



RAP®

Energy solutions
for a changing world

Northeast NASEO States Advanced Grid Technology

NASEO Workshop
Boston, Massachusetts

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The Regulatory Assistance Project (RAP)®

Background and Purpose

- The Northeast is a traditional technology hub and thought leader
- Seven states share energy markets, companies, utilities and a connected grid
- Benefits of innovation, thought leadership and intellectual capital
- Identify areas to work together on joint charges from Governors and Legislatures

Schedule

- DOE Meetings
- April 27 Session
- May 9 – 10
- June 5

Meeting Overall Goals

- Inventory advanced grid technology work ongoing in northeastern states: share anticipated outcomes, progress and challenges
- Identify areas in which coordinated state action may be fruitful and, if so, outline next steps

Meeting Overall Goals (continued)

- White Paper for submittal to DOE:
“Advanced Grid Technology:
Opportunities and Challenges in the
Northeast.”
 - Draft by July to inform DOE work underway
as part of QER 1.2
 - Final version complete by September NASEO
meeting

Goals for Today's Session

- Raise awareness of projects ongoing across region/develop inventory; clarify desired outcomes
- Identify complementary policies that support advanced grid technologies and status of policy work in each state
- Update from NASEO and RAP about work nationally and in other regions
- Output: written inventory of work in each state including status of state policies/utility regulation

