



Power Technology Research

Power Transformers Market Overview

Saqib Saeed, *Principal Analyst*
Transmission & Distribution Equipment

Presented at:

CWIEME ISTANBUL

3rd Nov 2017

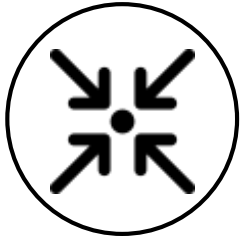


Agenda

- PTR Company Overview
- Global Market Overview
- Market Sizing & Trends
 - Europe
 - North America
 - GCC
 - Turkey
- Supply-Demand Situation

Power Technology Research

Who Are We



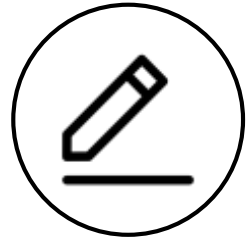
Focus on Power and Industrial markets.

Customers are component manufacturers,
OEMs, distributors, energy-focused EPCs.



25 years of combined
experience.

Syndicated and custom
research.



Type of Work

What Can We Do to Support Our Customers





Large Power Transformers

We consider 100kV+, >60MVA as LPTs

LPTs Market Analysis

Why Separate Power Transformers from Distribution Transformers



A globally traded product

- Demand impacts the supply beyond regional boundaries



Long lead times

- A custom designed equipment



Highest efficiency requirements



Special raw materials

- Electrical Steel and its impact on the prices

Global Market Situation

Global Market Overview - Asia

Indonesia emerging as largest market After India & China

- India and China to stay largest markets
 - 292 GVA of new substations capacity in India
 - 30GW wind, 60GW solar by 2020 in China
 - Indonesia large and dynamic market
 - 500 generation and transmission projects till 2025
 - Qatar and UAE seeing a lot of movement
 - World Cup in Qatar
 - Expo 2020 in Dubai
- 
- A world map with the Asian continent highlighted in a light green color. The rest of the world is shown in a light gray color. The map is positioned in the background of the text.

Global Market Overview - Africa

Year on year growth expected in African market

- South Africa still the largest market
 - Delayed start of transmission projects
- Nigeria getting funding for existing projects
- Focus of all tier-1 players shifting to Africa
 - New manufacturing units in the region
 - Agreements with governments
- China plans to invest in African utilities
 - Strong edge for Chinese manufacturers



