



The Energy Sector Management Assistance Program

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# | Global Experience with Market Transformation Programs

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# Character of global EEMT programs

**Programs designed to encourage the adoption of more efficient products in a market**

*Program strategies can include:*

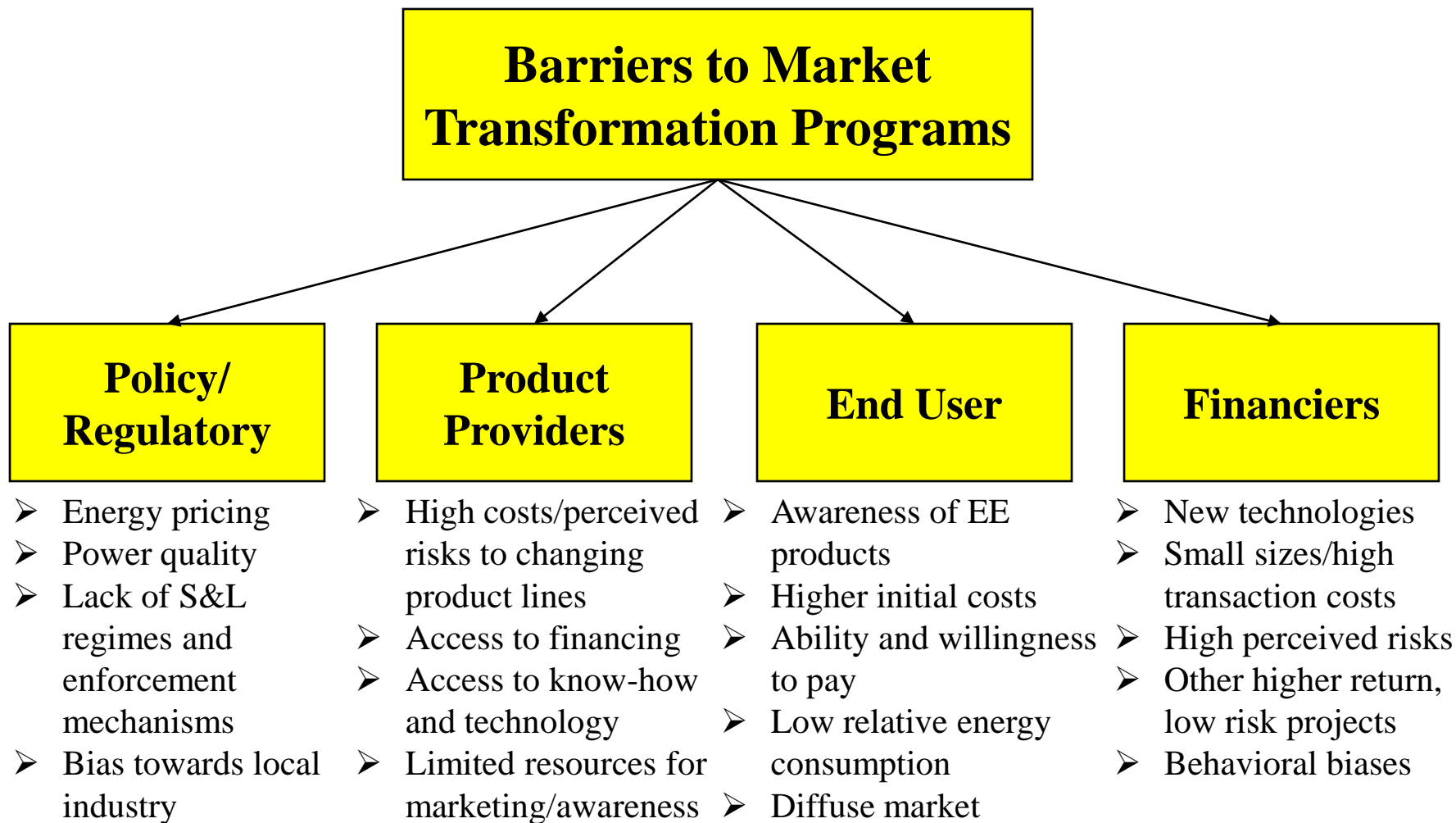
- *utility demand-side management (DSM)*
- *standards and labeling (S&L)*
- *marketing/promotion*
- *technology transfer*
- *market aggregation (e.g., bulk purchase, manufacturer negotiations)*
- *rebates/subsidies/low-interest financing*

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# Challenges in developing countries

- Low energy prices
- Public (and private) institutions have limited capacity and weak governance structures
- Limited public resources for programs/incentives
- General public considers environmentalism a 'luxury issue'
- Limited local manufacturing of EE products
- Poor quality power
- Limited consumer ability-to-pay for higher cost EE products
- Low consumption in general and penetration of many household appliances

