

An Electric System Transition Strategy

Presented to
Engineers for a Sustainable Future

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Mobilizing Climate Action Together (MCAT)

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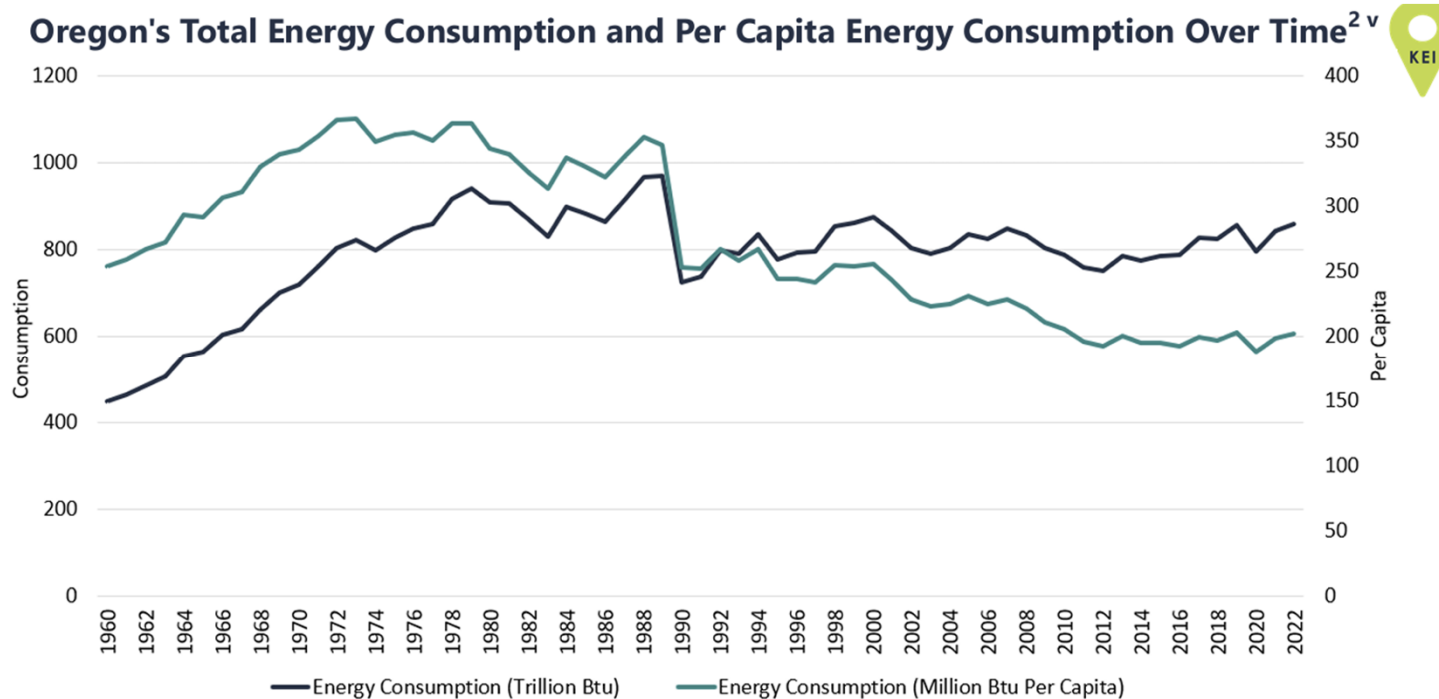
An Electric System Transition is Needed/Imminent

Affordability is the critical factor

- **The existing central-station utility paradigm is at a breaking point** because its size is driven by peak loads, which are minimally managed.
- Our near-term focus should **shift to making greater use of the existing electric grid infrastructure** that we already have in place.
- **Current utilizations is only about 40%**, which means that we currently only use the system at full capacity during the hottest days in the summer.

