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## PART 1: EXECUTIVE SUMMARY

This section will provide the key findings of the report. It will highlight the past trends in operational and financial performance of TSOs across the globe. It will also present the expected trends in network expansion of TSOs over the next five years.

## PART 2: RECENT TRENDS AND DEVELOPMENTS

The power transmission industry has witnessed significant developments over the past few years, which are impacting the operational and financial state of the TSOs. This section will capture recent changes in regulatory and policy regimes, trends in technology adoption by TSOs, and key market developments such as consolidation, new entrants, mergers and acquisitions, and new financing options available for project execution.

- 2.1 Regulatory and policy developments
- 2.2 Trends in technology adoption by TSOs
- 2.3 Market developments
- 2.4 New financing options and models

## PART 3: EXPECTED GROWTH AND INVESTMENT

This section will review the network expansion and modernisation plans of TSOs as well as analyse the capital expenditure programmes of TSOs across the globe.

- 3.1 Review of the network expansion and modernisation plans
- 3.2 Expected investment or capex by TSOs

## PART 4: INTER-TSO COMPARISON: SIZE AND THE EXPECTED GROWTH

This section will give a comparison of the past growth in the network and capex of key TSOs across the globe. It will also present the expected trends in network expansion and planned investments of these TSOs.

- 4.1 Overview
- 4.2 Growth in the transmission network, 2014-18
  - ❖ Line length
  - ❖ Substation capacity
  - ❖ Number of substations/transformers
- 4.3 Trends in capital expenditure, 2014-18
- 4.4 Expected trends in network expansion, 2019-23
- 4.5 Expected investment/capex, 2019-23

## PART 5: INTER-TSO COMPARISON: BENCHMARKING ANALYSIS

This section will provide a comparison of the operational and financial performance of key TSOs across the globe.

Operational performance indicators will include the annual transmitted electricity, total unserved power transmission per year, average interruption time, TSAIDI, TSAIFI, network availability, transmission losses, transmission line fault level, transformer failure rate, duration for fault settlement, voltage deviation index and frequency deviation index.

Financial indicators will include return on equity ratio, profit/revenue ratio, revenue/employee ratio, operating expenses/revenue ratio and operating expenses/employee ratio.

- 6.1 Overview
- 6.2 Operational performance
- 6.3 Financial performance

## PART 6: INTER-TSO COMPARISON BY REGION

This section will contain a comparison of the past growth in network and capex as well as operational and financial performance of TSOs by region. It will also give a comparative analysis of future trends in the network expansion and the expected investment of TSOs in each region.

- 6.1 North America
  - 6.1.1 Overview
  - 6.1.2 Growth in the transmission network, 2014-18
  - 6.1.3 Capital expenditure, 2014-18
  - 6.1.4 Operational performance, 2014-18
  - 6.1.5 Financial performance, 2014-18
  - 6.1.6 Expected trends in the network expansion, 2019-23
  - 6.1.7 Expected investment, 2019-23
- 6.2 Latin America
  - 6.2.1 Overview
  - 6.2.2 Growth in the transmission network, 2014-18
  - 6.2.3 Capital expenditure, 2014-18
  - 6.2.4 Operational performance, 2014-18
  - 6.2.5 Financial performance, 2014-18
  - 6.2.6 Expected trends in the network expansion, 2019-23
  - 6.2.7 Expected investment, 2019-23
- 6.3 Asia
  - 6.3.1 Overview
  - 6.3.2 Growth in the transmission network, 2014-18
  - 6.3.3 Capital expenditure, 2014-18
  - 6.3.4 Operational performance, 2014-18
  - 6.3.5 Financial performance, 2014-18
  - 6.3.6 Expected trends in the network expansion, 2019-23
  - 6.3.7 Expected investment, 2019-23
- 6.4 Europe
  - 6.4.1 Overview
  - 6.4.2 Growth in the transmission network, 2014-18
  - 6.4.3 Capital expenditure, 2014-18
  - 6.4.4 Operational performance, 2014-18
  - 6.4.5 Financial performance, 2014-18
  - 6.4.6 Expected trends in the network expansion, 2019-23
  - 6.4.7 Expected investment, 2019-23

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- 6.5 Middle East
  - 6.5.1 Overview
  - 6.5.2 Growth in the transmission network, 2014-18
  - 6.5.3 Capital expenditure, 2014-18
  - 6.5.4 Operational performance, 2014-18
  - 6.5.5 Financial performance, 2014-18
  - 6.5.6 Expected trends in the network expansion, 2019-23
  - 6.5.7 Expected investment, 2019-23
- 6.6 Africa
  - 6.6.1 Overview
  - 6.6.2 Growth in the transmission network, 2014-18
  - 6.6.3 Capital expenditure, 2014-18
  - 6.6.4 Operational performance, 2014-18
  - 6.6.5 Financial performance, 2014-18
  - 6.6.6 Expected trends in the network expansion, 2019-23
  - 6.6.7 Expected investment, 2019-23

## **PART 7: TSO PROFILES BY REGION AND COUNTRY (IN AN EXCEL DATABASE)**

This section of the report will profile about 220 TSOs across the globe. For each TSO, historical data will be provided on the network size, operational and financial performance, and capital expenditure. It will also capture the expected trends in network expansion and planned investment in their grids. A list of recent contract awards by TSOs will also be provided. The section will also give key contact details for each TSO.

- 7.1 Leading TSOs in North America (~ 50 TSOs)
- 7.2 Leading TSOs in Latin America (~ 45 TSOs)
- 7.3 Leading TSOs in Asia (~ 50 TSOs)
- 7.4 Leading TSOs in Europe (~ 45 TSOs)
- 7.5 Leading TSOs in the Middle East (~ 10 TSOs)
- 7.6 Leading TSOs in Africa (~ 20 TSOs)

Notes:

Each TSO profile will have:

- ❖ Key facts
- ❖ Growth in the transmission network, 2014-18
  - Line length by voltage
  - Substation capacity by voltage
  - Number of substations/transformers by voltage
- ❖ Operational performance indicators, 2014-18
- ❖ Financial performance indicators, 2014-18
- ❖ Future plans and investment
  - Expected trends in the network expansion, 2019-23
  - Expected investment, 2019-23
- ❖ Recent contract awards
- ❖ Key contacts

Operational performance indicators will include:

- ❖ Annual transmitted electricity
- ❖ Total unserved power transmission per year
- ❖ Average interruption time
- ❖ TSAIDI
- ❖ TSAIFI
- ❖ Network availability
- ❖ Transmission losses
- ❖ Transmission line fault level
- ❖ Transformer failure rate
- ❖ Duration for fault settlement
- ❖ Voltage deviation index
- ❖ Frequency deviation index

Financial performance indicators will include:

- ❖ Revenues/sales
- ❖ Profits/losses
- ❖ Capital expenditure
- ❖ Operational expenditure
- ❖ Return on equity ratio
- ❖ Debt to equity ratio
- ❖ Profit/revenue ratio
- ❖ Revenue/employee ratio
- ❖ Operating expenses/revenue ratio
- ❖ Operating expenses/employee ratio

## **PART 8: APPENDIX**

- 8.1 Sources and methodology
- 8.2 List of acronyms
- 8.3 Key definitions