



# Regulatory Approaches to Managing Investment Uncertainty

Gülefşan Demirbaş  
ICER VWG2 Co-Chair



# The Problem

- Long lived infrastructure investment
- Uncertainties that increase investment risks;
  - future volume of demand,
  - technology changes,
  - changes in market prices
- Effects on cost of capital
- New approaches in tackling with uncertainties



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# Uncertainties

- Effects of policies on increased penetration of intermittent resources
  - Displacement of traditional capacity
  - Growth in the requirement for programmable capacity
  - Higher requirement for reserve capacity
  - Locational diversity
  - Gas networks' flexibility

**Uncertainties**

# Traditional Regulatory Approaches

- Assurance for a fair return over a long period of time
- Regulatory judgment on efficiency
- Significant burden on identification of efficiency

If significant uncertainty prevails about future changes which may impact the efficiency of investments?



# Case Studies



Autoriteit  
Consument & Markt





# New Regulatory Approaches

- Netherlands:

Annual tariff for exceptional (Non-Regular) investments

- France:

- Incentives for interconnections based on valuation for the European electricity system
- S3REnR: Schemes for the Connection of Renewable Energies to the Network

- Great Britain:

RiIO: Revenue setting using Incentives to deliver Innovation and Outputs





# New Regulatory Approaches

- Italy:

## Pilot Projects for Storage

- Energy driven
- Power driven

- Australia:

Optional Firm Access (OFA): Purchasing of firm access rights

- PJM-USA:

Valuation of frequency response services according to the actual performance



# Methods of Assessment & Analysis

- Mexican Regulator: Statistical model to analyze impact of significant growth in generation from PV
- EPRI: CBA including an assessment of the societal and economic welfare benefits
- Italian Regulator: Indexes based on identification of “reverse power flows”

# Good Practices

- Allocation of some risks to the entity best able to manage the risk in order to align commercial interest to wider public interest
- Considering arrangements for appropriately rewarding infrastructure projects with higher levels of risk
- Extension of tools available to regulators to manage risks
- Analytical tools for the assessment of uncertainty and the associated risks
- Encouraging pilot projects to prove new techniques and technologies



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