Energy Efficiency Has been a Key to Affordability

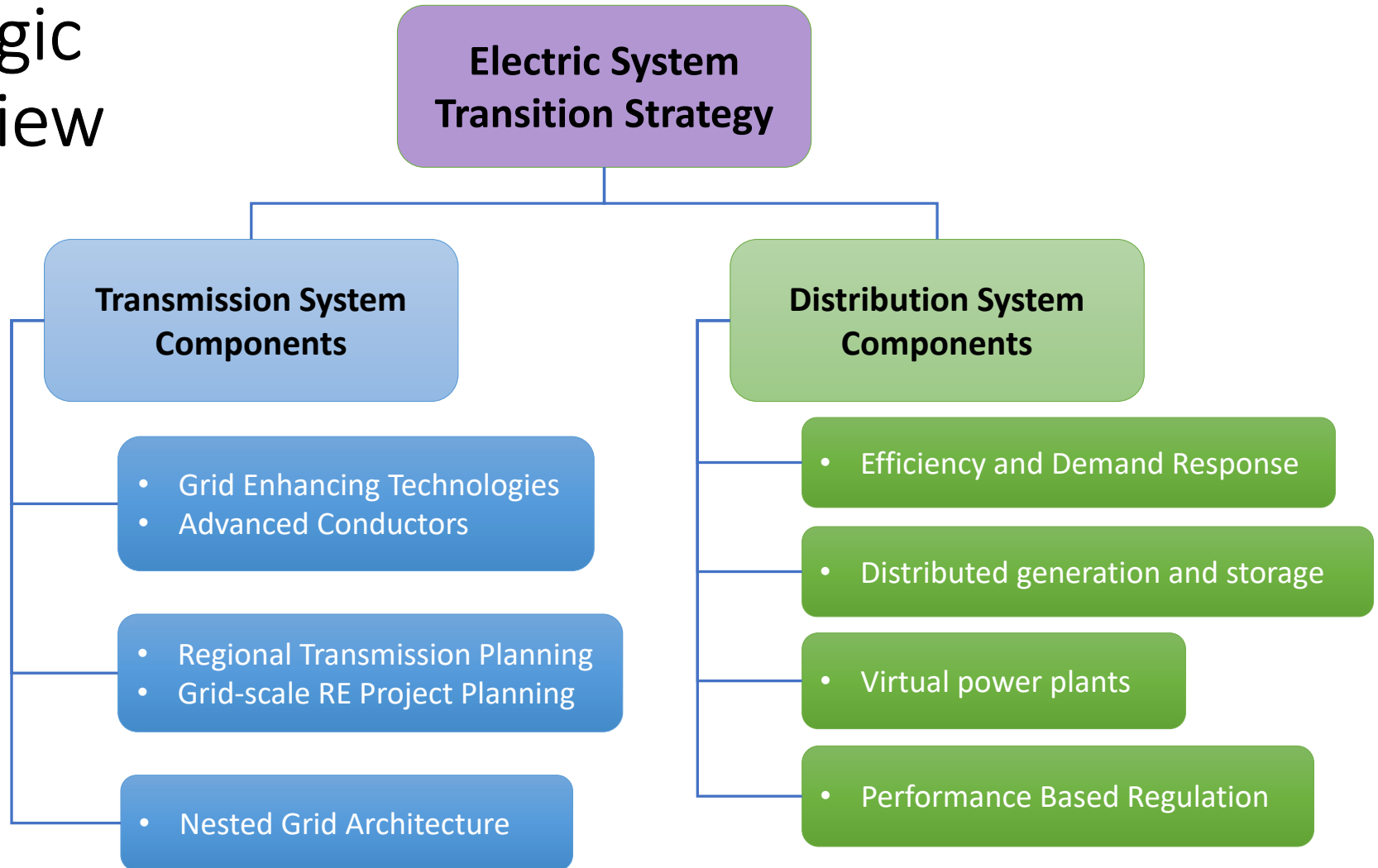
In the last 30 years, Oregon's population has steadily increased while overall energy consumption has slightly declined, driven by energy efficiency savings – from ODOE Biennial Report.



