SMUD Planning Area](#)
- TN Number: 255743 Title: [Gradual Transformation AAFS Scenario Hourly Impacts - SDGE Planning Area](#)
- TN Number: 255744 Title: [Gradual Transformation AAFS Scenario Hourly Impacts - SCE Planning Area](#)
- TN Number: 255745 Title: [Gradual Transformation AAFS Scenario Hourly Impacts - PGE Planning Area](#)

These documents are available on the CEC's [2023 IEPR webpage](#) at <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report>, and in the CEC Docket No. [23-IEPR-03](#) at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-IEPR-03>.

Public Comments

Oral comments will be accepted at the business meeting. Comments may be limited to two minutes or less per speaker and one person per organization. To comment via Zoom, use the "raise hand" feature so the administrator can announce your name and unmute you. To comment via telephone, press *9 to "raise your hand" and *6 to mute/unmute. CEC will also accept comments from in-person attendees. Please see the agenda that will be posted on the Business Meeting event page at <https://www.energy.ca.gov/event/meeting/2024-02/energy-commission-business-meeting> for more information.

Written comments may be submitted to the Docket Unit by 10:00 a.m. on or before May 03, 2024.

The CEC encourages use of its electronic commenting system for written comments. Visit the [e-commenting page](#) at (<https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=23-IEPR-03>) which links to the comment page for this docket. Enter your contact information and a subject title that describes your comment. Comments may be included in the "Comment Text" box or attached as a downloadable, searchable document in Microsoft® Word or Adobe® Acrobat®. The maximum file size allowed is 10 MB.

Written and oral comments, attachments, and associated contact information (including address, phone number, and email address) will become part of the public record of this proceeding with

access available via any internet search engine. Written comments may also be submitted by email. Include docket number **23-IEPR-03** and **2023 GT AAFS Scenario** in the subject line and email to docket@energy.ca.gov.

Alternatively, a paper copy may be mailed to:

California Energy Commission
Docket Unit, MS-4
Docket No. 23-IEPR-03
715 P Street
Sacramento, California 95814

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