Policies for Energy Provider Delivery of Energy Efficiency

Brussels Workshop
January 18, 2012

Grayson Heffner
Senior Energy Efficiency Analyst

ENERGY EFFICIENCY

International Energy Agency

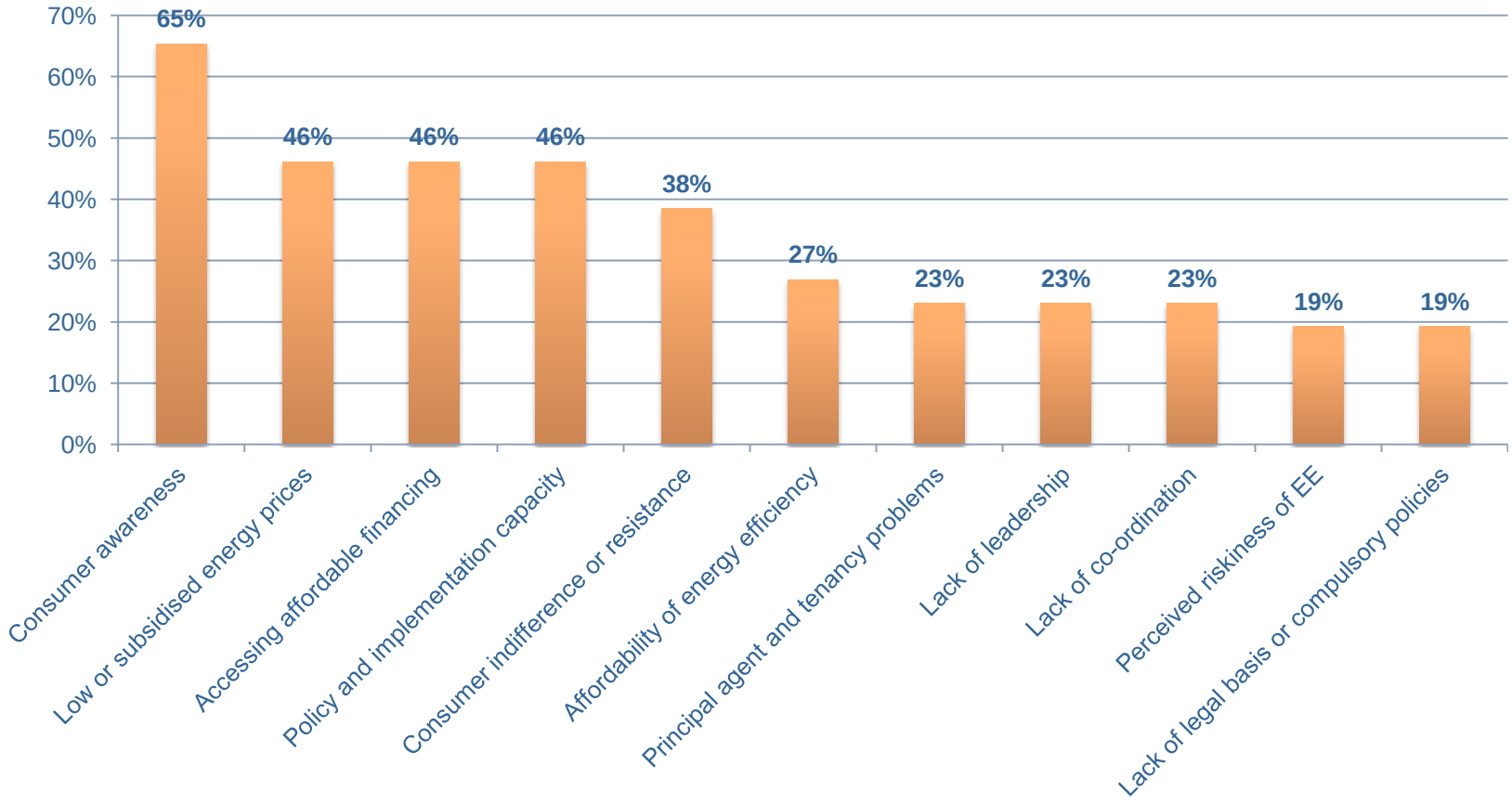
Topics

- Why look to energy providers to deliver energy efficiency?
- Policy research needs for energy-provider delivered energy efficiency
- Exploring interactions between regulatory mechanisms and programme designs
- Creating opportunities for policy dialogue

Why should energy providers deliver energy efficiency?

- Well positioned in the energy marketplace
- Strong technical and administrative capacity
- Ability to mobilize funding
- Shared responsibility – with government - for energy security and sustainability
- Well positioned to help overcome barriers to energy efficiency

Energy providers can help address market failures and institutional barriers



End-user awareness, low energy prices, access to financing, and implementation capacity are the most common barriers

Energy efficiency policy trends

- North America
  - Rapid growth in energy provider EE spending
    - $5 billion in 2010 → $15 billion by 2015
  - Diversity of regulatory mechanisms
- Europe
  - UK Carbon Emission Reduction Targets (CERT)
  - White Certificates (WhC) schemes
  - Proposed Energy Efficiency Directive
- Asia-Pacific
  - China's new DSM Rule
  - India's investor-owned utilities
  - Australia's retailer obligation programmes

Measuring the scale of energy provider-delivered energy efficiency

Region	Sales (TWh)	Revenues (USD Billions)	EE Spending (USD Billions)	Spending metric (%)
North America	4,200	400	6.1	1.5
EU 27	3,350	650	3.0	0.5
China's new DSM rule	4,700[1]	410	1.2 (imputed)	0.3
Brazil	425	50	0.5	1.0[2]