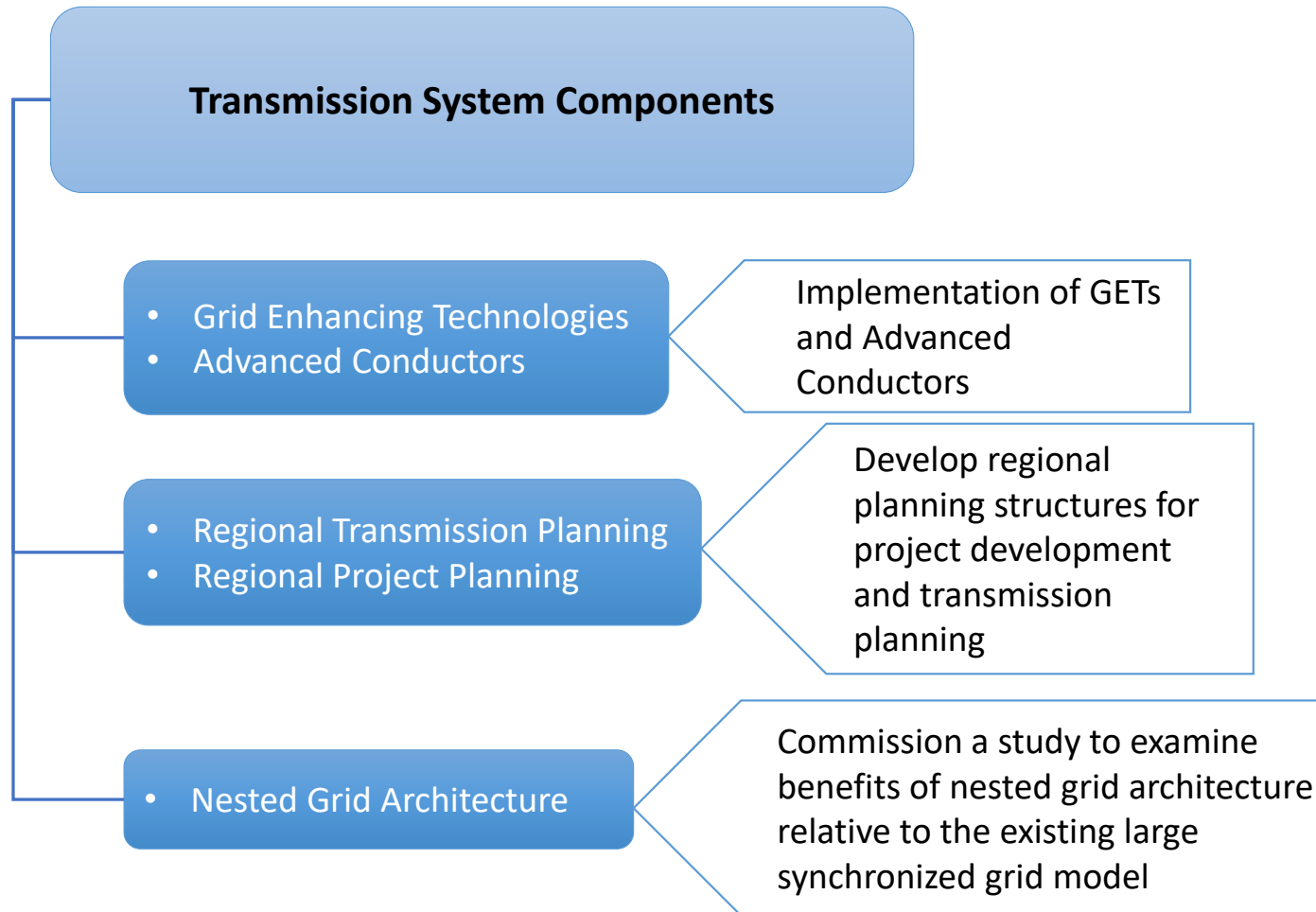
Improving System Utilization with Clean Energy

- Greater utilization of our existing transmission and distribution grid assets defers the need for expensive transmission expansion projects
- Technology is now available to flatten peak loads using **coordinated networks of distributed energy resources** that are managed collectively to balance energy supply and demand, delivering reliable grid services like a conventional power plant.
- Called virtual power plants (VPPs), they provide a coordinated way to **shift large amounts of power out of peak demand periods** and can be deployed during emergencies for local grid resilience.
- VPPs and other approaches that increase utilization of existing grid infrastructure, **lower costs for all customers** by avoiding new transmission buildouts and spreading fixed costs for the existing infrastructure over a larger number on kilowatt-hours.
- The Brattle Group estimates that **VPPs cost 40-60% less than other energy sources** and widely deploying VPPs across the country could save up to \$35 billion for ratepayers by 2030 ([Brattle](#)).

