

# Enabling environments for renewables

Maldives, May 29 2013

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# Objective

- Recognize and value the benefits of renewable energy technologies (RETs)
- Accommodate the particularities of RETs
  - They have a different cost pattern over time (higher up-front investment)
  - Different generation pattern over time (in many cases depend on resource availability)
  - Different geographical pattern of the resource (sparse, remote, ...)

# Cross-cutting policies

- Targets (binding or not binding)
- Fossil fuel taxes (e.g. carbon taxes)
- Fiscal incentives
  - Reduced import tariffs
  - Accelerated depreciation
- Technical standards
- Research, outreach, education, capacity building, institutional strengthening

# Electricity markets

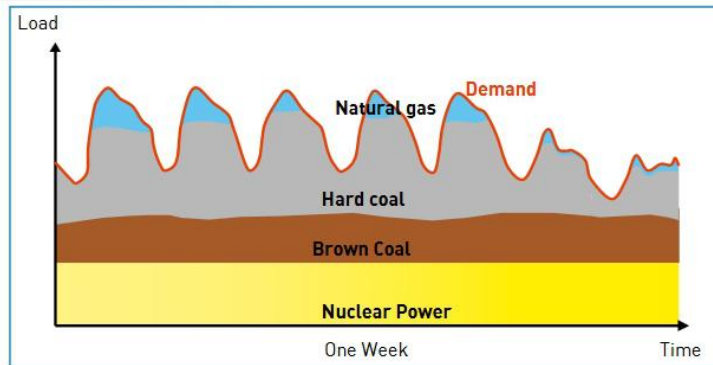
- Procurement rules
  - Feed-in tariffs
  - Quotas (renewable portfolio standards) supported by tradable certificates
  - Auctions
  - Mixed rules
- Self-supply regulations
  - On-site (net metering)
  - Off-site (energy bank, wheeling charges)
- Complementary policies
  - Streamlined permitting
  - Interconnection standards
  - Transmission planning

# New market paradigms

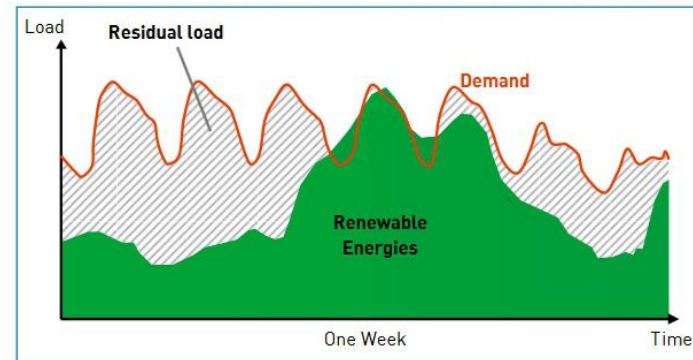
- Markets are actually not “technology-blind”
- Options for accommodating variable generation, as well as for valuing price stability

# Accommodating variable generation

baseline/peak

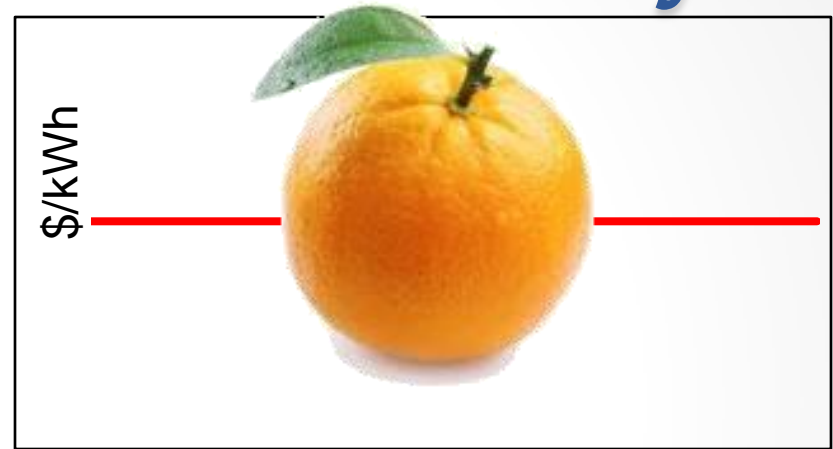
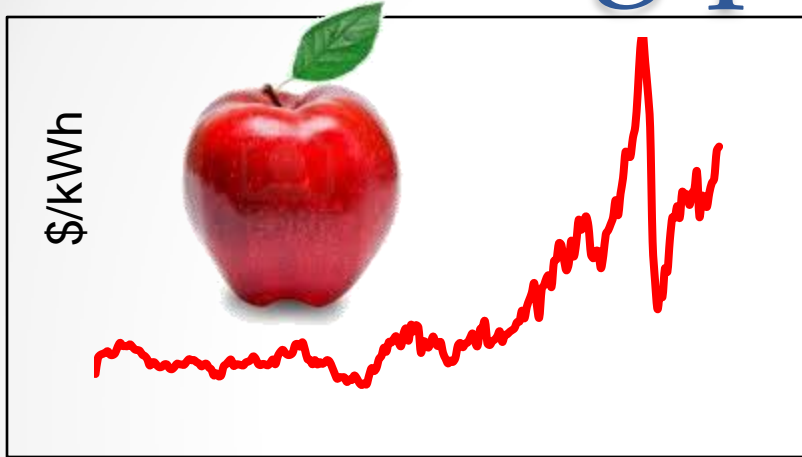


unflexible/flexible



- Baseline/peak model matches conventional technologies
- Incentivizing flexibility
  - Flexible generation
  - Demand response
  - Energy storage
  - Regional interconnection

# Valuing price stability



- Central planning: Portfolio approach instead of least-cost planning
- Wholesale markets: Incentives for fixed-cost contracts

# Off-grid (access)

- Legal framework
  - Sale of electricity
  - Connection of mini-grids to large grids, ...
- Smart subsidies



# Heat applications

- Same as energy efficiency (standards, financing, ...)
- Legal framework
  - Sale of heat