



# Distributed Energy Resources Action Plan



California Public Utilities Commission  
October 18, 2018 Workshop



## OVERVIEW OF THE ACTION PLAN AND VISION ELEMENTS



2



## Introduction

- DER Action Plan initiated to develop a shared vision of DER goals over next several years
- DER Action Plan will serve to coordinate activities across multiple proceedings
- Energy Division led the effort and received input from Commissioners, ALJs, and numerous Energy Division staff
- Plan consists of vision, continuing, and action elements but only vision elements presented today



## Scope

Recognizes critically linked IRP process, but doesn't embody it

- As IRP takes shape, clarity on specific linkages will be added (in updates)

Deploy DERs in manner sensitive to location and time

- Maximize the grid value of DERs

Many details deferred to internal Steering Committee process

- Maintain flexibility in implementation

4





## Structure

1. Rates and Tariffs
2. Distribution Grid Infrastructure, Planning, Interconnection, and Procurement
3. Wholesale DER Market Integration and Interconnection



## Implementation

**Steering Committee**

- Anticipate more detailed internal work plans
- Energy Division, in advisory role, facilitates coordination opportunities
- Consultation with ALJs and Assigned Commissioners'
- May require prioritization calls
- No explicit stakeholder role anticipated

**Future Revisions**

- Robust stakeholder role anticipated
- Incorporate major developments (e.g., IRP, new Leg)

**Periodic Commission briefings**

- Implementation status, synergies realized, opportunities on the horizon





## Vision

### 1. Rates and Tariffs

- A. A continuum of rate options, from the simple to complex, is available for customers.
- B. Rates reflect time-varying marginal cost.
- C. Processes for adopting innovative rates and tariffs are flexible and timely.
- D. Rates and demand charges better reflect cost causation and capacity benefits of DERs.
- E. Rates remain affordable for non-DER customers.



## Vision

### 2. Distribution Grid Infrastructure, Planning, Interconnection, Procurement (1)

- A. DER meet distribution grid needs through a transparent, seamless planning and sourcing process, resulting in increased DER deployment and grid reliability with decreased cost.
- B. Investor-owned utilities (IOUs) are motivated to accelerate deployment of DER regardless of the impact on distribution capacity investment opportunities.
- C. DER sourcing mechanisms are restructured to ensure that they are technology-neutral and competitively procured, where appropriate. Utility or affiliate ownership of DERs is also considered where it may be necessary to achieve market transformation or other public policy goals.

8





## Vision

### 2. Distribution Grid Infrastructure, Planning, Interconnection, Procurement (2)

- D. Cost effectiveness and valuation frameworks accurately and impartially reflect the full grid services, renewables integration, and GHG value of DERs.
- E. Interconnection is facilitated by improving DER hosting capacity estimates to minimize the need for interconnection studies, and by making interconnection costs transparent, accessible and public.
- F. Sophisticated DER Growth Scenarios are regularly updated and inform proactive investments designed to strengthen DER hosting capacity and the efficiency of the distribution grid in identified growth areas and lower the cost to ratepayers of accommodating high penetrations of DERs.



9



## Vision

### 3. Wholesale DER Market Integration and Interconnection

- A. DERs participate robustly as grid resources through progressively greater visibility, dispatchability, and profitability in wholesale grid operations.
- B. DERs are appropriately enabled to earn multiple revenue streams by delivering multiple services to the wholesale market, distribution grid and end-users ("stacking value").
- C. Wholesale market rules and interconnection tariffs support behind-the-meter DERs.
- D. Electric vehicle charging systems, and mobility and driving behaviors, can be predicted and overseen in the grid operations.
- E. Non-discriminatory market rules and regulations for mobile electric transportation resources (addressing registration, interconnection, and physical connectivity) are established to support customer mobility.



10



## Sample Stakeholder Comments

General

- Generally very supportive
- More explicitly recognize IRP
- Include Diablo Canyon retirement proposal
- Inculcate strong interagency coordination
- Address utility stranded investment from departing load
- Clarify meaning of "By Year X"
- Few comments on EVs, DR, and EE

Vision

- Refine: Streamlined interconnection (V2E)
- Add: Regulatory certainty on rates and tariffs (grandfathering)
- Add: Clarify T&D interface
- Add: DERs to meet transmission needs (as well as distribution)
- Add: Streamline customer's tariff enrollment process
- Add: CAISO should develop cost allocation for non-wires alternatives
- Add: Coordinate with CAISO on DERP implementation

11



## Q & A

12





# CONTINUING AND ACTION ELEMENTS



13



## 1. Rates and Tariffs

Continuing Element	Action Element
1. TOU OIR a. TOU periods b. Compendium of TOU rated designs	1.2 By 2017, method for TOU periods
2. Residential Rates OIR (residential default TOU by 2019) a. ME&O for TOU b. TOU pilots	1.3/1.4 Implement TOU pilots 1.8 By 2019, meet res TOU statutes 1.6 By 2018, clear ME&O plans to boost time variant pricing (TVP) participation
3. GRC Phase 2/Rate Design Windows (RDWs) – Fixed charges, TOU periods/rates, non-res rated design, dynamic rates	1.1 By 2017, complete review of demand charge policy
4. Appropriate rate designs for absorption of renewables oversupply	
5. NEM successor	1.5 By 2018, analytical tools to assess DER value support NEM "3.0" review
6. New/re-scoped proceeding on non-residential rate reform (demand charges)	1.1 By 2017, complete review of demand charge policy
	1.7 By 2018, a forum to consider innovative rates + tariffs





