

Turkey Electricity Market Reform

ESMAP's Role

Energy Week

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Turkey's Electricity Reform Program

- Strong **independent regulator** in place for 8-9 years
 - Tariff reform – **cost-based pricing** for electricity and gas in place, modified quarterly, automatically
 - Licensing and supply quality monitoring
- **Modern electricity market**
 - 18-20% of wholesale electricity transacted through the market
 - ~ 50% of retail consumers eligible – free to choose supplier
 - Day-ahead market scheduled to start shortly
- Strong program of **privatization** in electricity and gas
 - Entire distribution business sold – US\$ 16 billion
 - Private greenfield gas distribution companies in all major provinces
 - Elec. Gen. privatization to start shortly
- Major effort in **clean energy** – Renewable and Energy efficiency
 - **15,000 MW of wind** expected over next 5 years
 - Large scale ongoing hydro program

Key priorities supported by ESMAP 2007 – 2011 (ongoing)

- Mitigation of supply security risks
- Capacity building for electricity market operations
- Support for the development of “actively managed grid” operations (“smart” grid sort of effort) – in order to enable efficient integration of intermittent generation

Mitigation of supply security risks

- Assessment of extent of risks – timing and magnitude
- Assessment of solutions consistent with competitive liberalized market structure
 - Broad spectrum – IPP model to competitive auctions for new capacity
- Solution proposed:
 - Capacity-based incentive mechanism + competitive auction for new capacity
 - Draft regulations
 - Amendments to Energy Market Law to enable supply security measures

Capacity Building for Electricity Market Operations

- Support for economic valuation of water (for hydro operations)
- Capacity building for system operations/dispatch of intermittent energy (wind mainly)
- Capacity building for market splitting
- Also supported the assessment of options for improving the autonomy of the transmission system/market operator

Development of actively managed grid operations

- This study aimed at assisting the economic and efficient integration of the large-scale intermittent generation planned (wind mainly)
- Diagnosis of the current grid, system operation, SCADA, telecom
- Assessment of international practices – Spain, Italy, Germany...
- Development of specific investment needs in SCADA, grid, telecom – in order to enable optimal utilization of wind energy, while reducing the incremental back-up requirement
- Assessment of regulatory aspects, grid code requirements
- Follow-on work ongoing – Capacity building for system operator for AMAG operations
- This work is expected to feed into a proposed CTF loan for a “smart” grid type solution in support of RE development

Thoughts

- Trust fund resources are absolutely critical for the Bank's partnership on complex programs such as in energy
- Going forward, several areas emerge as priorities for ESMAP support:
 - Further capacity building for transmission company – planning, day-ahead market operations, demand-side participation in market operations
 - Energy efficiency
 - Support for regulatory framework for RE
 - Broader environmental sustainability issues relating to RE development
- ESMAP's annual cycle can sometimes impact efficient implementation
- Existing funds are insufficient, compared to the needs of client countries