# EEMT barriers



# Sample of international EEMT donor programs

- **UNDP/GEF** – lighting programs in China, the Philippines, Slovak Republic, Vietnam; refrigerator programs in China, Cuba, Tunisia; buildings in Brazil, Czech Republic, Morocco; S&L programs in India, Kenya, South Africa
- **World Bank/GEF/CF** – lighting programs in Thailand, Mexico, Vietnam, Uganda, Rwanda, Argentina; boiler program in China; chiller programs in Thailand, India
- **IFC/GEF** – lighting programs in Poland, Argentina, Czech Republic, Hungary, Latvia, Peru, the Philippines, South Africa
- **USAID/EPA** – motor program in China; transformer program in India; lighting program in India; pumpset program in India; S&L programs in Brazil, China, India, Ghana, South Africa, Mexico
- **Country Programs** – refrigerator program in Brazil, lighting program in Sri Lanka

# Representative program models

## 1. India Lighting (USAID) – Utility coupons

- *Power shortages in State of Karnataka*
- *Utility (BESCOM) implemented a CFL program with manufacturer partnership, issuance of manufacturer coupons and customer payments through electricity bills*

## 2. Thailand Chillers (World Bank/GEF/MP) – Risk sharing

- *Need to replace CFC-based chillers from market; using energy-efficient chillers as replacements to increase uptake*
- *Financial intermediary (IFCT) provided ‘contingent’ loans to customers and/or ESCOs to replace old chillers and recover investments from energy savings; if energy savings was not sufficient, a portion of the loan was forgiven*

# Program models (cont.)

## 3. China Refrigerators (UNDP) – Technology transfer

- *High energy demand growth for refrigerators and concerns over local pollution*
- *Technical assistance program to improve refrigerator and compressor designs and manufacturing capabilities, S&L programs, public campaigns, incentives to retailers, bulk purchase by government agencies*

## 4. India Irrigation Pump Sets (USAID) – Agent model

- *Lack of farmers paying for electricity resulting in financial insolvency of sector and low quality power supply*
- *Comprehensive program developed to improve distribution network, shift customers to meters with preferential tariffs, negotiated prices for EE pump sets, performance contract for pump set marketing, green financing offered to farmers*

# Program models (cont.)

## 5. Thailand Refrigerators (World Bank/GEF) – Labeling

- *High energy demand growth for refrigerators and concerns over local pollution*
- *Utility (EGAT) negotiated with 5 main manufacturers to label single-door models in return for public campaign, high initial uptake (when incremental cost low); once labels were mandatory and labels updated, uptake declined*



# Program models (cont.)

6. Brazil Refrigerators (ANEEL, power utilities) – Subsidy/  
Give away scheme
  - *High losses in urban poor (slum) areas with high theft and low collection rates*
  - *Utility DSM surcharge used to subsidize (100%) refrigerators for residential users, usually in exchange for agreement to begin paying electricity bills; new 10M program will have cost recovery measures and obligation for scrapping of old model*

# Program model pros and cons

Model	Pros	Cons
Bulk purchase	Fairly simple administration procedures (single buyer, few procurements, disbursements against large contracts, technical specs in bidding docs), can bring costs down without subsidies	Can interfere with natural distribution channels, may raise concerns over market sustainability, requires strong financial management system
Coupons	More market-based approach with use of existing distribution channels to help ensure sustainability	Need measures to protect against low quality products or fake coupons, disbursement against coupons is more complex, harder to ensure lower pricing, procurement procedures needed for many individual purchases
Agent/ Retailer incentives	Incentive for sale goes to the one liaising with customer directly, easier to do marketing and education, bundled disbursements	Possible collusion between ESCO and customer, incentive for agent to 'oversell' products, does not address higher incremental costs for customers
Labeling	Can provide clear and credible information to customers, low cost, creates platform for national standards	Does not address higher incremental costs for customers, labels may be voluntary
Subsidies/ Rebates	Helps address higher incremental costs, participation can require trade-in of older models to ensure disposal	Is often not sustainable, concerns over equitable allocation of subsidies, may have higher free ridership

# Lessons learned

- **Upfront, holistic market analyses** essential to determine target markets/products, baseline consumer behavior, key barriers, product supply chains, financing options, skills gaps
- Program models should prioritize and address critical barriers in a sustainable manner and be **customized to local conditions and production**
- Programs should be **flexible** to respond to changing market conditions and implementation realities
- Participating stakeholders must have **proper incentives** to participate in programs
- Program must encourage **competition** (among service providers, equipment suppliers, banks)

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# Lessons learned (cont.)

- Programs should be **commercially-oriented** and **demand-driven** (i.e., end users should drive projects)
- Subsidies should be used **judiciously, transparently** and have a clear **exit strategy**
- **Minimum technical specifications** may be needed to ensure credibility of technology; enforcement must be effective and efficient
- **Well-designed marketing efforts** are critical – consider performance-based payments, public education campaigns involving local governments, NGOs and schools; highlight non-energy benefits too
- Ongoing **technical support** is needed to address emerging barriers, ongoing skills enhancement and counteract behavioral barriers

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*Thank you!*

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