Strategic Overview



Transmission System Transition Strategy



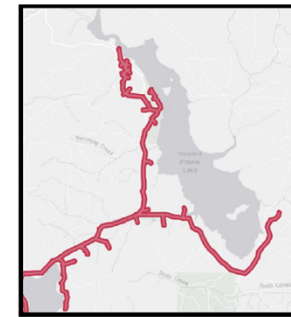
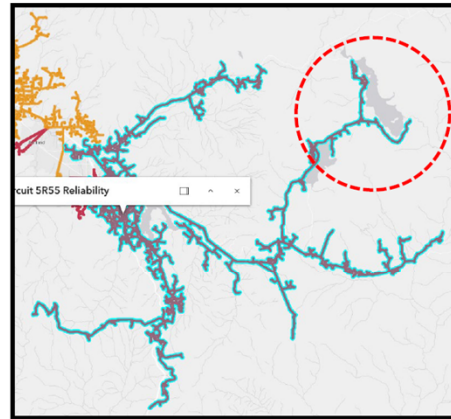
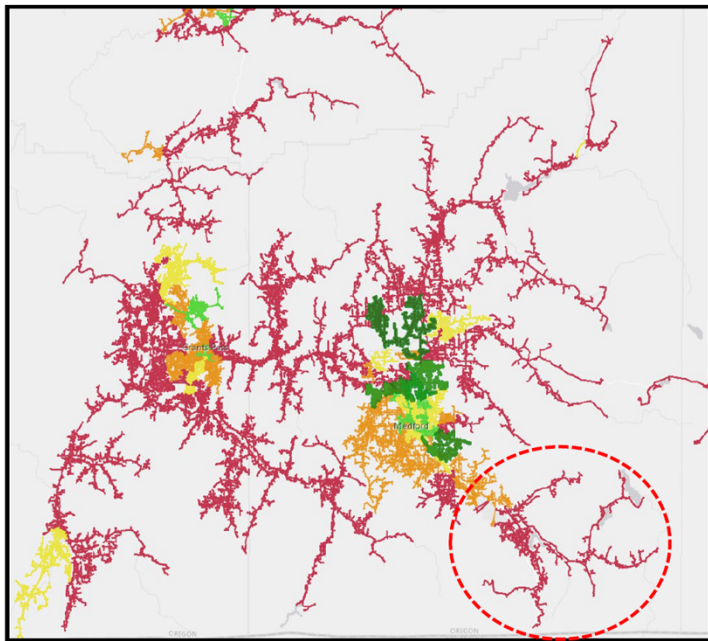
Transmission System Transition Strategy

Transmission System Components	Objective	Planned Actions	Collaborators	
	Grid Enhancing Technologies & Advanced Conductors	Implementation of GETs and Advanced Conductors	Build on HB 3336 Promote thru OPUC IRP/CEP	HB 2021 Energy Advocates
	Regional Transmission Planning	Develop a regional transmission planning organization	Promote thru IRP/CEP and other OPUC Proceedings Support new legislation	OCGC, Westec, others? Advocates in other states
	Grid-scale Project Planning	Develop a regional capacity planning organization	Examine how expected RE project development is factored into transmission planning. Is more	???
	Nested Grid Architecture	Commission a study to examine benefits of nested grid architecture relative to the existing large synchronized grid paradigm	Participate in Micro-grid Rulemaking Develop legislation for Study	???

