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PBR and DER in a changing regulatory world

Introduction to Compensation and Market Mechanisms Panel

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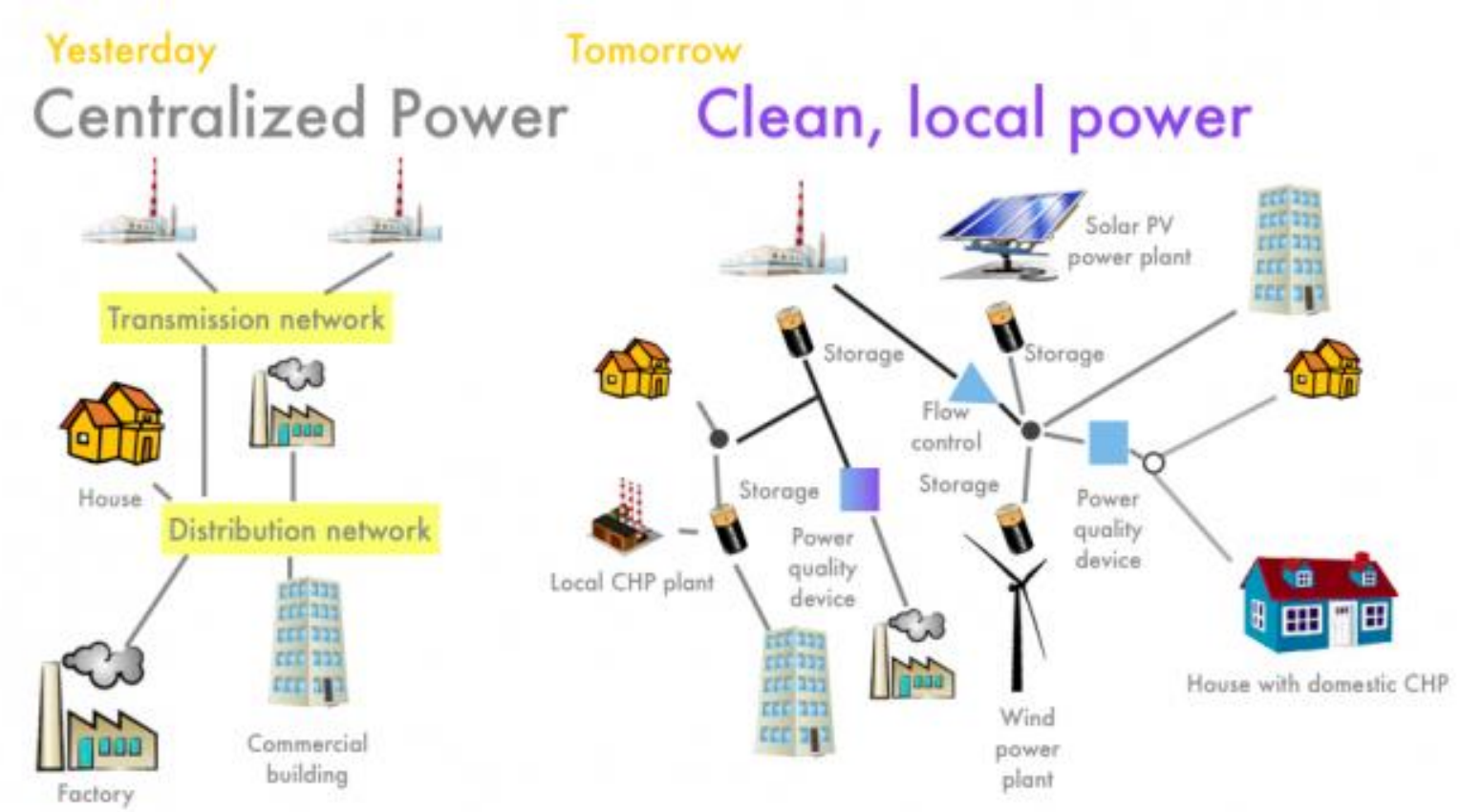
Power Sector Transformation



Source: Farrell, J. (2011). The Challenge of Reconciling a Centralized v. Decentralized Electricity System. Institute for Local Self-Reliance.

Four ways DER owners can be compensated for value

Mechanism	Examples
Tariffs or bill credits (rate design)	Net energy metering, value of solar tariff, NY Phase One value stack tariff
Market revenues	Energy, forward capacity, ancillary services, renewable energy credits
PPAs or contracts	PURPA contract, feed-in tariff
Programs (e.g., DSM) and One-time payments or credits	Tax credits for RE or EVs, EE rebates, annual bill credit for DR program participation

Smart rate design examples

Time-of-use rates should reflect time-varying system value

(Hypothetical, illustrative example)