Advanced End Use Technologies

Empowering Smart Technology



Smart Grid/Smart Rates

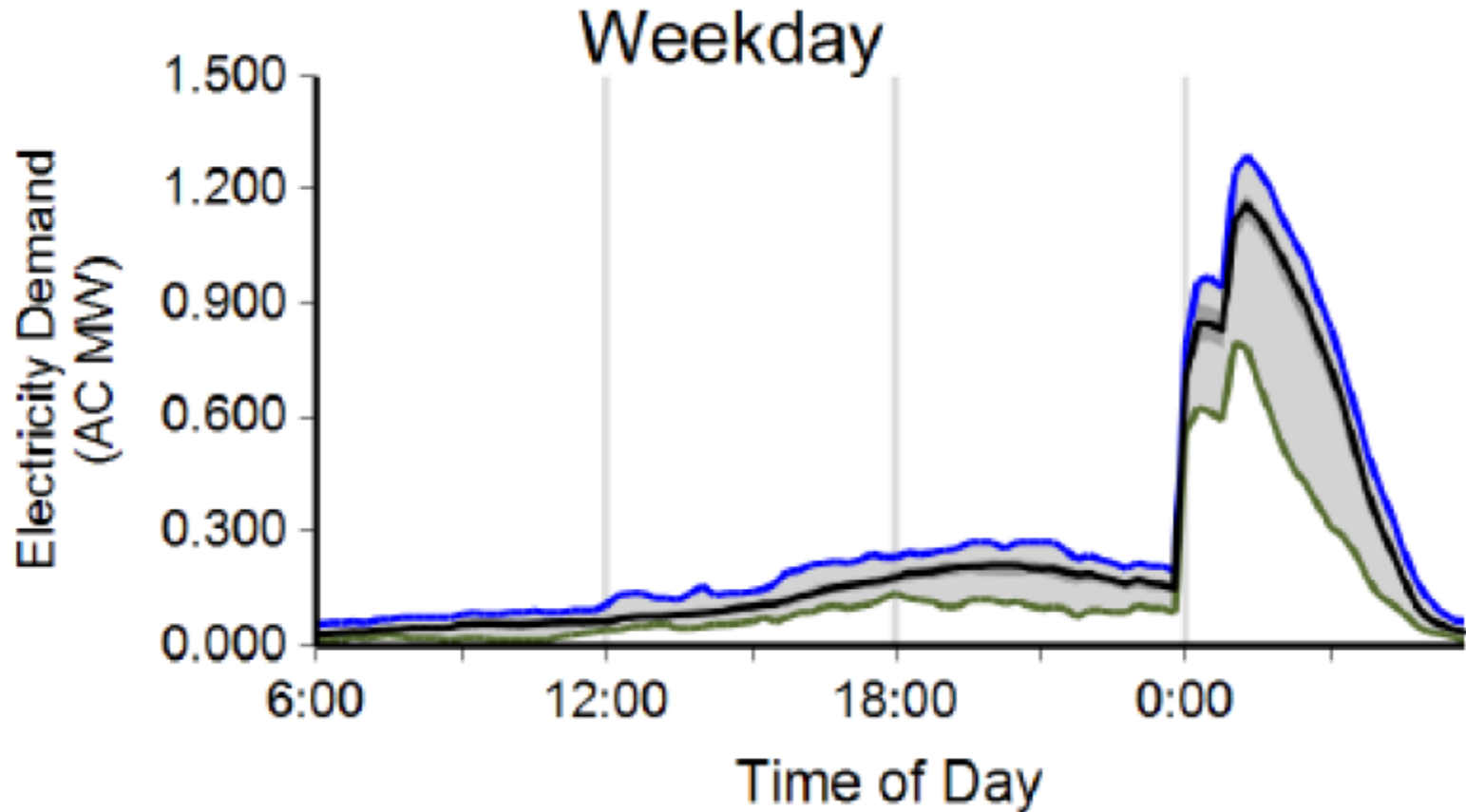


Electric Vehicles

- Charge on off-peak power?
- Provide multiple ancillary services?
- Potential Source of on-peak power?



San Diego's Off-Peak Charging



States report on advanced grid technology
in their states

Complementary policies that support advanced grid technologies

Complementary Policies

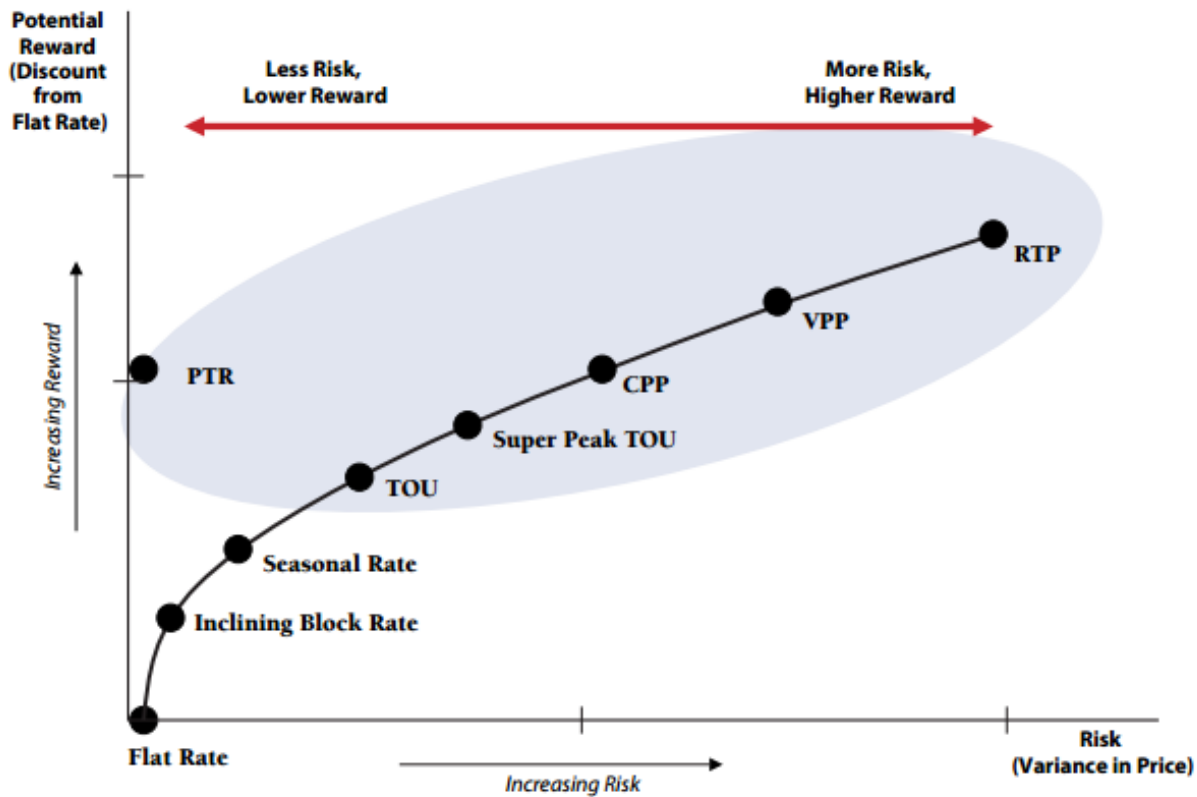
- Time-varying and dynamic rate designs?
- Technology to make smart rates work for consumers?
- Revenue regulation to ensure that utilities have a reasonable opportunity to earn a fair return?