Illustration of Nested Grid Architecture-1



Reliability & Resilience : View from Different Perspective



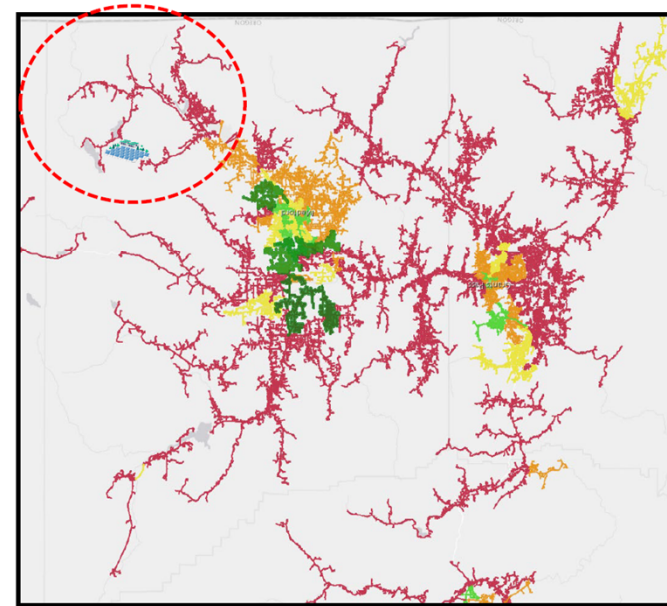
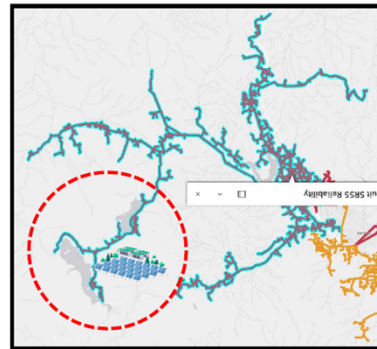
Source: Pacific Power Distribution System Planning Map
[DSP Display front runner](#)

Illustration of Nested Grid Architecture-2



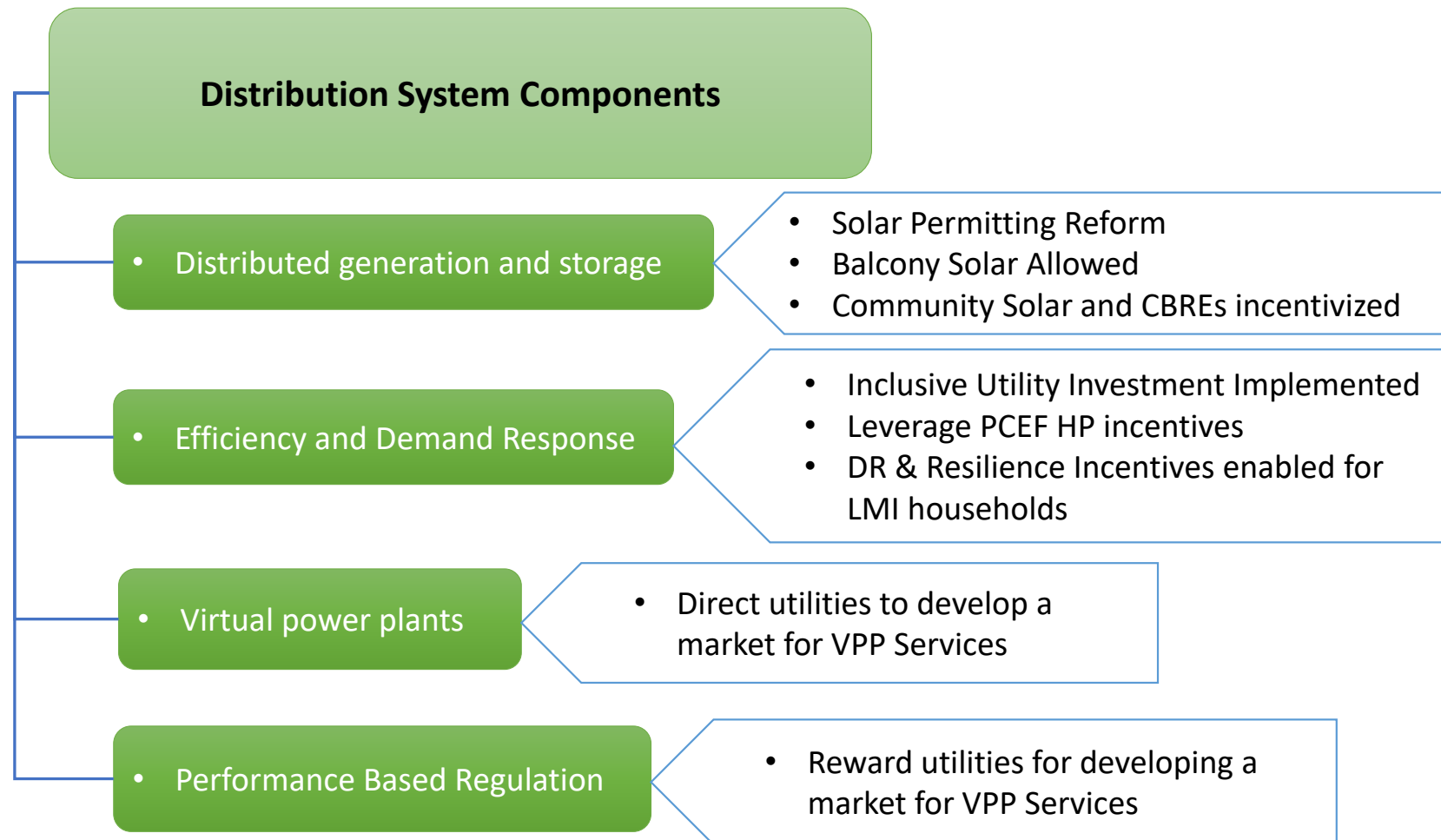
Reliability & Resilience : View from Different Perspective