Rate Element	Based on the Cost Of	Illustrative Rate
Customer charge	Service drop, billing and collection only	$4.00/month
Transformer charge	Final line transformer	$1/kVA/month
Off-peak energy	Baseload resources + transmission and distribution	$.07/kWh
Mid-peak energy	Baseload + intermediate resources + T&D	$.09/kWh
On-peak energy	Baseload, intermediate, and peaking resources + T&D	$.14/kWh
Critical peak energy (or PTR)	Demand response resources	$.74/kWh

How to improve

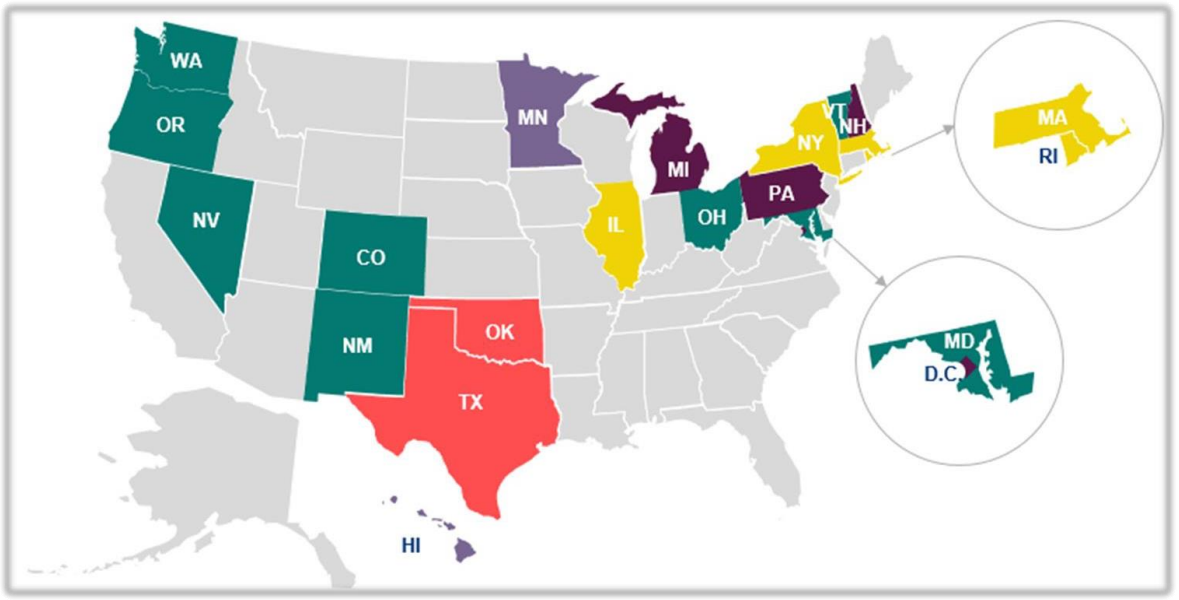
- Time-varying rates can more closely align compensation with time-varying value
- Market rules can be improved to allow fair competition among all resources
- Competitive all-source procurement processes can lead to lower cost contracts for energy, capacity, and ancillary services

Performance-based regulation (PBR)

- A regulatory framework that connects achievement of specified objectives to utility financial performance
- Can include **performance incentive mechanisms (PIMs)**, namely, metrics and formulas that determine financial rewards or penalties (i.e., adjustments to allowed revenues)

State Investigations of PBR

- **Early Exploration:** Initial inquiries often marked by a report examining PBR options
- **Initial Stakeholder Engagement:** Soliciting comments and/or conducting workshops assessing PBR options
- **Advanced Stakeholder Engagement:** Soliciting comments and/or conducting workshops in discussing specifics of PBR options
- **Implementation:** Decisions have been made or are close to being made to deploy PBR options
- **Conclusion of Inquiry:** Decisions have been made not to consider the PBR framework



Source: EnerKnol and Wood Mackenzie Power & Renewables; Tracking of the proceedings available on the EnerKnol Platform

PBR appeal

- Incent good things like non-wires solutions, aggregated DERs
- Avoid new substation, generation investment
- Incent rather than defer expenses like tree trimming, EE and bill payment assistance

Takeaways

- Changes in the power sector challenge traditional regulation
- Time-varying rates are a good way to accommodate growing DERs
- PBR has the potential to better align utility, ratepayer, and public interests
- PBR succeeds where it is clear, transparent, and aligns rewards and incentives for utilities and customers

RAP Resources

- Capturing More Value from Combinations of PV and Other Distributed Energy Resources | Regulatory Assistance Project (raponline.org)
- Next-Generation Performance-Based Regulation: Volume 1 (Introduction—Global Lessons for Success)
- Next-Generation Performance-Based Regulation: Volume 2 (Primer—Essential Elements of Design and Implementation)
- Next-Generation Performance-Based Regulation: Volume 3 (Innovative Examples from Around the World)
- Performance Incentives for Cost-Effective Distribution System Investments
- Protecting Customers from Utility Information System and Technology Failures
- Metrics to Measure the Effectiveness of Electric Vehicle Grid Integration

About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org

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