Significant Markets Globally

Markets to Keep an Eye on in the Coming Years

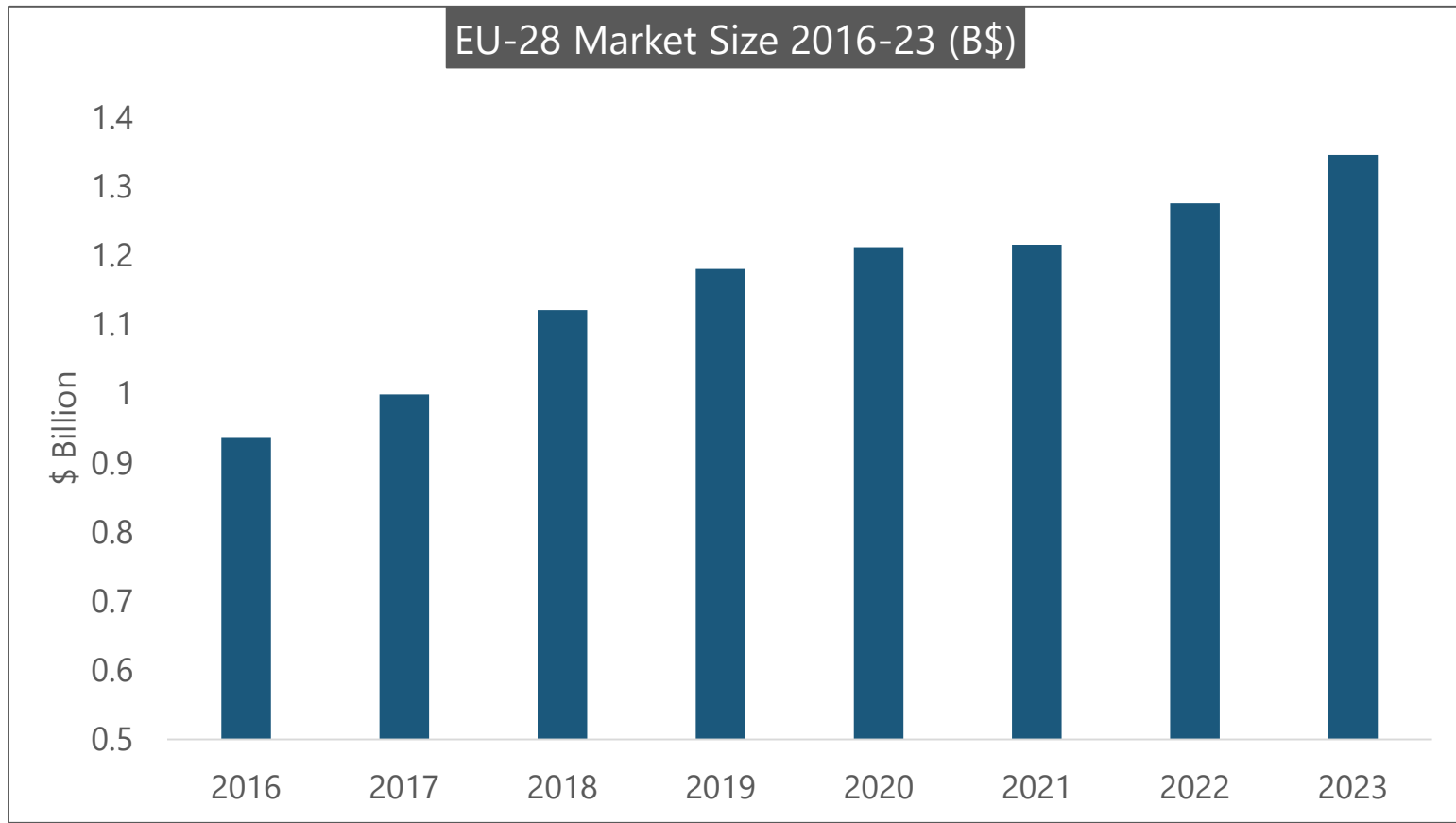


EU-28 Market

28 Countries Currently in European Union

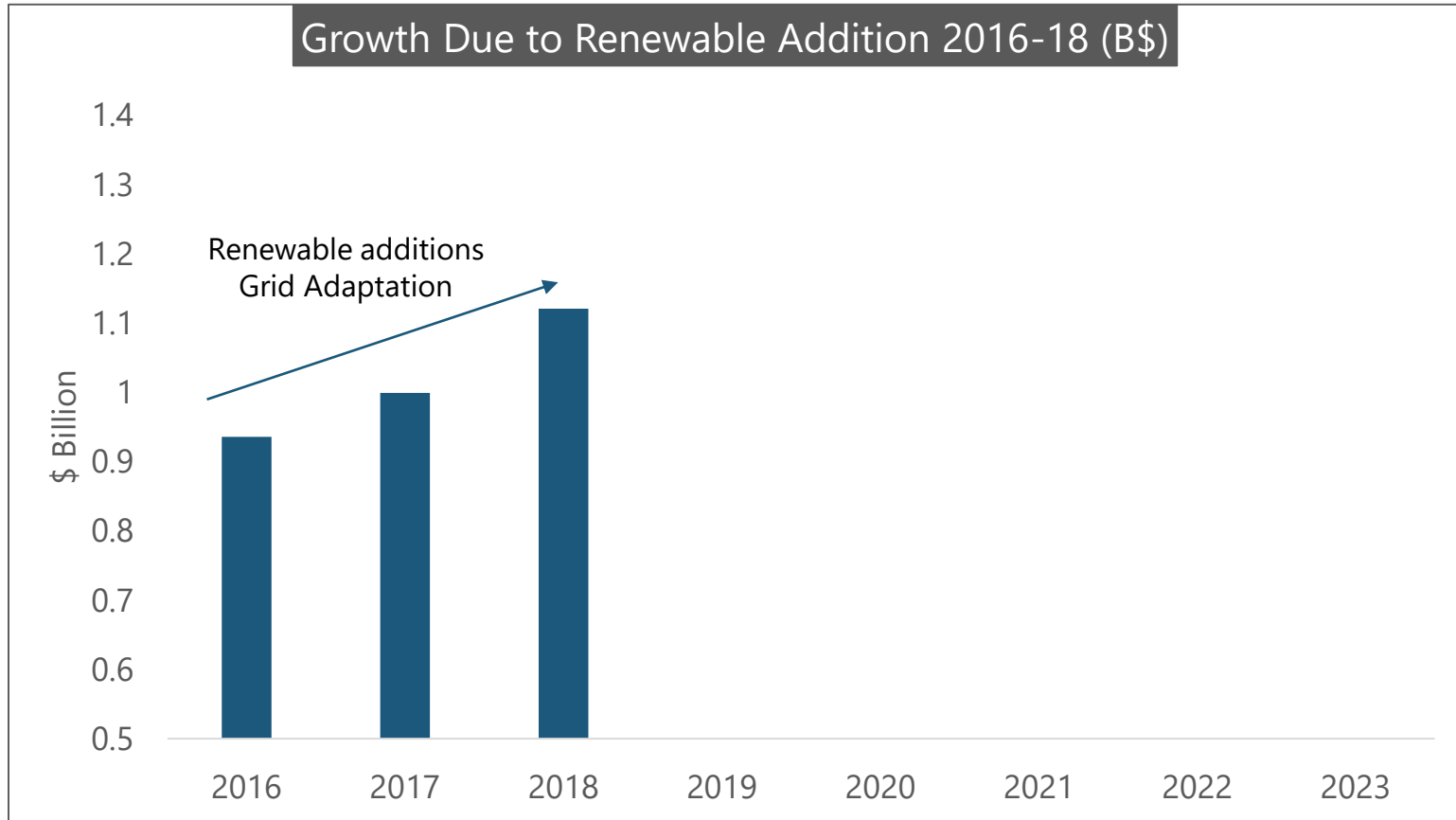
EU-28 Market - Annual Revenue

EU-28 Market Experiencing a Steady Growth



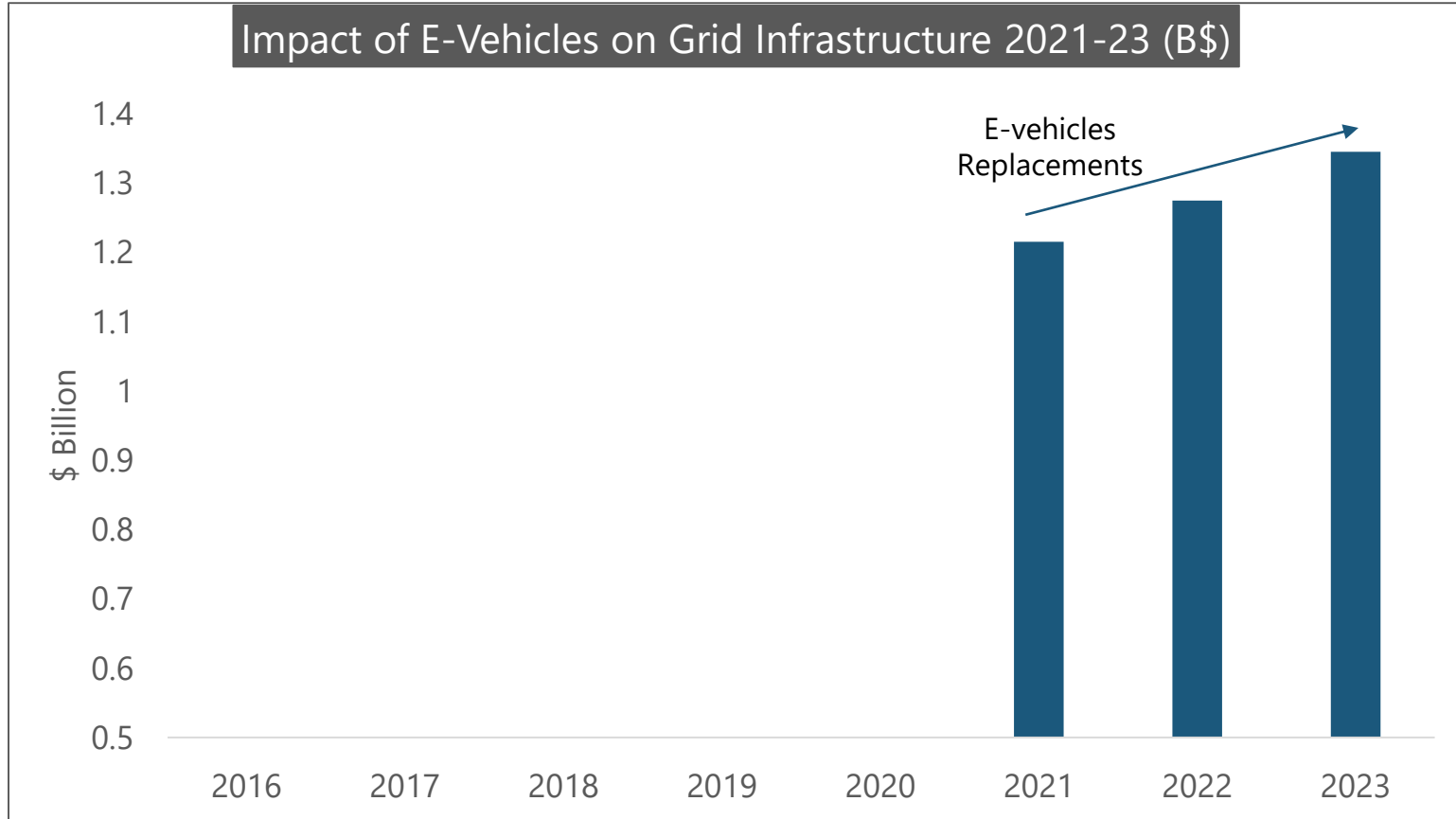
EU-28 Market - Annual Revenue

Renewable Capacity Addition is Driving Growth at the Moment



EU-28 Market - Annual Revenue

E-Vehicle Infrastructure to Impact the Grid Beyond 2020





EU 28 Market – Market Drivers

Renewable Additions and Grid Adaptation Key Market Drivers

- New additions more than the replacements
 - Central European countries saw 6% annual increase in 2017
- Grid adaptation and renewable generation
 - Onshore and offshore wind power projects
- At the moment growth is driven by units
 - Prices have gone down 2016 onwards
 - From 2014 to 2016, growth because of price increase
- E-vehicles
 - Impact on certain grids is still an unknown factor

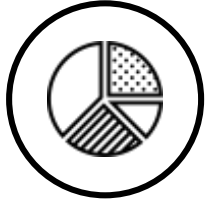


E-vehicles – UK an example grid

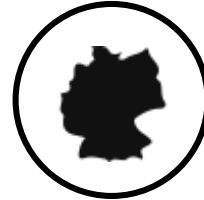
- Penetration of EVs is expected to impact T&D market
- Peak demand could reach 8GW in UK only in 2030
- Demand side management
- Power quality equipment market
- Strengthening of distribution network

EU 28 Market – Key Trends

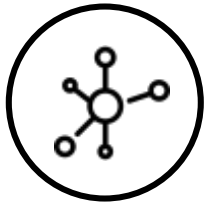
Interconnected Grids and Digital Substations to Affect the Market