Localized vs Upstream Benefits



Source: Pacific Power Distribution System Planning Map
[DSP Display front runner](#)

Distribution System Transition Strategy



Distribution System Transition Strategy

Distribution System Components	Objective	Planned Actions	Collaborators
Efficiency and Demand Response	Solar Permitting Reform	Promote instant permitting with City of Portland and expand to other cities	Third Act, OSSIA, Energy Advocates
	Balcony Solar Allowed	Identify technical fixes and get electrical workers and firefighters support	Mark Gummin, Brightsaver(?), BG Alliance
	Community Solar and CBREs incentivized	Push utilities on resilience and grid support benefits	Third Act, OSSIA, Energy Advocates
Distributed generation and storage	Inclusive Utility Investment	Research differences between IUI and on-bill financing Identify improvements to 2026 bill	CUB, Energy Advocates
	Leverage PCEF HP	Leverage PCEF?	Mult County?
	DR & Resilience Incentives enabled for LMI households	Identify mechanisms to implement incentives	
Virtual power plants	Direct utilities to develop a market for VPP Services	Identify improvements to 2026 bill	CUB, Energy Advocates
Performance Based Regulation	Reward utilities for developing a market for VPP Services	Participate in PBR and MRP rulemaking	CUB, Energy Advocates

Questions and Discussion

- Input to the strategy is welcome
- Contact me at pdelaquil@gmail.com

Back-up Slides

VPP Issues

Lack of Market Price Signals

- VPP programs in New York, Massachusetts, and California have **energy markets that set prices** allowing VPP aggregators to directly compete in these markets
- **Can we identify a basis for compensation rates** for participating aggregators based on the estimated value of each resource to the system and cost to participate
- **Past experience with programs such as Community Solar** have shown it is extremely difficult to reconcile program structures that are both cost-efficient and drive third-party participation

Remove Barriers to Distributed Resources Through Innovative Utility Financing

Inclusive Utility Investments, or Upgrade as you Save

- Facilitates greater energy efficiency and increase utilization of VPP's by helping households and small businesses access clean technologies without facing prohibitive upfront costs
- Proposed Pilot program will unlock savings and help households generate benefits to the overall electric system, including reduced energy demands, peak load reductions, grid supports, and system resilience.
- The Pilot would allow Investor-Owned Utilities to provide funds for energy efficiency and strategic electrification without additional burden to the General Fund or ratepayers.

Need to develop responses to OPUC concerns on the bill

Inclusive Utility Investment Guide

for Distributed Energy Resources

In partnership with 

MARCH 2025

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Solar Permitting Scorecard

Grading all 50 states on removing obstacles to rooftop solar and home batteries



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Balcony (Plug-In) Solar

A niche technology that opens up a large market for small-scale solar panels

- Some certification and code issues need resolution
- Passed with bipartisan support in Utah (2025) and Virginia (2026)
- Electricians and firefighters were mobilized against the bill in Oregon
- Need to work on getting these groups neutral as issues can be handled
- MCAT and Third Act were key proponents
- [Virginia to become second state that allows balcony... | Canary Media](#)