



ERRA, October 10TH 2018

Regulatory Approach to Maintain Security of Supply in Saudi Arabia

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Electricity System at Glance - 2018

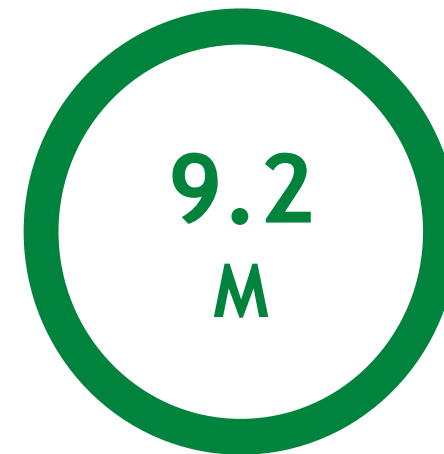
Trans. Network



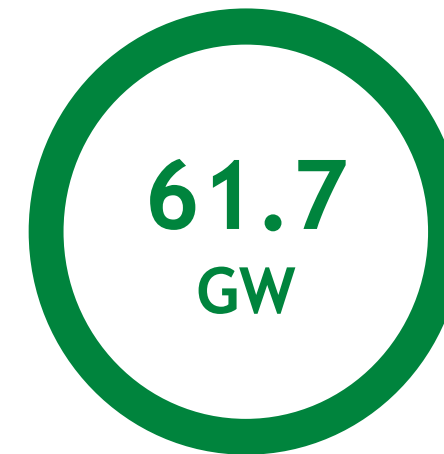
Dist. Network



Consumers #



Peak Load

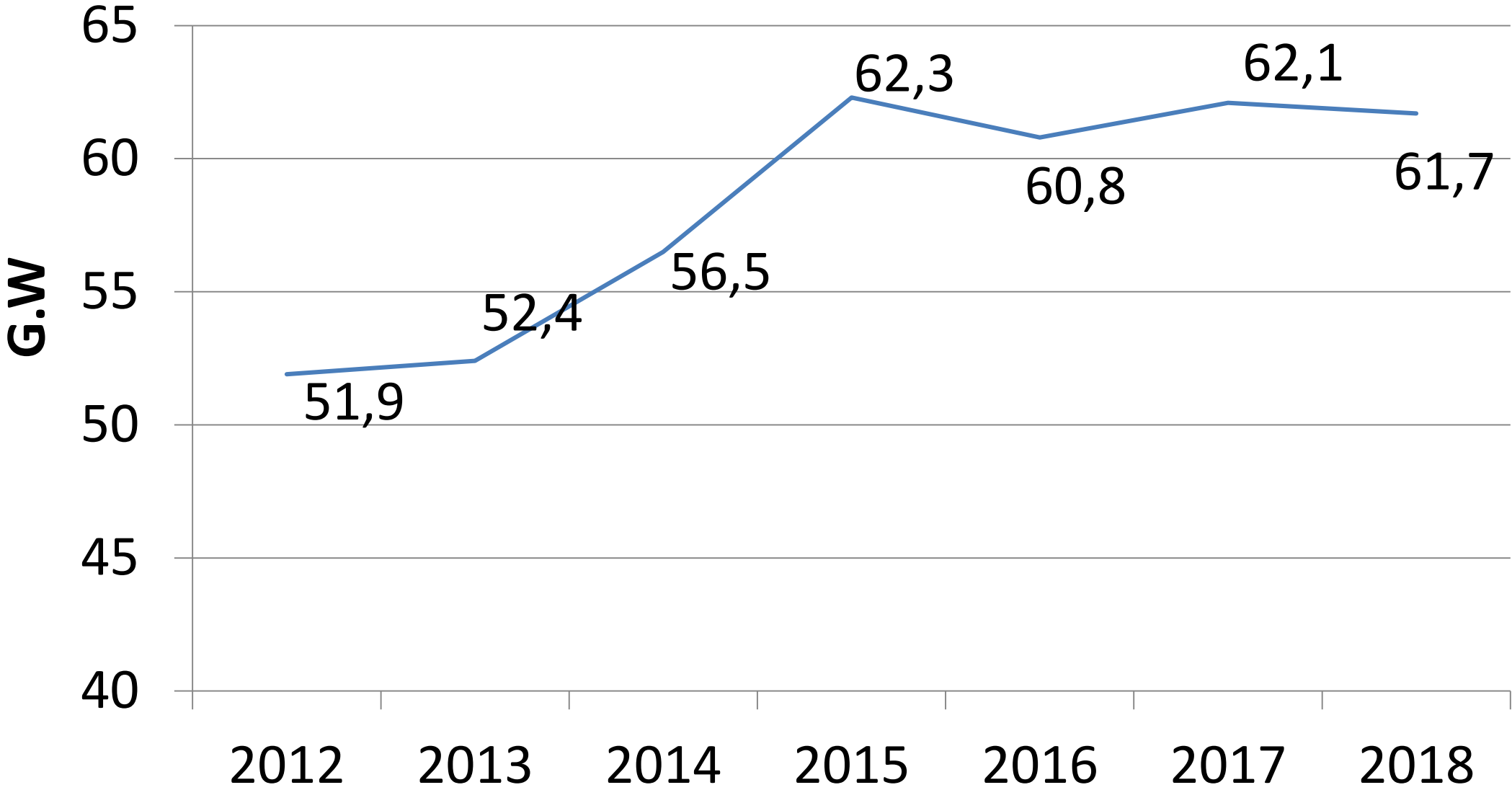


- Electricity demand in KSA has been growing significantly over the last years
- Major investments are needed
- Low energy prices that do not encourage investments