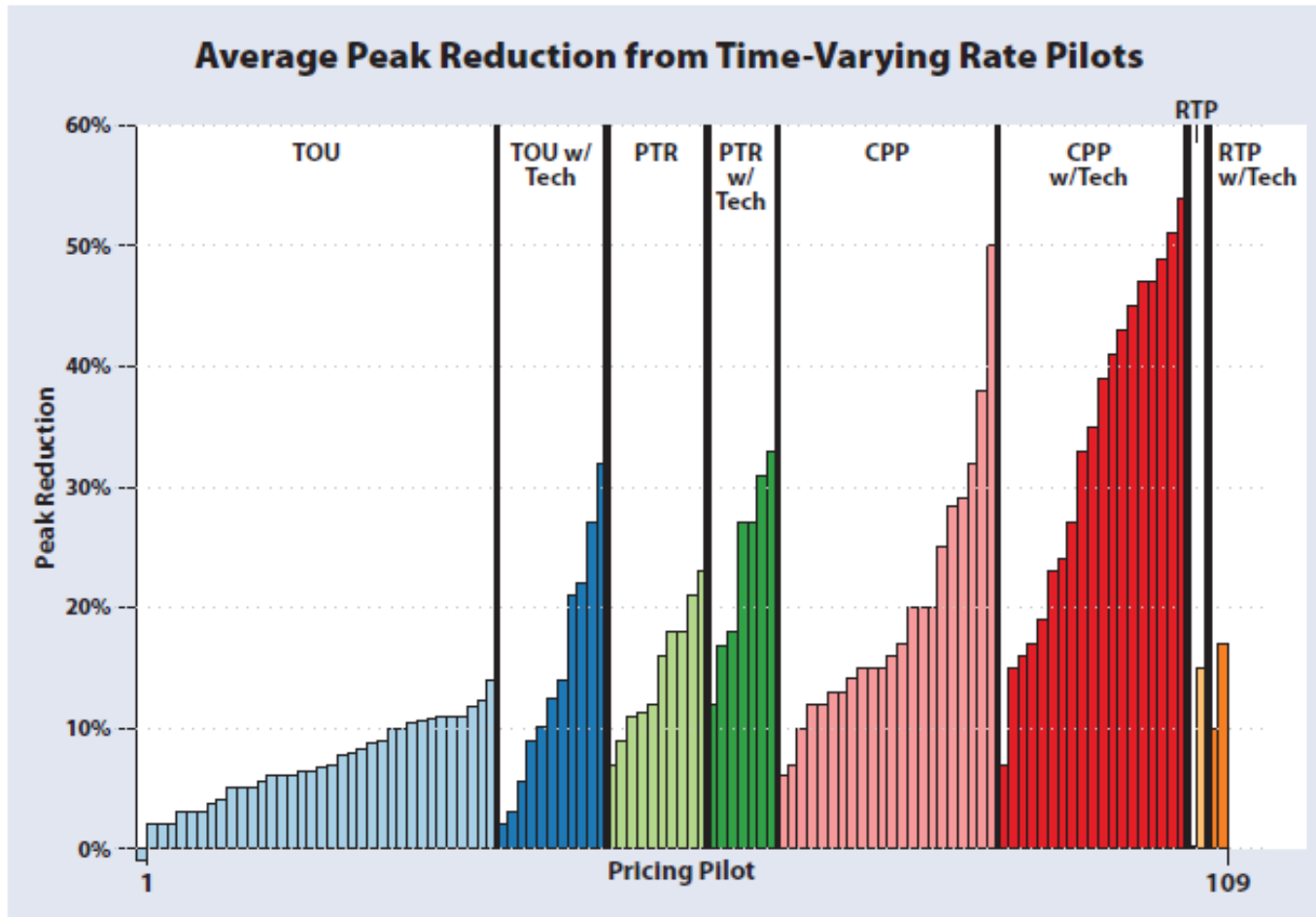
Time Varying Rates: Savings and Risk

Rates can unleash advanced technologies