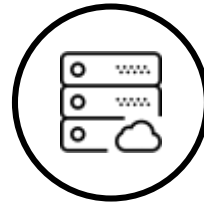
Tier-1 players dominating the market



Germany to be the biggest market 2017-23



Interconnected grids



Digitalization of Substations



Asset Health Monitoring to increase



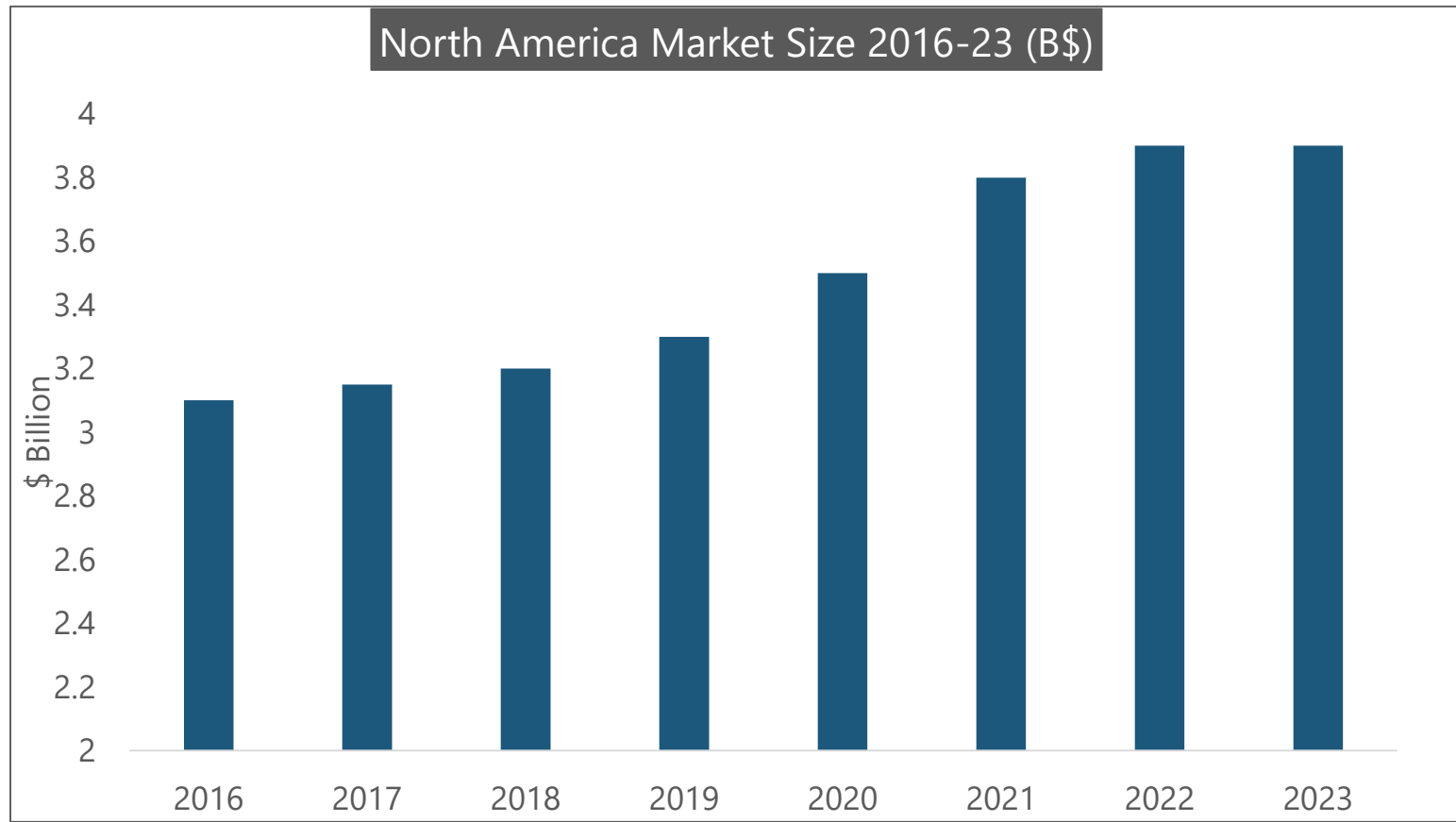
North America Market

