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# Distributed Energy Resources (DER) Action Plan and the High DER Proceeding: Agency Coordination Planning

Energy Division

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California Public  
Utilities Commission

Presented at CEC Workshop for Order Instituting Informational Proceeding on  
Distributed Energy Resources in California's Energy Future (Docket No. 22-OII-01)

# Presentation Overview

- 1) Distributed Energy Resources (DER) Action Plan 2.0
  - Adopted by CPUC in April 2022
  - Available [here](#)
  
- 2) Order Instituting Rulemaking (OIR) to Modernize the Electric Grid for a High Distributed Energy Resources Future
  - Overview of the “High DER” proceeding (R.21-06-017)
  - See proceeding website [here](#)
  
- 3) Agency Coordination

# 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 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 Grid Planning Proceeding (R.21-06-017)**
- Streamlining Interconnection of Distributed Energy Resources and Improvements to Rule 21 (R.17-07-007)
- Microgrids & Resiliency (R.19-09-009)
- PG&E, SCE, and SDG&E General Rate Cases, 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

# We Anticipate a High-Penetration DER Future

“This OIR anticipates a high-penetration DER future and seeks to determine how to optimize the integration of millions of DERs within the distribution grid while ensuring affordable rates.”

– High DER OIR at p. 9 (July 2, 2021)

“This OIR neither seeks to set policy on the overall number of DERs nor does it seek to increase or decrease the desired level of DERs. This OIR focuses on preparing the grid to accommodate what is expected to be a high DER future and capture as much value as possible from DERs as well as mitigate any unintended negative impacts.”

– High DER OIR at p. 10 (July 2, 2021)



# Overview of High DER Proceeding (R.21-06-017)

The proceeding will:

- Address unresolved and ongoing issues from the Distribution Resources Plans proceeding (R.14-08-013) and Integrated Distributed Energy Resources (IDER) proceeding (R.14-10-003)
  - Note: Unresolved issues associated with the IDER Avoided Cost Calculator are expected to be scoped into a separate proceeding.

In addition, the proceeding intends to:

- Enable swift evolution of grid capabilities and operations to integrate solar, storage, electric vehicle/electric vehicle supply equipment and other DERs to meet the State's 100 percent clean energy goals;
- Improve distribution planning, including charging infrastructure forecasting to support cost effective and widespread TE; and
- Optimize grid infrastructure investments by facilitating community input about planned developments, DER siting plans, and resiliency needs.

# Organized Under Three Tracks

## 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
- Data Sharing and Transparency (Data Portals/Integration Capacity Analysis Data)
- Community engagement

## 2

### Distribution System Operator (DSO) Roles and Responsibilities

- Long-term grid vision
- Investigation of DSO models
- Consideration of IOU performance/ incentive mechanisms

## 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

# Track 1: Distribution Planning Process and Data Improvements

- Evaluation of utility distribution planning processes with respect to planning for increased electrification, improved data sharing (including data portals), electric vehicle adoption, adoption of real-time rates and related flexible load management technologies, and equity.
- Improving local engagement in utility distribution planning to ensure community plans and local concerns are adequately addressed.
- Two near-term (Phase 1) deliverables (among others):
  1. Staff Proposal on Community Engagement Needs Assessment Scope and Objectives and Near-Term Data Portal Improvements
  2. Electrification Impacts Staff Proposal

# Track 2: Distribution System Operator Roles and Responsibilities

- Focuses on high-level policy issues involving distribution system operator roles and responsibilities as well as utility and aggregator business models.
- Addresses long-term policy issues and could result in findings that implicate potential action beyond the timeframe of this proceeding.
- A robust stakeholder process leading to the completion of a technical report (**Future Grid Study**) is the primary staff-supported process scoped for this track.

