

Update on the Distributed Energy Resources (DER) Action Plan 2.0

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California Public
Utilities Commission

Agenda

- Background and Purpose of Draft DER Action Plan 2.0
- Overview of Action Plan Vision by Track
- Selected Status on Key Proceeding

DER ACTION PLAN 2.0- BACKGROUND

Distributed Energy Resources are electric distribution-connected energy resources

- ❖ Energy efficiency
- ❖ Demand response
- ❖ Dynamic and time-variant rates
(e.g., Time of Use, Critical Peak Pricing, and Real-Time)
- ❖ Customer generation (e.g., solar photovoltaic (PV) systems)
- ❖ Energy storage
- ❖ Electric vehicles (EV)

DER are accessible to customers through

- ❖ Direct incentive programs
- ❖ Tariffs
- ❖ Procurement processes managed by the electric IOUs
- ❖ Third-party implementers
- ❖ Community choice aggregators (CCAs).

DER ACTION PLAN 2.0- GOALS & PURPOSE

What is the DER Action Plan?

- A roadmap for CPUC decision-makers, staff, and stakeholders to facilitate forward-thinking DER policy.

What does the DER Action Plan do?

- Aligns the CPUC's vision with possible CPUC, utility and stakeholder actions to ensure coordinated policy implementation related to grid planning, affordability, load flexibility, market integration, and customer programs.
- Coordinate with Environmental & Social Justice Action Plan

What is the goal of the DER Action Plan?

- Maximize the value of DERs on the electric IOUs systems to support affordable and equitable rates but does **NOT** determine outcomes of individual proceedings.

STAKEHOLDER ENGAGEMENT

Collaboration

- Subject matter experts (SMEs)
- DER Action Plan 2.0 Committee
 - Representatives of Commissioner Houck's Office
 - ALJ Division Management
 - Energy Division Management, and
 - Energy Division subject matter experts

– a one year + process.

Vetting

A draft plan was presented in August 2021 to a stakeholder workshop with 200+ in attendance.

- Tribal Consultation- September
- 35 written comments
- CEC and CAISO briefings

Adoption

April 21 – Commission meeting

DER ACTION PLAN DRAFT 2.0 VISION ELEMENTS & ACTIONS

DER Action Plan 2.0 – 4 TRACKS

TRACK ONE

Load Flexibility & Rates

Purpose: Improve demand-side resource management through more effective, integrated demand response (DR) and retail rate structures.

How: Promote widespread, scalable, and flexible load strategies enabled by electrification and DER deployment.

- Real-time & dynamic pricing
- Load management technologies
- Universal access pricing platform
- Customized rate marketing and education of all customer segments

TRACK TWO

Grid Infrastructure

Purpose: Guide utility infrastructure planning and operations to maximize the value to ratepayers of DERs interconnected to the electric grid.

How: Modernize the grid and improve distribution planning

- Explore DSO models
- Planning responsive to community and tribal needs
- Improve interconnection performance
- Data communications for grid operator visibility
- Anticipate impact of electrification on grid infrastructure

TRACK THREE

Market Integration

Purpose: Support renewable integration, GHG reduction, and grid reliability through efficient integration of DERs into wholesale markets.

How: Enable market integrated DERs to produce multiple benefits.

- Resource Adequacy
- Reliability
- Efficient wholesale market grid services

TRACK FOUR

DER Customer Programs

Purpose: Improve coordination, planning and developing consistent metrics across DER customer programs to maximize their contributions to GHG reductions and other state energy goals.

How: enable all customers to effectively manage energy usage

- equitable participation and distribution of benefits
- alignment with evolving rate design and load flexibility
- alignment with distribution planning & IRP objectives

DER ACTION PLAN 2.0

Proceeding and Initiatives List

TRACK ONE

Load Flexibility & Rates

- Net Energy Metering
- PG&E Day Ahead Hourly Real Time Pricing (DAHRTP) Rate and Pilot Application to Evaluate Customer Understanding and Supporting Technology
- SDG&E, PG&E and SCE GRC Phase 2
- Rate Design Applications for evaluating and implementing default residential TOU rate designs.
- SDG&E Application for Approval of Electric Vehicle High Power (EV-HP) Charging Rate Application
- Load Flexibility Management OIR, recommended by CPUC staff.
- CEC's Load Management Standard

TRACK TWO

Grid Infrastructure

- High DER Future OIR
- Streamlining Interconnection of Distributed Energy Resources and Improvements to Rule 21
- Microgrids OIR
- PG&E, SCE and SDG&E General Rate Case Phase 1

TRACK THREE

Market Integration

- Resource Adequacy
- Successor Storage and/or Demand Response OIR(s), as recommended by CPUC staff
- Rule 21
- FERC Order 2222 and Other FERC Proceedings
- Potential CAISO Initiatives:
 - Energy Storage and Distributed Energy Resources,
 - Energy Storage Enhancements,
 - Hybrid Resources,
 - Transmission Planning Process,
 - Storage as a Transmission Asset,
 - Dispatch Enhancements (decremental market power and bid floor).