United States & Canada Market Assessment



Annual Power Transformer Revenue

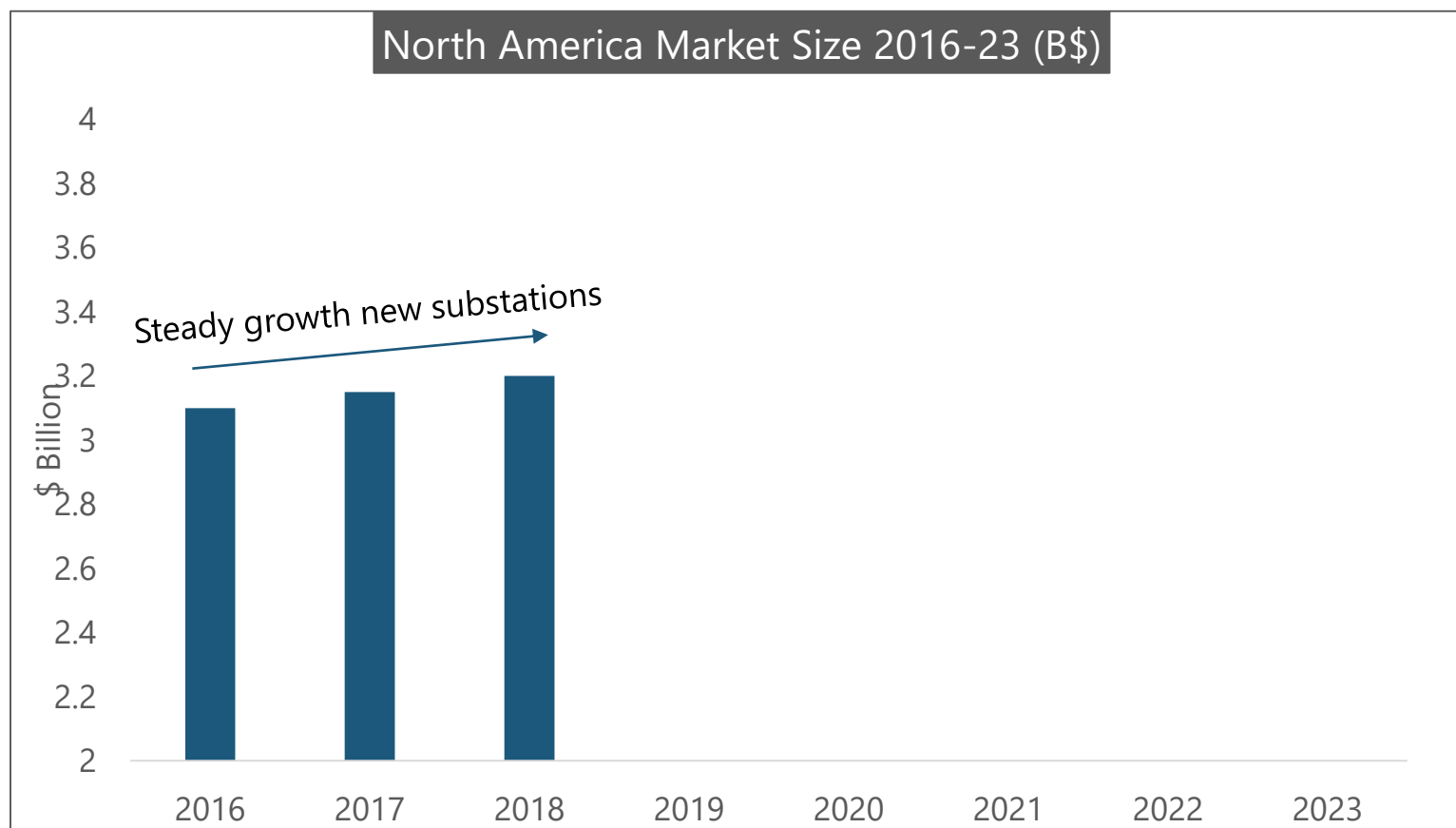
US and Canada Market to See a Slight Growth Beyond 2019





Annual Power Transformer Revenue

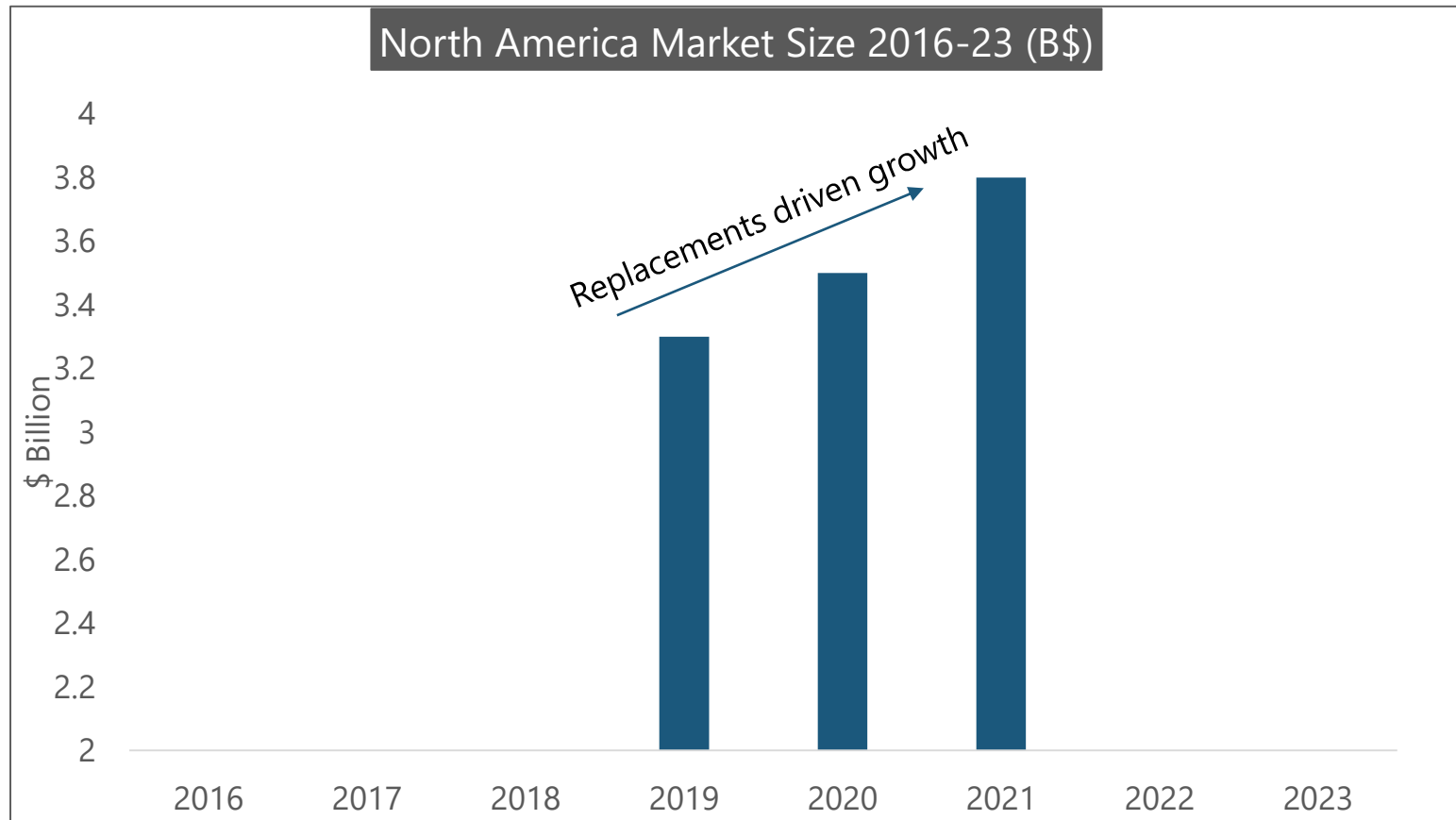
US and Canada Market to See a Slight Growth Beyond 2019