# Track 3: Smart Inverter Operationalization and Grid Modernization Planning

- Operationalize smart inverters to leverage advanced functionality; develop a prioritized short-list of use cases to operationalize.
- Evaluate and potentially update the Grid Modernization Plan framework adopted by Decision D.18-03-023 in 2018.
- Align quadrennial utility General Rate Case cost recovery with projects and costs identified in utility annual distribution planning process filings
- Two near-term (Phase 1) deliverables:
  1. Smart Inverter Operationalization (SIO) Working Group Report
  2. SIO Staff Proposal

# CPUC-CEC Coordination Planning

- Coordinate DER proceeding efforts and deliverable timelines, especially on outreach
  - See detailed CPUC work plan in additional slides below
- Avoid duplicating efforts to minimize stakeholder burnout and maximize use of available resources
- Stakeholder education (e.g., climate change, DER types and value, resiliency planning, grid planning and operations)
- Outreach collaboration is anticipated to center around CPUC High DER Proceeding tracks 1 and 2:
  1. Distribution planning process improvement
  2. Future Grid Study, including review of distribution system operator roles and responsibilities

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# Additional Slides

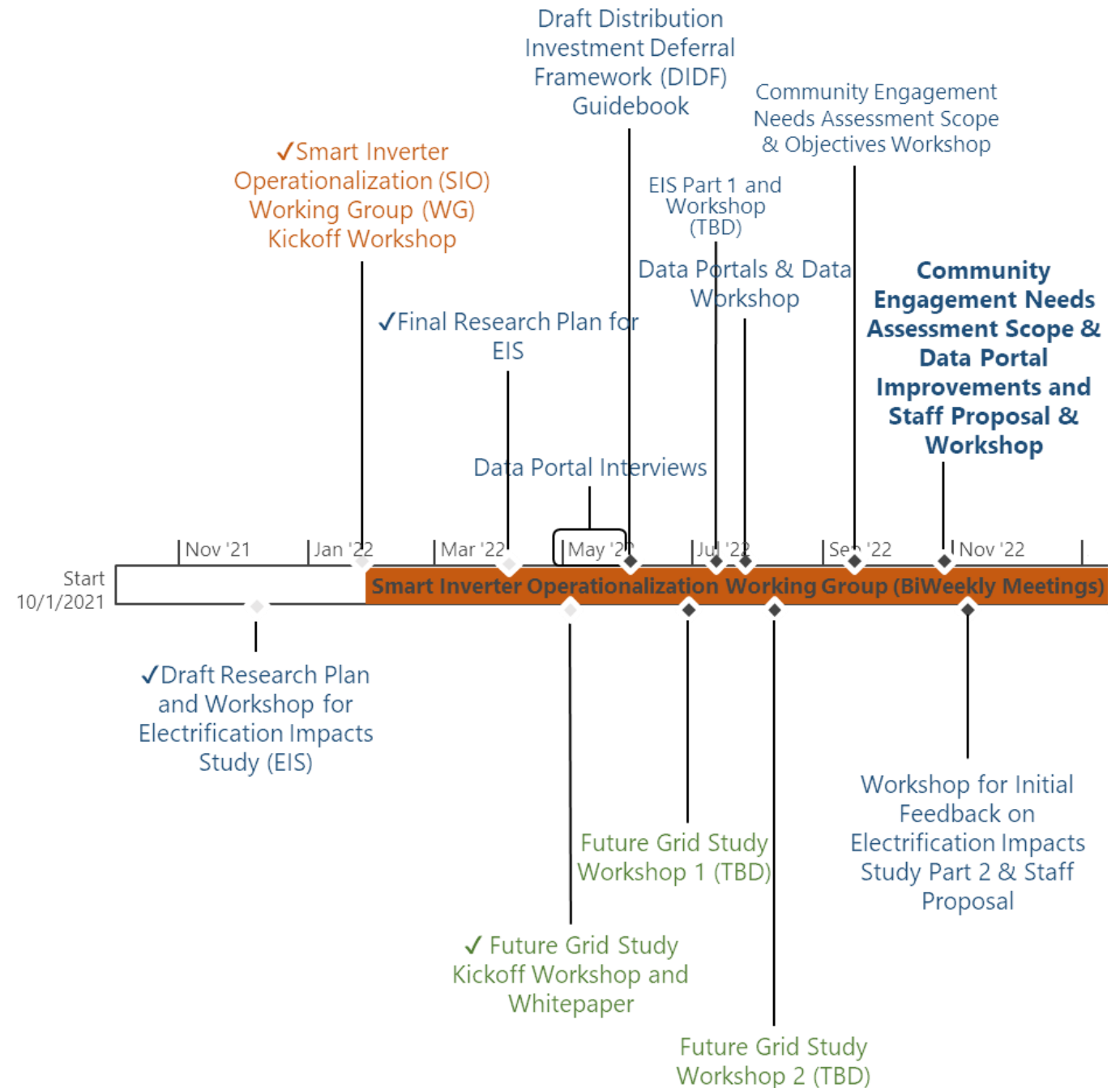
High DER Proceeding Work Plan



# Work Plan Timeline (2021-2022)

## Legend

- Bold are staff proposals and Decisions
- Proceeding Track 1
  - Distribution Investment Deferral Framework (DIDF)
  - Distribution Planning Process (DPP)
  - Electrification Impact Study (EIS)
- Proceeding Track 2
- Proceeding Track 3
  - Smart Inverter Operationalization (SIO)
  - Working Group (WG)
  - General Rate Case (GRC)