## Sample Stakeholder Comments

Continuing Elements  
Address low-income and disadvantaged communities in NEM successor

Action Elements  
Accelerate rates forum timeline (1.7)  
Develop rates and tariffs designed for storage

15



## Q & A

16





# BREAK



17



## 2. Distribution Grid Infrastructure, Planning, Interconnection, Procurement

Continuing Element	Action Element
<p>1. Distributed Resource Plans (DRP) proceeding, including consideration of:</p> <ul style="list-style-type: none"> <li>a. DRP demonstrations including testing integrated capacity and locational net benefit methods.</li> <li>b. DER data needs.</li> <li>c. Distribution infrastructure deferral framework, including consideration of DRP results in GRC Phase I.</li> <li>d. Grid modernization definition and characterization.</li> <li>e. DER growth scenario forecast methodologies, including implementation risk assessments as inputs to IRP.</li> </ul>	<p>2.1. Periodic collection and review of demonstration activities, including enhancements, redirection, and augmentation where needed.</p> <p>2.4 By 2017, the Commission concludes consideration of an independent distribution planning review process to ensure that DERs are being adequately evaluated in the context of utility distribution planning.</p> <p>2.5 By 2017, the Commission will conclude consideration of a grid modernization framework that shall set basic functionalities and interoperability requirements for utility grid investments.</p>
<p>2. Integrated Distributed Energy Resources proceeding, including consideration of:</p> <ul style="list-style-type: none"> <li>a. Competitive Solicitations Framework.</li> <li>b. Integrated DER valuation and cost-effectiveness framework.</li> <li>c. Utility incentive mechanism pilot.</li> </ul>	<p>2.3 By 2017, consider how existing DER sourcing mechanisms (e.g., programs and tariffs) should reflect location value and/or be transitioned to a competitive sourcing mechanism already reflecting locational value.</p> <p>2.2 By 2016, begin Commission consideration of the use of a societal cost test in DER valuation.</p> <p>2.9 By 2020, consider the role of Distributed Energy Resource Management Systems to enhance grid management and maximize the value of DER deployment.</p>





## 2. Distribution Grid Infrastructure, Planning, Interconnection, Procurement

Continuing Element	Action Element
3. Rule 21 Interconnection, including evaluating the effectiveness of interconnection reforms and pilots to provide cost certainty and improve data collection.	2.6 By 2018, the Commission will consider the use of Integration Capacity Analysis (ICA) to streamline utility interconnection processes to accelerate DER deployment. 2.8 By 2020, fully operationalize advanced smart inverter functionalities to enhance integration of DERs into the grid.
4. Energy efficiency, including locational targeting to avoid or defer grid upgrades, and normalized metered energy consumption evaluation methods to increase visibility.	
General Continuing Element	2.7 By 2018, consider developing guidelines to clarify the circumstances in which utility or affiliate ownership of DERs is appropriate.




## Sample Stakeholder Comments

Continuing Elements

- Add: Grid support tariffs in IDER scope (2d)
- Add: DR "click-through" process implementation, and expand to other DERs

Action Elements

- Add: Centralized proceeding to develop DER planning data matrix
- Add: Successor Rule 21 proceeding for continuing reform
- Clarify: Intended outcome of Grid Modernization activities and accelerate (1d)
- Accelerate timelines for:
  - Use of ICA in Interconnection Process (2.6)
  - Advanced smart inverter functionality (2.8)
  - Deploy DER Management Systems (2.9)

20





# Q & A



21



## 3. Wholesale DER Market Integration and Interconnection

Continuing Element	Action Element
<p>1. Storage OIR and California Independent System Operator (CAISO) stakeholder processes consider role of market rules and regulatory policies for DER Multi-Use Case Applications.</p>	<p>3.1. By 2017 consider issues regarding use of DER to meet both transmission and distribution system needs (e.g., optimizing dispatch) and related FERC jurisdictional issues.</p> <p>3.2. By 2018 consider eligibility of NEM resources in wholesale markets.</p> <p>3.3. By 2018 assess regulatory options to streamline Commission jurisdictional interconnection rules (Rule 21) and FERC interconnection rules such as Wholesale Distribution Open Access Tariff for behind-the-meter DERs</p> <p>3.4. By 2018 complete research critical to vehicle-grid integration and incorporate results into transportation electrification policy.</p> <p>3.5. Develop policies that ensure that transportation electrification infrastructure and rates avoid unreasonable cross-subsidies.</p>





### 3. Wholesale DER Market Integration and Interconnection

Continuing Element	Action Element
2. Demand Response proceeding and CAISO stakeholder processes consider IOU transition of demand response programs into the wholesale market.	
3. Enhancement of demand response products and Proxy Demand Resource, including participation in ancillary services markets, viability of "reverse" demand response, and growth of third-party demand response aggregator participation in wholesale markets.	




### Sample Stakeholder Comments

Continuing Elements  
Add: Clarify T&D interface

Action Elements  
Add: consider role of DER portfolios, not just NEM resources in wholesale markets. (3.2)  
Add: Clarify BTM resources role (e.g., NEM and DERP policy)

24





Q & A

25



OPEN COMMENT

26