Annual Power Transformer Revenue

US and Canada Market to See a Slight Growth Beyond 2019



North American Market – Key Trends

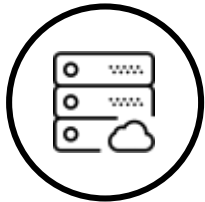
Digital Substations and Asset Health Monitoring to Increase



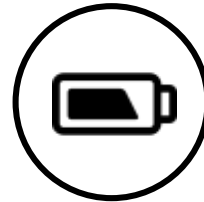
High Pure-EPC
Involvement in
Turnkey Projects



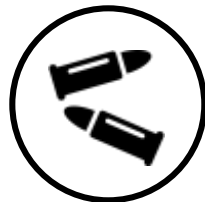
Asset Health
Monitoring to
increase



Digitalization
of Substations



Back up reserves
at Utility and
Industrial Scale



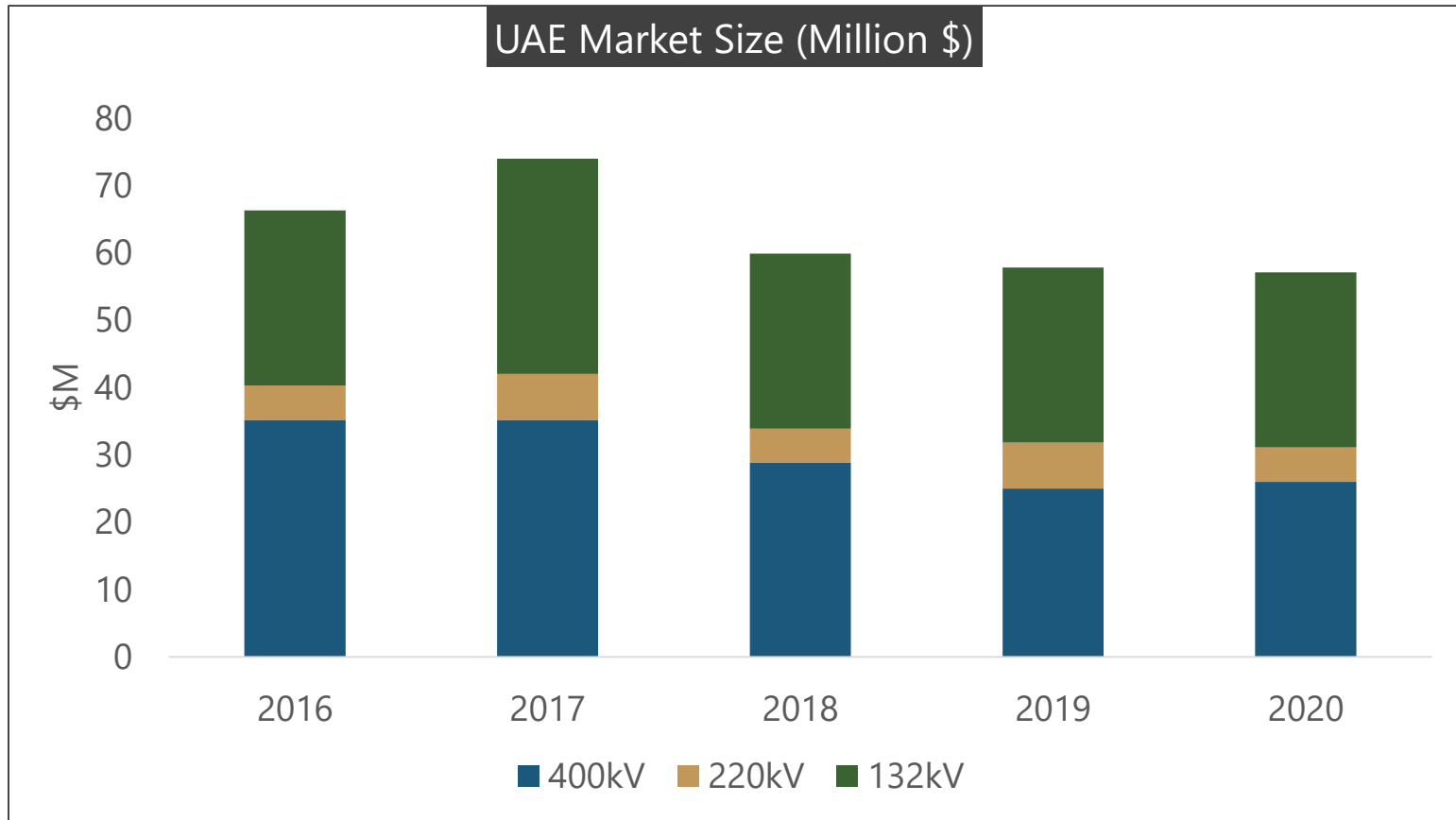
Physical
protection of
Transformers



Utilities investing in
bushing monitoring
solutions

GCC Market

UAE Market Size (2016-2020)