# Listing of Reports, Staff Proposals, and Workshops

2021-2022

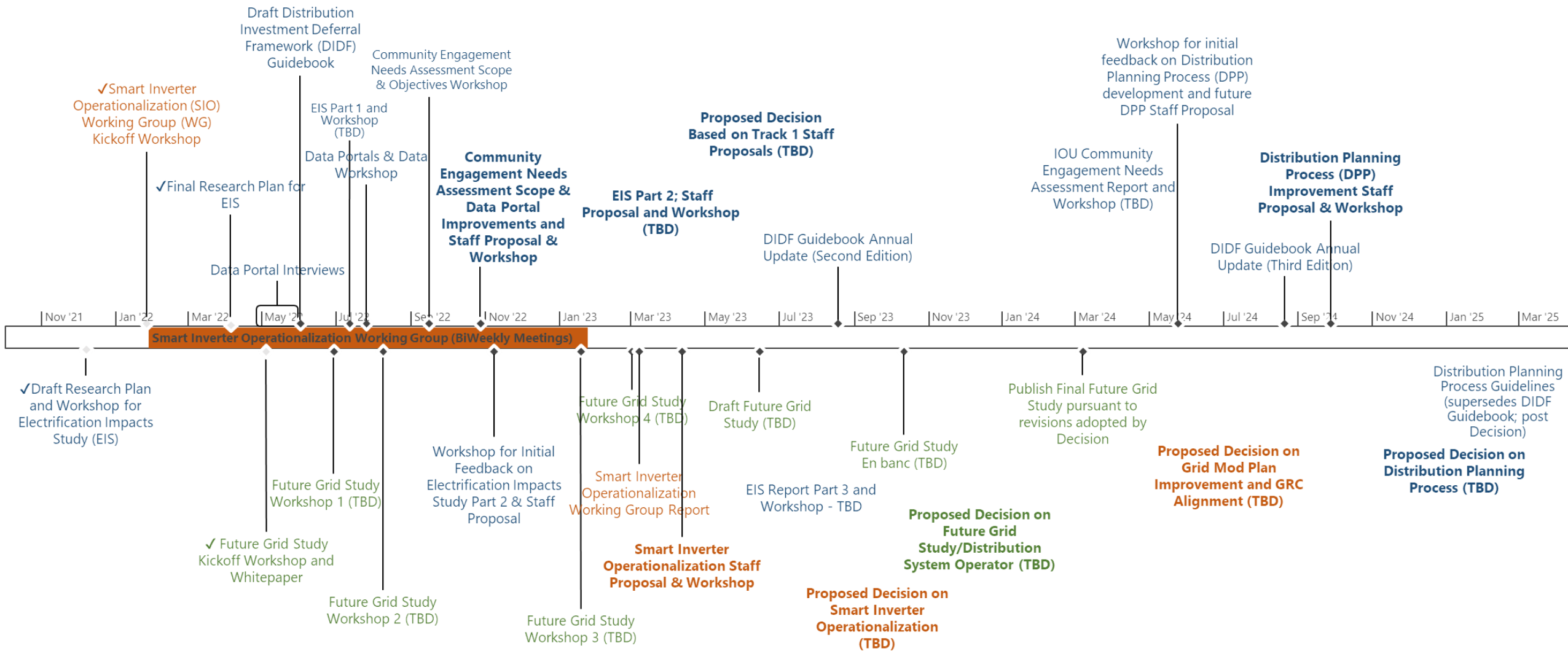
	<b>Item</b>	<b>Date</b>	<b>Track</b>	<b>Consultant</b>
✓	Draft Research Plan and Workshop for Electrification Impacts Study (EIS)	12/7/2021	1	Kevala
✓	Smart Inverter Operationalization (SIO) Working Group (WG) Kickoff Workshop	1/25/2022	3	Verdant, Xanthus
✓	Final Research Plan for EIS	4/4/2022	1	Kevala
✓	Future Grid Study Kickoff Workshop and Whitepaper	5/3/2022	2	Gridworks
	Draft Distribution Investment Deferral Framework (DIDF) Guidebook	May-22	1	Verdant
	Data Portal Stakeholder Interviews	May-22	1	Verdant
	EIS Part 1	May-22	1	Kevala
	Future Grid Study Workshop 1	6/8/2022	2	Gridworks
	EIS Part 1 Workshop	June-22	1	Gridworks, Kevala
	Data Portals Workshop	July-22	1	Gridworks, Verdant
	Future Grid Study Workshop 2	8/17/2022	2	Gridworks