Conceptual Representation of the Risk-Reward Tradeoff in Time-Varying Rates⁸⁰

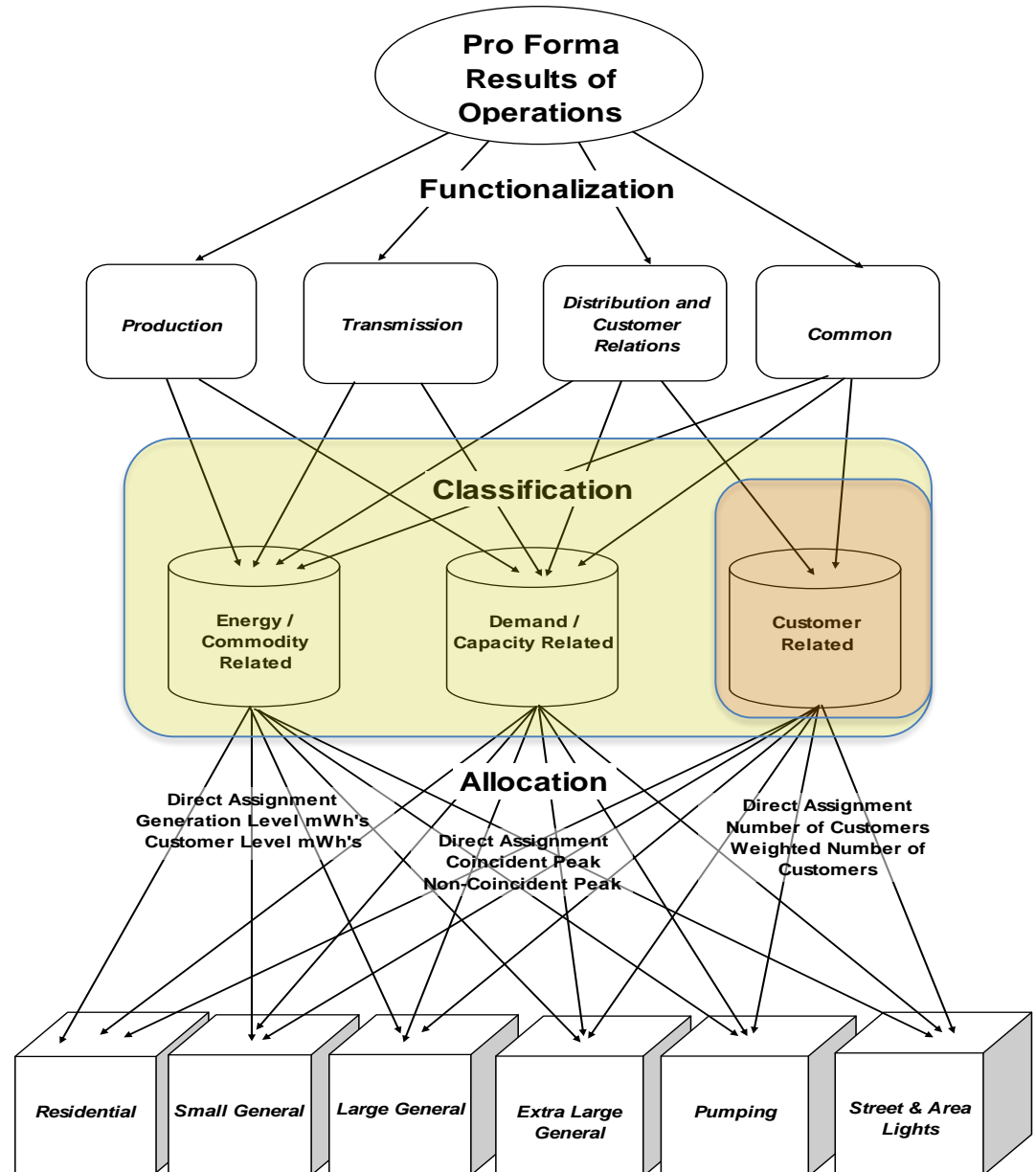