[1]2011 data

[2]System benefit charge level; half flows to R&D and half to energy efficiency

Sources: Nevius, Eldridge and Krouk, 2009; Barbose, Goldman and Schlegel, 2009

Policy research on energy provider-delivered energy efficiency

Review of Energy Provider-delivered energy efficiency programs

- Desk study of program types
  - Incentives
  - On-Bill Financing
  - Equipment replacement
  - Advice and assistance
  - Direct installation
  - Comprehensive implementation
- Outreach and survey of innovative and proven programs
  - Through networks of utility providers
  - Directly to investor-owned and municipal utilities
  - Catalogued 174 international DSM/EE programs implemented by energy providers
  - 21 programs selected for Case Studies (as of 17 Jan 2012)

Review of Energy Provider-delivered energy efficiency programmes

- Desk study of programme types
  - Incentives
  - On-Bill Financing
  - Equipment replacement
  - Advice and assistance
  - Direct installation
- Outreach and survey of innovative and proven programs
  - Through networks of utility providers
  - Directly to investor-owned and municipal utilities
  - 29 program profiles as of 9 December 2011

Focus on Innovative Programs

- Explore the range of measures and programme types
- Highlight both proven practice and promising new approaches
- Analyse variations in programs and their effectiveness:
  - Impact and cost-effectiveness
  - Compatibility with energy market design and regulatory frameworks
  - Variety in types of energy providers
  - Trends and opportunities.
- Metrics used to analyze and compare EE programs (resources and effectiveness)
- The regulatory conditions are that allow for innovative programs
- Policy recommendations for a successful program environment

Exploring policy-program interactions

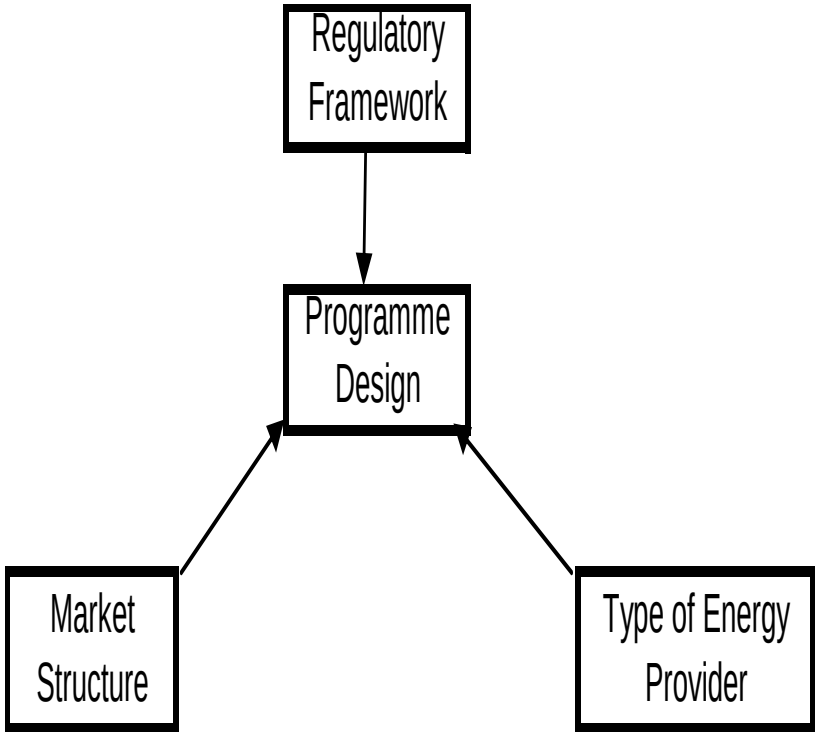
- Does trading improve the cost-effectiveness of obligations scheme?
- Are “distributional safeguards” needed? How should they be provided?
- Setting an energy savings target trajectory
- Encouraging innovation while managing overhead costs
- Importance of oversight
- Competitive effects of obligations in liberalized markets
- What role can capacity and energy markets play?
- What do additionality requirements add?
- Balancing long-lived and short-lived efficiency measures

Alternative institutional arrangements

- Determining obligated entities
- Choosing eligible entities
- Assigning administrative responsibility
- Building monitoring and verification capacity
- Selecting a market operator

Comparative analysis of programmes

- Market, institutional and regulatory interactions
- Program compatibility with market designs and regulatory frameworks
- Extending EE policies to cover upstream energy providers
- Exploring untried combinations of regulatory mechanisms and programme designs



Consideration of which energy providers might be obligated

- Who is most frequently tapped to deliver energy efficiency?
- What regulatory mechanisms might mobilize other energy providers?
- What type of energy efficiency programmes might they undertake?

Energy provider entities	Market Structures			
	Integrated and regulated	Unbundled and regulated	Unbundled and partially competitive	Unbundled and fully competitive
Electricity and gas				
Transmission				
Distribution				
Retail				
Fuels				
Transmission				
Distribution				

Often involved in delivering energy efficiency

Seldom involved in delivering energy efficiency

Metrics for energy provider-delivered energy efficiency

- **Projecting economic and technical potential**
- **Setting realistic targets for energy providers**
- **Benchmarking and comparing results across providers and types of energy provided**

Impact	Cost
• Energy savings by electric utility by sector in GWh • Energy savings by gas utility by sector in TBtu • Savings as % of sales • Savings as % of peak demand • Energy efficiency target as % of total sales • Carbon dioxide reduction	• Total cost per kWh or Mtoe saved • Administrative costs per kWh saved; per TBtu saved • Spending per ratepayer

Outreach and engagement strategy

- Regional workshops
  - Australia (December 2011)
  - Europe (January 2012)
  - North America (April 2012)
  - China (TBD)
- Workshop conveners
  - IEA and IPEEC member governments
  - Regulator associations
  - Energy provider associations
- Other stakeholders
  - Consumer advocates
  - Energy efficiency industry
  - Academics and NGOS