UAE Market – Key Trends

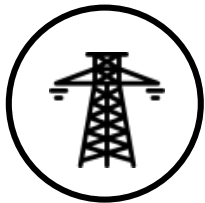
Regional interconnections and investment in EHV network



Emirates national
grid and GCC
interconnections



Asset Health
Monitoring to
increase

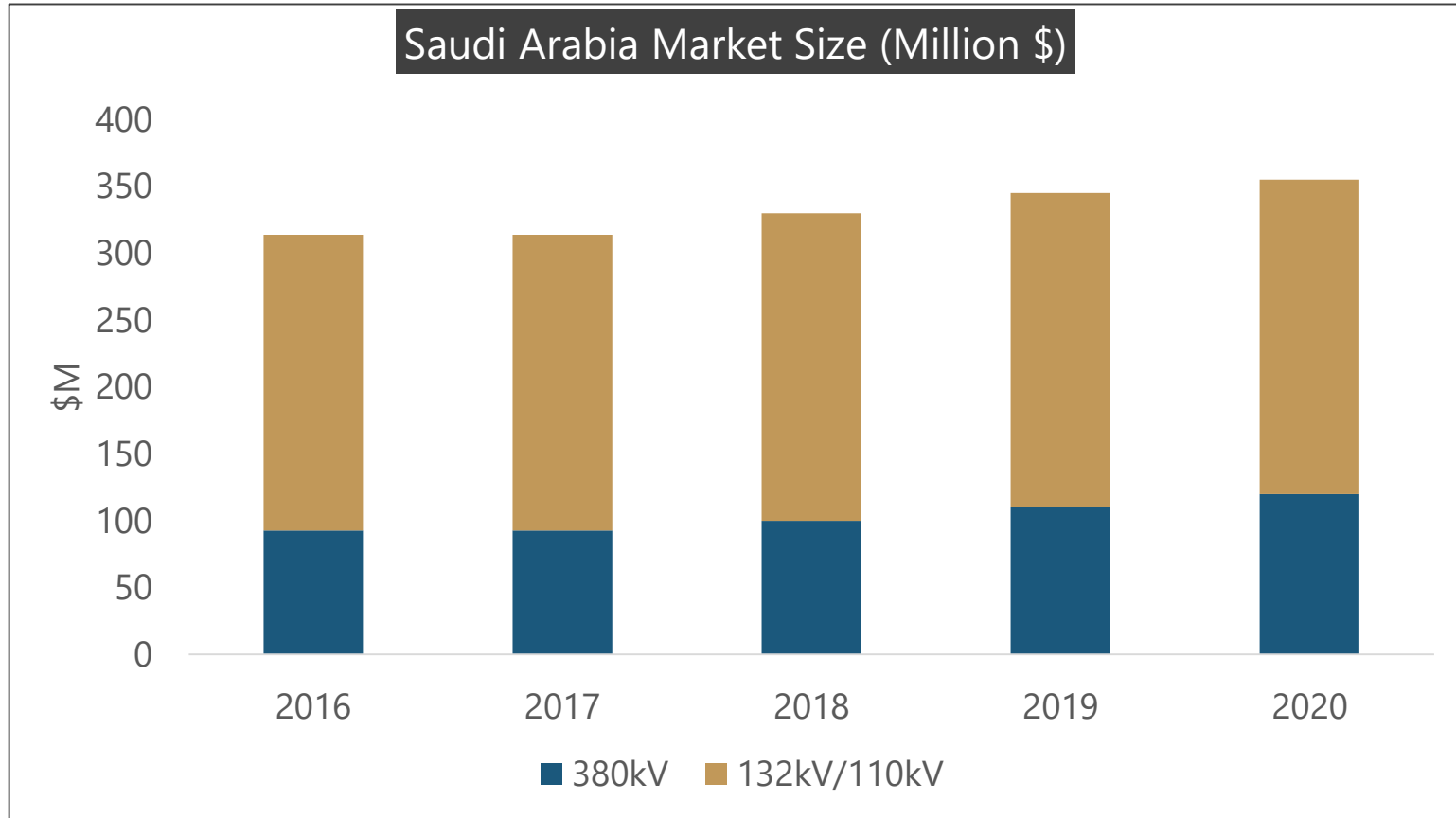


Strengthening
of EHV network



Evacuation of
generation from
West to Eastern
parts

Saudi Arabia Market Size (2016-2020)



Saudi Arabia Market– Key Trends

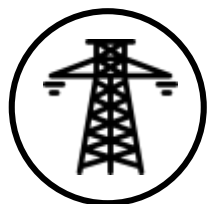
Regional interconnections and investment in EHV network



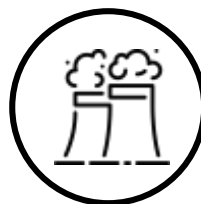
Regional interconnections including Egypt and GCC