TOU and Critical Peak Pricing Experience



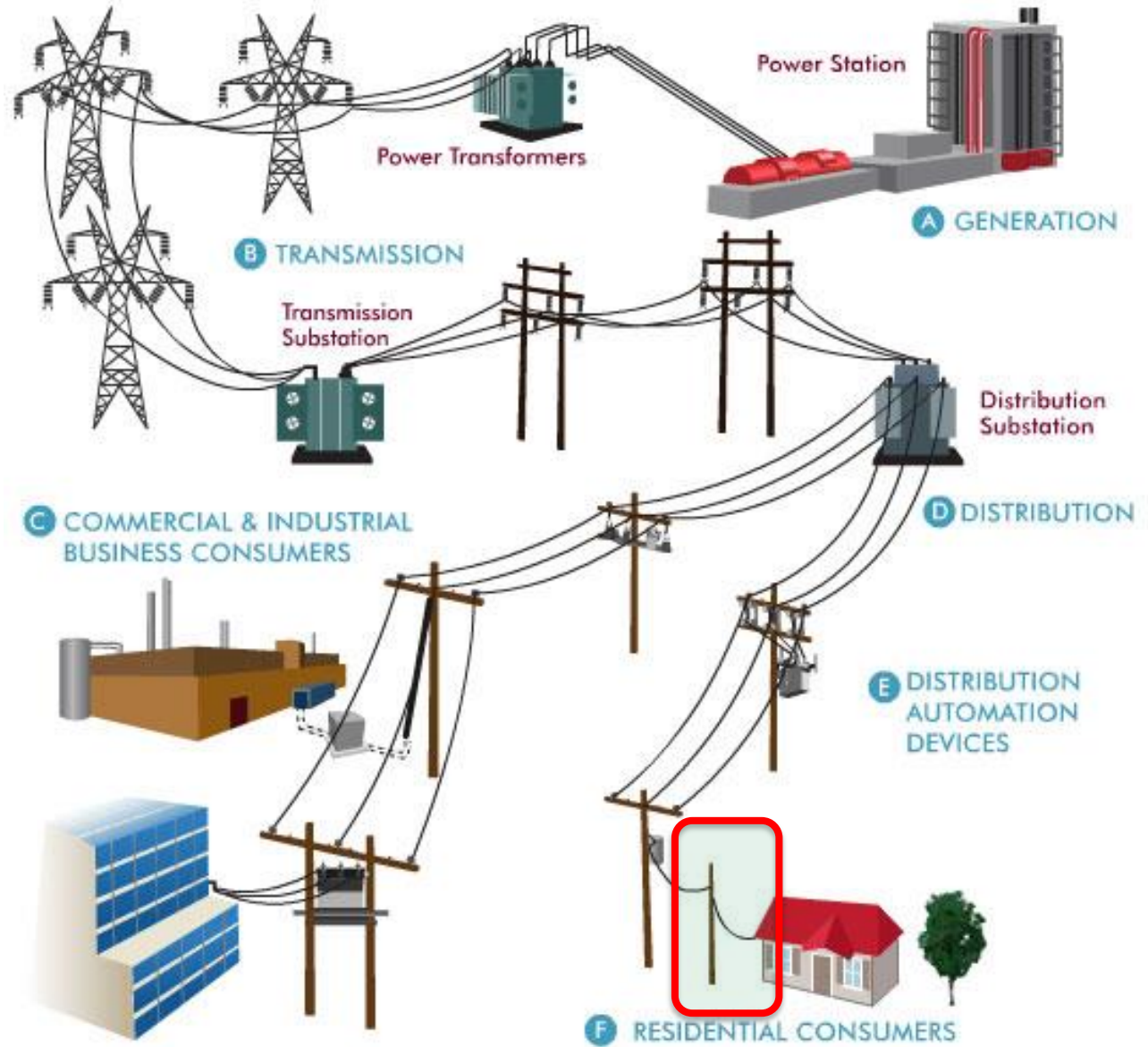
ELECTRIC COST OF SERVICE STUDY FLOWCHART