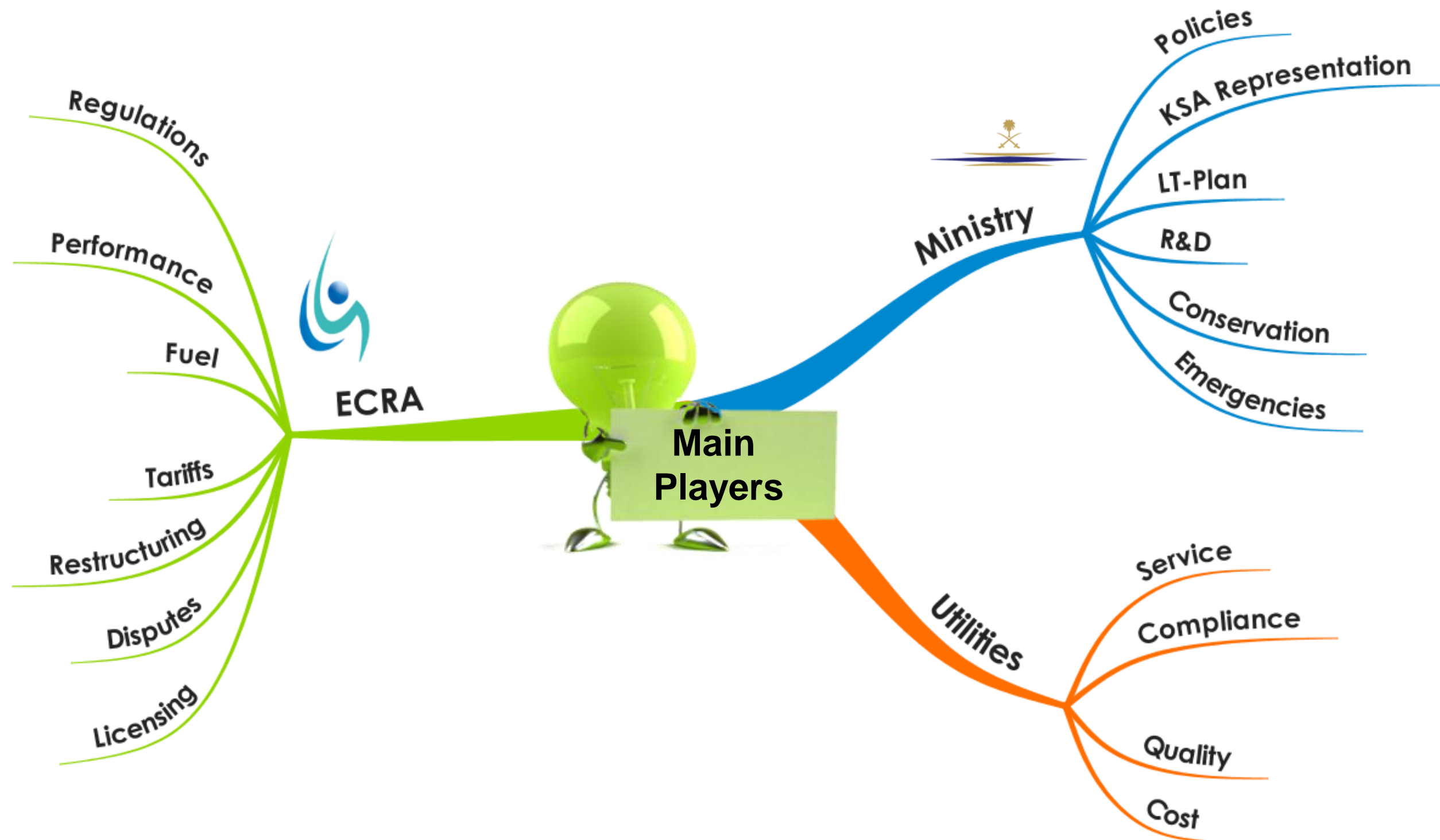
Peak Load



Peak Load in KSA



KSA Electricity Industry Main Players



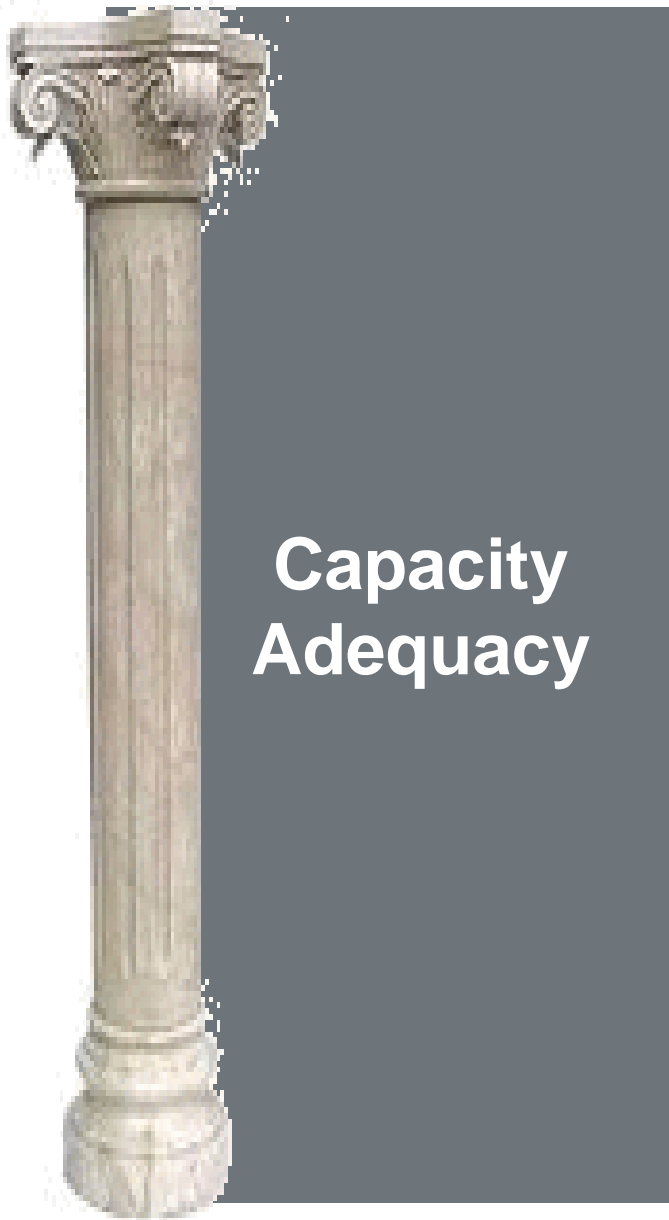
Security of Supply

Initiatives



Policies and Regulatory Framework

Security of Supply Initiatives



Integrated Resource Plan (IRP)

- Meeting forecasted annual peak and energy demand .
- Established reserve margin, through a combination of supply-side and demand-side resources
- 25 years plan

Generation Mix

- Technology diversification
- Target (9.5 GW by 2023)
- Utility scale RES auctions

Interconnection

- National
- Regional

Security of Supply Initiatives



Planning and Standards

Capability Statements

- Description of the current and future power system
- Presents the 5 and 10 years system plan
- The ability to evaluate the projects

DSM

- Implement a cost-effective portfolio of five DSM programs
- Establishing a National ESCO

