

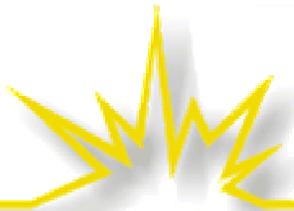
# Distributed Generation, Emergency Resources, and Standby Service

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April 13, 2006

*The Regulatory Assistance Project*

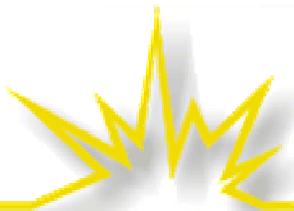


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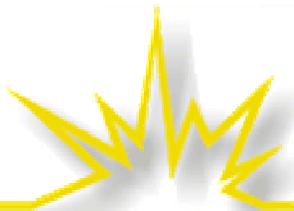
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# Some Stated Objectives of Pricing for Customers with On-Site Generation

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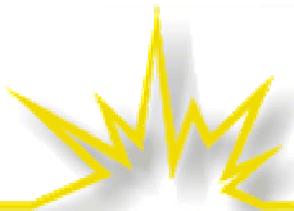
- To provide the services that DG customers want and need
- To give price signals that reflect the system costs and benefits of DG
  - To cover the costs imposed on the system by such customers
    - Charges should accurately reflect the temporal and geographic properties of cost causation
  - To reflect the benefits bestowed on the system by such customers
    - Reliability, diversity, avoided G, T, and D
- To encourage (discourage) DG deployment
  - Clean DG?



# From 30,000 Feet: Some Recurring Themes

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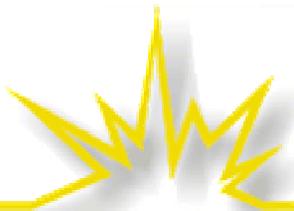
- DG reduces consumer demand for grid-supplied energy and can reduce demand for grid-supplied generation capacity
- DG can defer or avoid transmission and distribution investments
- On-site generation cannot avoid distribution investments that serve only the individual customer (can possibly affect sizing, however) assuming there is standby service.



# General Features of Utility Rates for DG Customers

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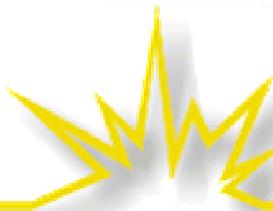
- Users with on-site generation are often referred to as *partial requirements customers*
- Typical services provided:
  - Stand-by
    - Grid power during an unscheduled outage of the on-site generation
  - Scheduled maintenance
    - Grid power, without penalty or reservation charges, while the on-site generation is being serviced
  - Supplemental (or “baseline”) Service
    - Grid power in excess of that supplied by the on-site generation, often supplied at the applicable full-requirements tariff
  - Economic replacement
    - Low-cost (usually interruptible) grid power to displace on-site generation at times of utility surplus



# Interesting Practices: New York

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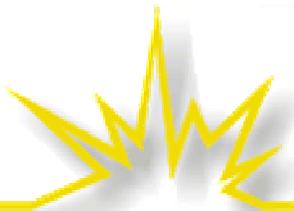
- Contract demand charges for local facilities costs
  - Based on a customer's potential maximum electric load, determined by the utility, and set yearly
- On-peak, daily as-used (non-ratcheted) demand charge for shared facilities costs
  - Assessed during daytime (e.g., from 8am to 10pm) and for the daily amount of standby service demand (kW) a customer uses



# Interesting Practices: Oregon Virtual Power Plant

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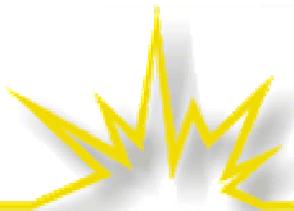
- Utility relies on customer emergency generators as a peaking resource.
- Utility maintains units, procures fuel, and dispatches the unit.
- Customer is guaranteed use during any system outages.
- Customer receives a fee from the utility.



# Issues and Ideas

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- Purpose of stand-by rates?
  - To promote CHP deployment while covering legitimate costs of service
- How do the load profiles of customers with DG differ from those without? Do they?
- What costs does on-site generation impose on the system?
- What benefits does on-site generation provide the system?



# Issues and Ideas

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- “Best efforts” or Non-Firm Stand-by Service
  - A customer would not be creating any requirement for the utility to invest in any generation or transmission plant or equipment to provide standby service. This could justify no demand charge at all.
- Low Demand, High Energy
  - Demand charges based on a fraction of nameplate capacity, high energy charge
    - Reflects low probability of DG outages coincident with peak
    - Strong incentive to maintain and operate DG
    - Similar to RI settlement where customers are not charged T&D for back-up, only for supplemental (reflects diversity)