Where Did The Idea that High Fixed Charges are Appropriate Come From?

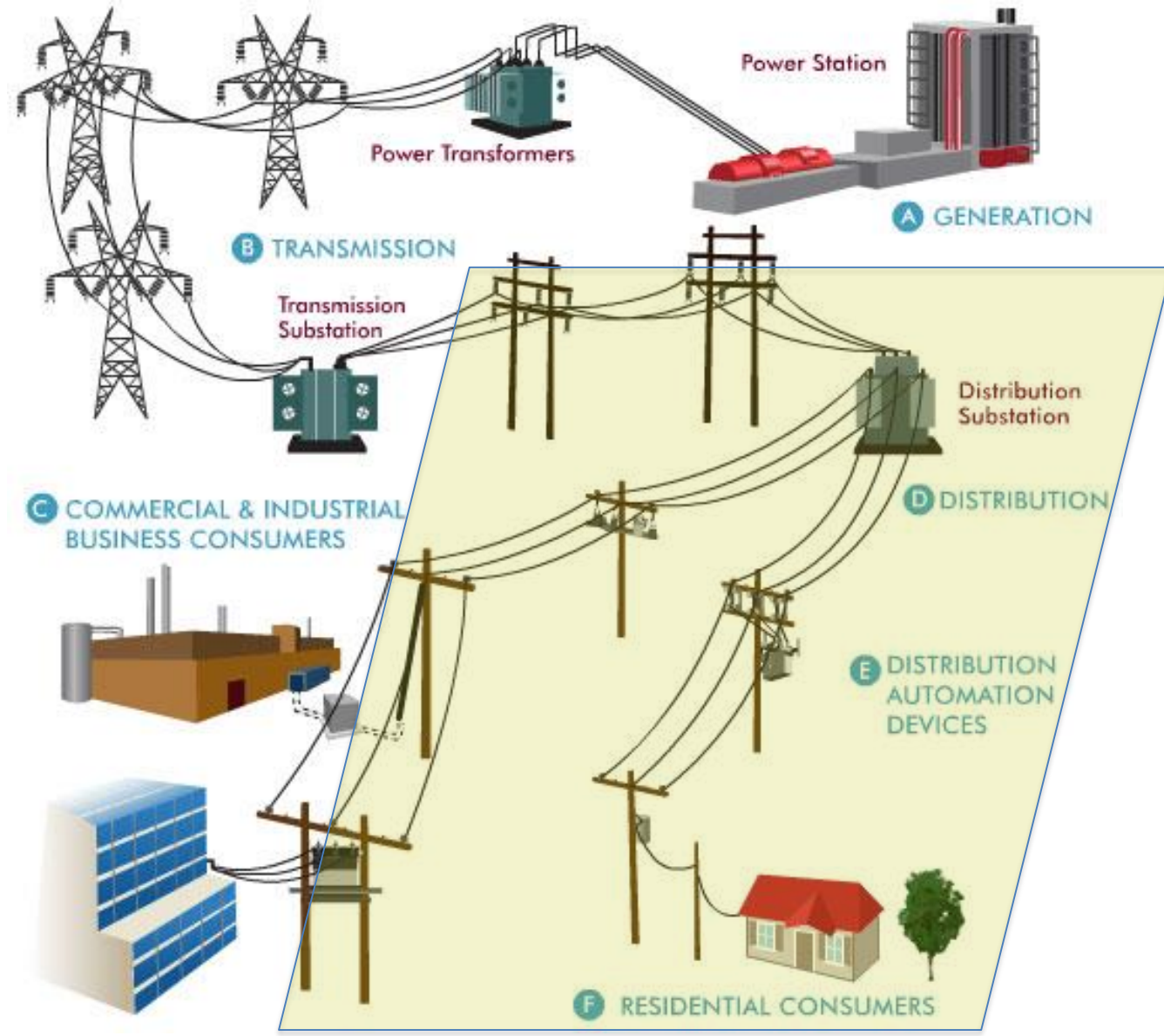


Basic Customer Method

ONLY customer-specific