TRACK FOUR

DER Customer Programs

- Self-Generation Incentive Program
- Energy Efficiency
- Building Decarbonization
- Integrated Distributed Energy Resources
- Transportation Electrification
- Demand Response
- Net Energy Metering
- Energy Savings Assistance Program

DER ACTION PLAN 2.0

Scope and Structure

TRACK ONE

Load Flexibility & Rates

8 Vision Elements

14 Action Elements



TRACK TWO

Grid Infrastructure

5 Vision Elements

21 Action Elements



TRACK THREE

Market Integration

4 Vision Elements

8 Action Elements

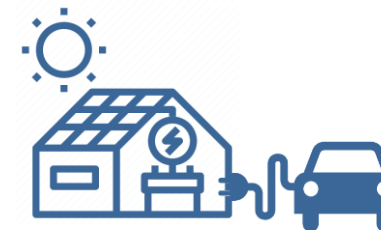


TRACK FOUR

DER Customer Programs

6 Vision Elements

17 Action Elements



**DER ACTION PLAN SELECTED IMPLEMENTATION
UPDATES:
FLEXIBLE DEMAND RULEMAKING
HIGH DER FUTURE GRID RULEMAKING
MICROGRIDS RULEMAKING
VEHICLE TO GRID (V2G) PILOTS**

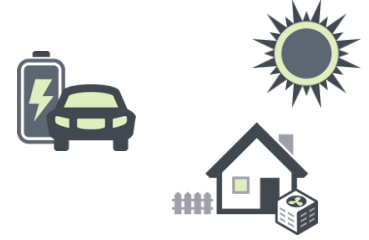
Demand Flexibility Rulemaking (R.22-07-005)

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- Real-time & dynamic pricing
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- Track A will establish an income-graduated fixed charge for residential rates for all investor-owned electric utilities in accordance with Assembly Bill 205.
- Track B is focused on developing demand flexibility rates & supporting systems & process to achieve widespread adoption of demand flexibility solutions and supporting the implementation of the California Energy Commission's Load Management Standards.
- WG draft report under review – final to be submitted to the Commission in October

Scoping Ruling Defines Three Tracks in High DER Future Rulemaking (R-21-06-017)



1 Distribution Planning Process and Data Improvements

- Phase 1: Near-Term Actions
- Phase 2: Distribution Planning Process Improvements
- Topics:
 - IOU Distribution Planning Processes
 - Electrification Impacts and Potential Mitigation
 - Data Portals
 - Community Engagement Needs Assessment for Distribution Planning

2 Distribution System Operator (DSO) Roles and Responsibilities

- Long-term grid vision(s) and associated policy issues
- Investigation of grid operations models
- Future Grid Study development and public outreach
- Future actions identified that could lead to a successor proceeding

3 Smart Inverter Operationalization and Grid Modernization Planning

- Phase 1: Smart Inverter Operationalization
- Phase 2: Grid Modernization Planning and Cost Recovery
- Topics:
 - Business Use Cases for Smart Inverters
 - DER Dispatchability
 - Smart Grid Investment Planning

Microgrids Rulemaking (R.19-09-009)

The Microgrids Rulemaking has advanced the goals of the DER Action Plan by implementing and overseeing the following work:

- **Microgrid Data Portals:** The Track 1 Decision in R.19-09-009 required PG&E, SCE, and SDG&E to stand up data portals for Local and Tribal Governments to show utility infrastructure data and planning information. The data portals are intended to help make better siting decisions for DERs and grid resiliency measures as well as to build capacity for government entities to engage with the utilities on collaborative efforts to increase electrical resiliency.
- **Lawrence Berkeley National Lab (LBNL)/DOE Technical Assistance Grant:** Through a technical assistance grant given by the DOE, LBNL has developed a data schema to take disparate information presented in Local and Tribal Governments' hazard mitigation plans and create a schema by which this data can be entered into geospatial formats to facilitate collaboration with the utilities on electrical resilience projects and goals.
- **SCE and Sandia National Labs Partnership:** CPUC staff have facilitated a partnership between SCE and Sandia National Labs to pilot the use of the Resilience Node Cluster Analysis Tool (ReNCAT) across a utility service area to create a geospatial map of social burden that can be used to evaluate mitigation measure investment options from an equity perspective.
- **Microgrid Incentive Program (MIP):** The MIP allocates \$200 Million of ratepayer funds to facilitate clean front of the meter microgrid projects in underserved communities. Utilities are currently drafting program rules that will govern award of funding and other program parameters.

Vehicle-Grid Integration Policy and Pilots

- **Vehicle-Grid Integration (VGI)** is “any method of altering the time, charging level, or location at which grid-connected [EVs] charge or discharge, in a manner that optimizes...interaction with the electrical grid and provides net benefits to ratepayers.”
- **In November 2022, the CPUC adopted a high-level VGI strategy** to highlight the CPUC's strategic focus areas for VGI and describe the cross-divisional/interagency nature of VGI. Strategy has three key focus areas:
 - Rates and demand flexibility programs;
 - Technology enablement; and
 - TE grid planning.
- We will begin hosting **annual VGI Strategic Stakeholder Forums**, which will launch in Fall 2023, to discuss these focus areas and determine any needed policy/programmatic changes.

VGI Pilots

- The CPUC has overseen several pilots to explore VGI applications dating back to 2015, including DR pilots using EVs to shift or curtail load, pilots to explore managed charging, and pilots that have examined use cases and technological feasibility of V2G.
- The current VGI-focused pilots the IOUs are implementing are:
 - PG&E's V2X Pilots—(1) V2G Residential Pilot, (2) V2G Commercial Pilot, (3) Vehicle-to-Microgrid PSPS Pilot; and
 - SDG&E's V2G School Bus Pilot.
 - We are currently reviewing additional VGI pilot proposals from SCE.
- TE team is collaborating with Rates team with the objective to leverage the CalFUSE rate design approach in the VGI pilots

Q&A/Discussion



THANK YOU!

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