Network SoS Criteria

- Defined capacity demand groups and repair time
- Contingency and network planning

Security of Supply Initiatives



Gen Planning Criteria

- Reserve margin (10 to 15%).
- Loss of Load Expectation
- Cost vs. risk

Technical Codes

- Developed Saudi Grid and Dist codes
- Technical rules to enable renewable integrations

Security of Supply Initiatives



Consumer Empowerment

Small Scale Solar PV Regulation

- Net Billing scheme
- Allow consumers to install PV

Smart Meters & Smart Grids

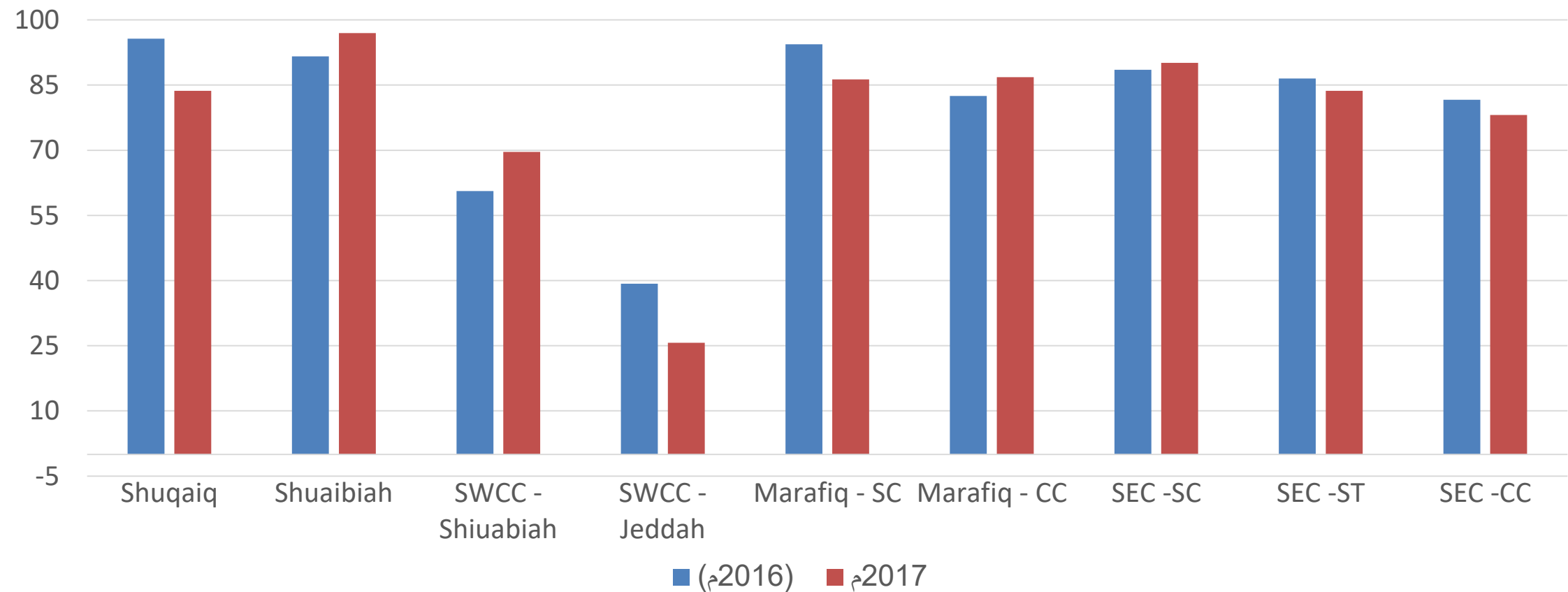
- Minimum functional requirements
- Smart Grid applications on transmission and distribution

Security of Supply Initiatives

Key Performance Indicators

- KPIs adopted (2009)
- Considering SOS aspects including
 - ✓ Plant Availability %
 - ✓ Forced & Planned Outage Rates

Availability Factor %



Performance Monitoring

Conclusion



- **The SoS regulatory framework provides appropriate system capabilities to maintain normal supply to consumers.**
- **The Regulator is responsible to ensure that the regulatory environment promotes consumers benefiting from an efficient level of reliability.**
- **The cost of providing SoS should be appropriately traded off against the costs and risks associated with a loss of supply.**