facilities classified as customer-related

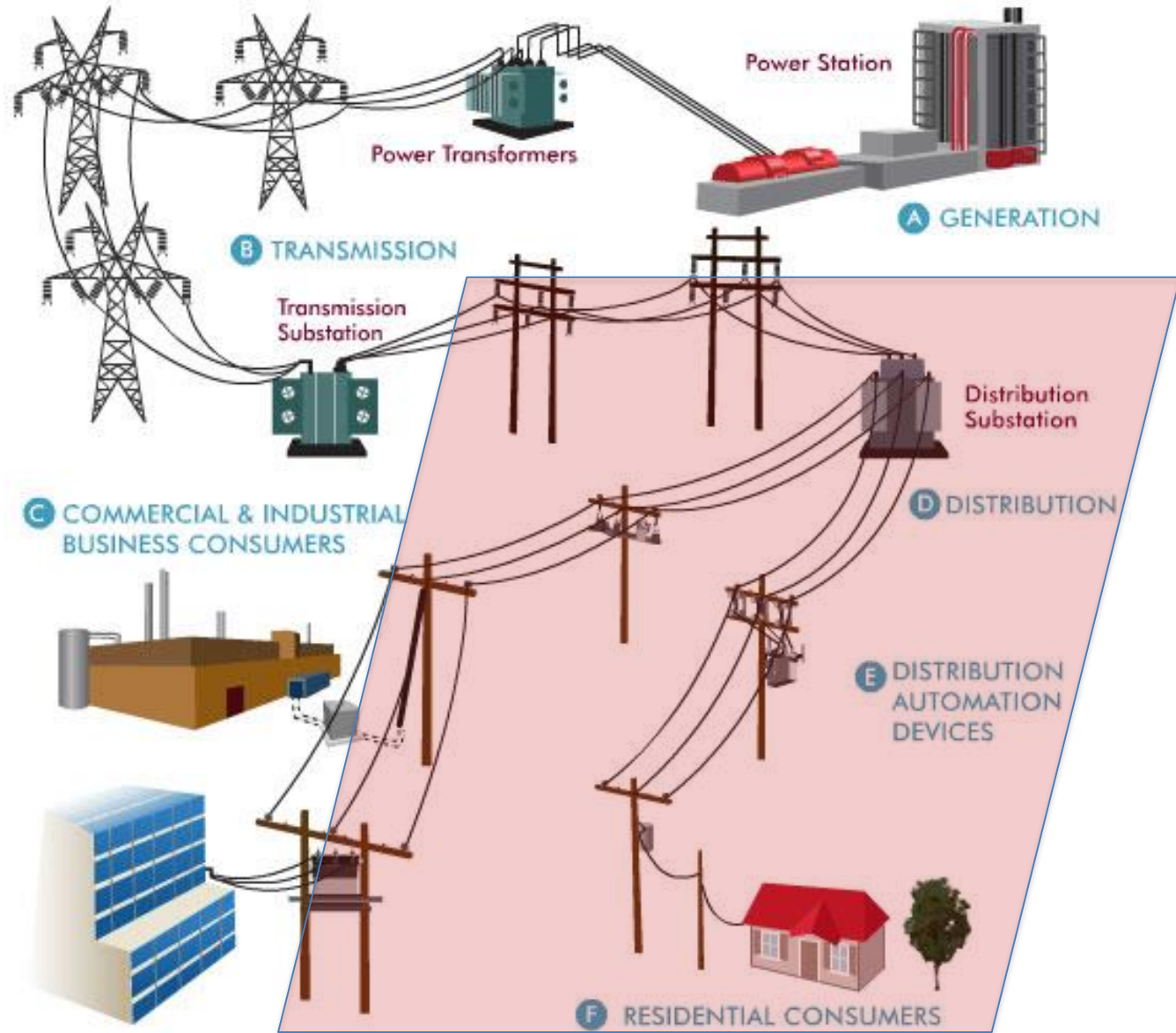


Minimum System Method:
~50% of Distribution System Classified as Customer-related



