Financing Energy Supply
The Role of the Private Sector

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Introduction

Key Questions:

• What form do Public Private Partnerships in power supply infrastructure investments take in Arab region and what are the common themes and variations across countries?

• What challenges and barriers arise under current private sector financing models?

• What measures should be deployed to overcome current challenges and barriers?
Per Capita Electricity Consumption of Selected Arab Countries (kWh – 2008)

- **Kuwait**: 18,320 kWh
- **Qatar**: 14,997 kWh
- **United Arab Emirates**: 11,044 kWh
- **Bahrain**: 9,814 kWh
- **Saudi Arabia**: 7,967 kWh
- **Libya**: 4,270 kWh
- **Lebanon**: 3,569 kWh
- **Arab World Average**: 2,296 kWh
- **Jordan**: 2,226 kWh
- **Syrian Arab Republic**: 1,905 kWh
- **Egypt, Arab Rep.**: 1,608 kWh
- **Tunisia**: 1,350 kWh
- **Iraq**: 1,183 kWh
- **Algeria**: 1,026 kWh
- **Morocco**: 781 kWh
- **Yemen, Rep.**: 249 kWh

Source: World Development Indicators 2011
Components of Power Cost

**IPP Power Plant** (Build, own, operate)

- Fuel
- O&M
- Depreciation
- WACC
- Total

**Government-Funded Power Plant** (Build, own, operate)

- Fuel
- O&M
- Depreciation
- WACC
- Total

### Differences in cost Components: IPPS vs. Government-funded Plants

<table>
<thead>
<tr>
<th>Component</th>
<th>IPPS Advantage</th>
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<tbody>
<tr>
<td>Fuel</td>
<td>IPPS tend to control their heat rate degradation better</td>
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<tr>
<td>O&amp;M</td>
<td>IPPS show slight advantages as a result of lower manpower, more qualified staff, and better procurement practices, which are partially offset by lower salaries in government-funded plants</td>
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<tr>
<td>Depreciation</td>
<td>IPPs have tighter control over capital expenditures, with specifications designed to serve the life cycle of the IPP. Comparisons are often difficult due to the increased cost components of IPP tender packages (e.g. jetty and transmission substations)</td>
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<tr>
<td>WACC</td>
<td>IPPs have higher financing costs, but benchmarking government-funded plants is difficult</td>
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<tr>
<td>Other</td>
<td>Indirect benefits to the economy are typically not factored into analyses. In the case of an eventual sale, a plant’s terminal value would lower the costs of the IPP</td>
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Challenges

Long-Term Implications of Existing Financing Model

• Contingent liabilities
• Base-load Bias / Regulatory Capture

Infrastructure Investment Risk Landscape in Arab Countries

• Country / Political Risk
• Fuel Risk

Renewable energy supply challenges

• Fuel subsidies
• Political commitment
Outstanding IPP/IWPP Liabilities

(% of GDP)

- UAE: 0.8 (2009), 1.0 (2015)
- Qatar: 0.4 (2009), 1.2 (2015)
- Kuwait: 0.0 (2009), 0.2 (2015)
- Saudi Arabia: 0.3 (2009), 0.8 (2015)
- Bahrain: 2.1 (2009), 2.7 (2015)
- Oman: 0.9 (2009), 1.7 (2015)

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Cost and Income Structure

Cost and Income Structure of a Typical GCC Utility
(in US cents per kilowatt-hour)

- Total Cost of Provision at Market Prices: 12.0
- Distribution Subsidy (explicit): 1.8
- Fuel Subsidy (implicit): 6.2
- End-consumer Price: 4.0

Capital cost: 1.4
Operation & Maintenance: 0.9
Fuel at Market Prices: 7.2
Transmission: 1.0
Distribution: 1.5

Note: Analysis based on a newly built natural gas combined cycle (NGCC) plant, a fuel price paid by the utility of $1 per MMBtu, a market fuel price of $7 per MMBtu, plant life of 25 years, overnight cost of $700 per kilowatt, and a real cost of capital of 4.5 percent

Source: Booz & Company analysis

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What is next?

Improving the regulatory environment

• Long-Term Liability Management
• Integrated Infrastructure Planning
• Project Tendering Process
• Increasing transparency and comparability across projects

Facilitating Equity and Debt Financing Conditions

Promoting Renewable Energy Supply Investments

Building the capabilities of regulatory authorities
Thank You