# Listing of Reports, Staff Proposals, and Workshops

2022-2023

Item	Date	Track	Consultant
Community Engagement Needs Assessment Scope & Obj. Workshop	Sept-22	1	Verdant
Evaluate Grid Needs Assessment/Distribution Deferral Opportunity Report (GNA/DDOR) Filings (Big Data Analytics)	Sept-22	1	Kevala, Verdant
Staff Proposal on Community Engagement Needs Assessment Scope and Near-Term Data Portal Improvements (also Workshop)	Oct-22	1	Verdant
Workshop for Electrification Impacts Staff Proposal Development (EIS Part 2)	Nov-22	1	Gridworks, Verdant
Final DIDF Guidebook (1st annual version)	Nov-22	1	Verdant
Future Grid Study Workshop 3	Jan-23	2	Gridworks, Verdant, Xanthus
EIS Part 2 (Electrification Impacts Staff Proposal)	TBD	1	Kevala, Verdant
Future Grid Study Workshop 4	March-23	2	Gridworks, Kevala, Xanthus
Smart Inverter Operationalization (SIO) Working Group (WG) Report	March-23	3	Verdant, Xanthus
EIS Part 2 (Electrification Impacts Staff Proposal) Workshop	TBD	1	Gridworks, Kevala, Verdant

# Work Plan Timeline (2021-2025)



# Listing of Reports, Staff Proposals, and Workshops

## 2023

Item	Date	Track	Consultant
<b>Proposed Decision (Near-Term Actions)</b>	TBD	1	Kevala, Verdant
SIO Staff Proposal	April-23	3	Verdant, Xanthus
Draft Future Grid Study	May-23	2	Gridworks
SIO Staff Proposal Workshop	May-23	3	Verdant, Xanthus
EIS Part 3 and Workshop	TBD	1	Kevala, Verdant, Gridworks
DIDF Guidebook Annual Update (2nd annual)	Aug-23	1	Verdant
Future Grid Study En banc	Sept-23	2	Gridworks
<b>Proposed Decision (SIO)</b>	TBD	3	Verdant, Xanthus
Workshop for Grid Modernization Plan and General Rate Case (GRC) Alignment Staff Proposal Development	2023	3	Verdant, Xanthus
Evaluate GNA/DDOR Filings (Big Data Analytics)	2023	1	Kevala, Verdant
<b>Proposed Decision (Future Grid Study/Distribution System Operator)</b>	TBD	2	Gridworks

# Listing of Reports, Staff Proposals, and Workshops

2024

	<b>Item</b>	<b>Date</b>	<b>Track</b>	<b>Consultant</b>
	Grid Modernization Plan and General Rate Case (GRC) Alignment (Staff Proposal) and Workshop	2024	3	Verdant, Kevala
	Community Engagement Needs Assessment Report and Workshop	2024	1	Verdant
	Distribution Planning Process (DPP) Improvement Workshop	2024	1	Gridworks, Verdant
	Data Portals Improvement Report and Workshop	2024	1	Verdant
	<b>Proposed Decision (Grid Modernization Plan and GRC Alignment)</b>	TBD	3	Verdant, Kevala
*	Distribution Planning Process (DPP) Improvement Staff Proposal and Workshop	2024	1	Verdant
	DIDF Guidebook Annual Update (3rd annual)	Aug-24	1	Verdant
	DPP Improvement Staff Proposal Workshop	2024	1	Gridworks, Verdant
	Evaluate GNA/DDOR Filings (Big Data Analytics)	Sept-24	1	Kevala, Verdant
	<b>Proposed Decision (DPP)</b>	2024	1	Verdant
*	DPP Guidelines (supersedes DIDF Guidebook)	2025	1	Verdant