Straight
Fixed/
Variable:

100% of
Distribution
System
Classified as
Customer-
related



Comparing Methods

Cost Category	Straight Fixed/ Variable	Minimum System Method	Basic Customer Method
	\$/month/customer		
Poles	\$ 10	\$ 5	\$ -
Wires	\$ 20	\$ 10	\$ -
Transformers	\$ 10	\$ 5	\$ -
Services	\$ 1	\$ 1	\$ 1
Meters	\$ 1	\$ 1	\$ 1
Billing	\$ 2	\$ 2	\$ 1
Customer Service	\$ 2	\$ 2	\$ 1
Totals	\$46	\$26	\$4

Discuss how energy offices do and can monitor deployment effects of advanced grid technology, using their nimbleness, insight and market familiarity

Desired and expected outcomes
from investment in advanced
grid technologies, this with an
eye toward aligning with state
priorities, and converging with
utility regulation

Policy Goals

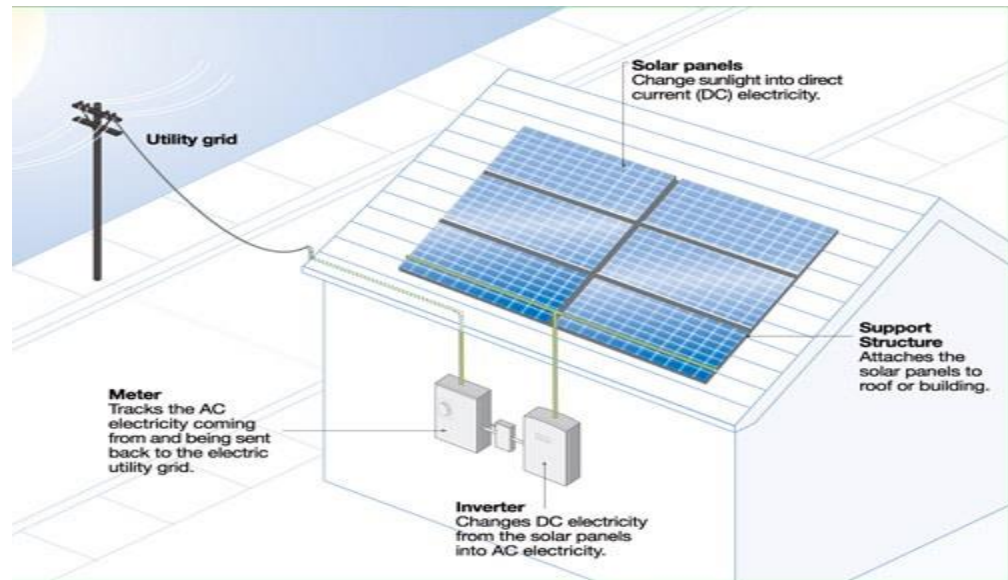
- Reduce consumer energy bills?
- Reduce electricity rates?
- Encourage state and/or regional economic development?
- Enhance grid reliability?
- Enhance energy resilience during extreme events?
- Allow customer choice and enable energy decisions?

California PUC Rate Design ~2018

Rate Element	Summer	Non-Summer
Customer Charge	None	None
Off-Peak	\$.12	\$.12
Mid-Peak	\$.20	\$.20
On-Peak	\$.30	\$.20
Baseline Credit	\$.05	\$.05
Minimum Bill	\$10.00	\$10.00

Smart Meters/Distributed Generation

Track power flows of DG (PV's) in both directions on interval basis to determine accurate billing (and value transactions)





About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power sector. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at www.raonline.org

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