T&D infrastructure for new cities



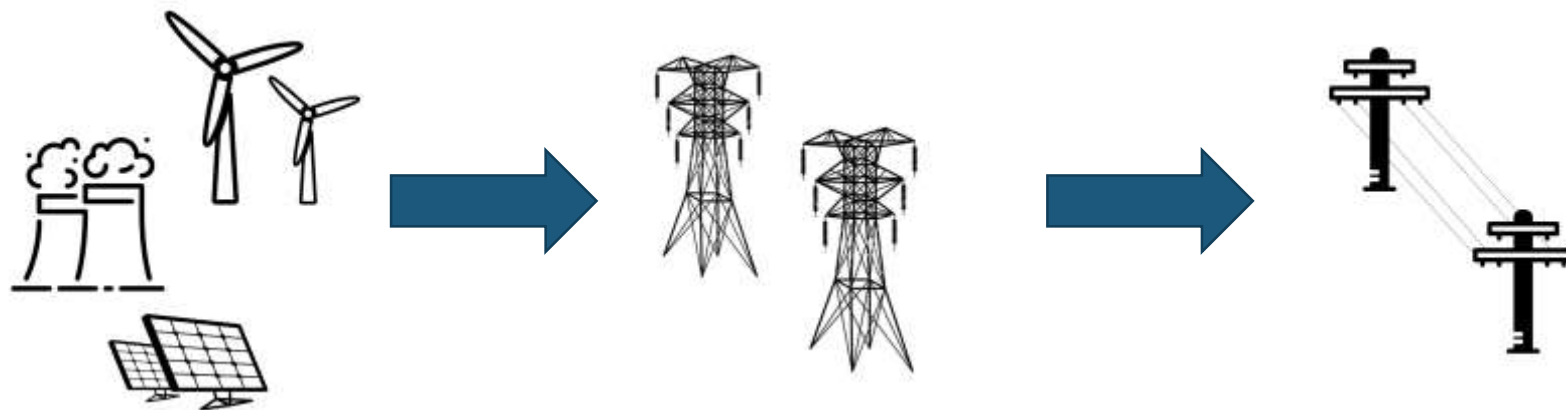
Long distance interconnections within the country



Fossil fuel based generation capacity additions

Turkish Market

Turkish Transmission Network



77 GW (2016)

75% Private

Net: 258 TWh

400kV, 154kV

2% losses

TEIAS

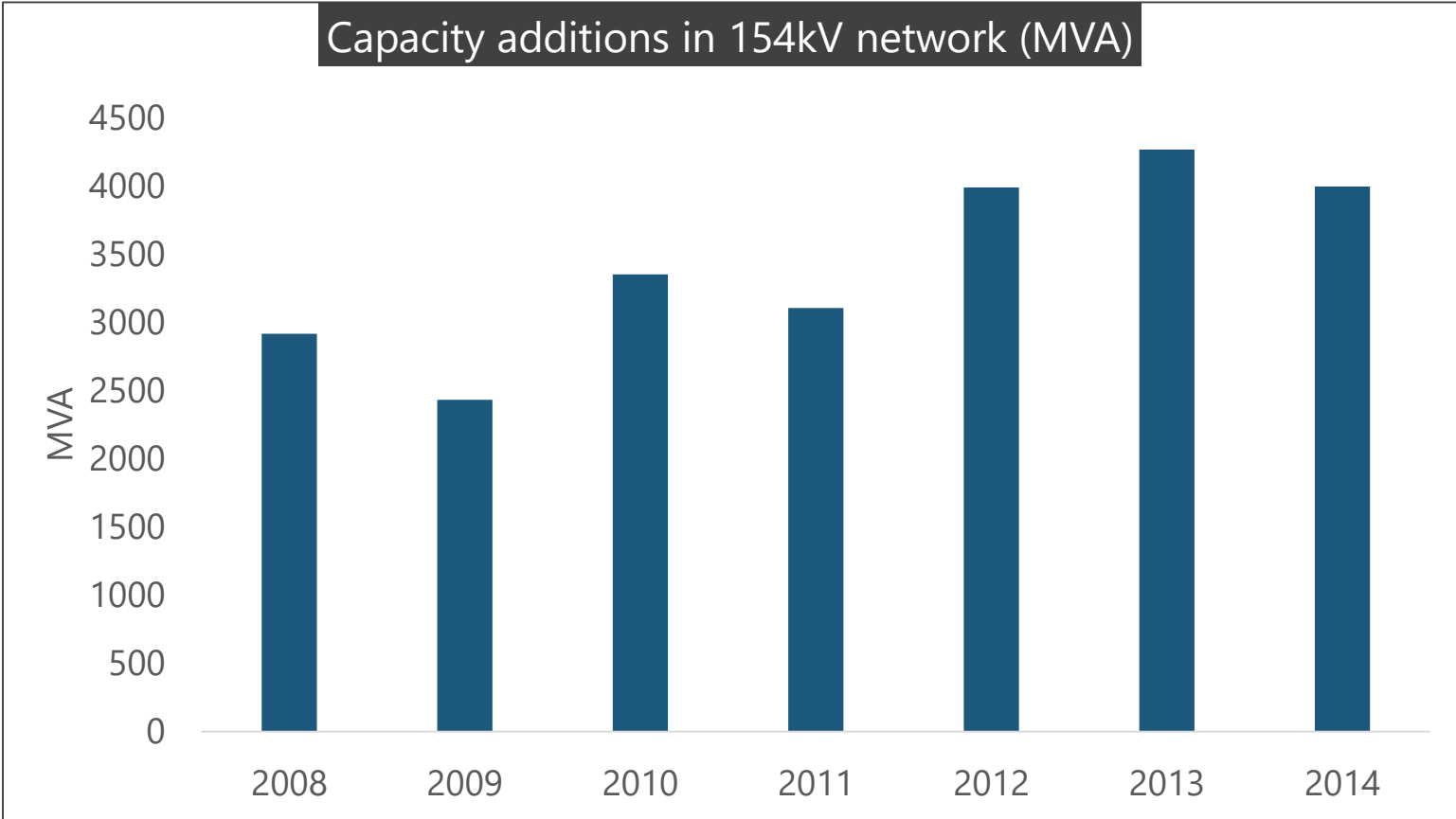
912,551 km

14% loss

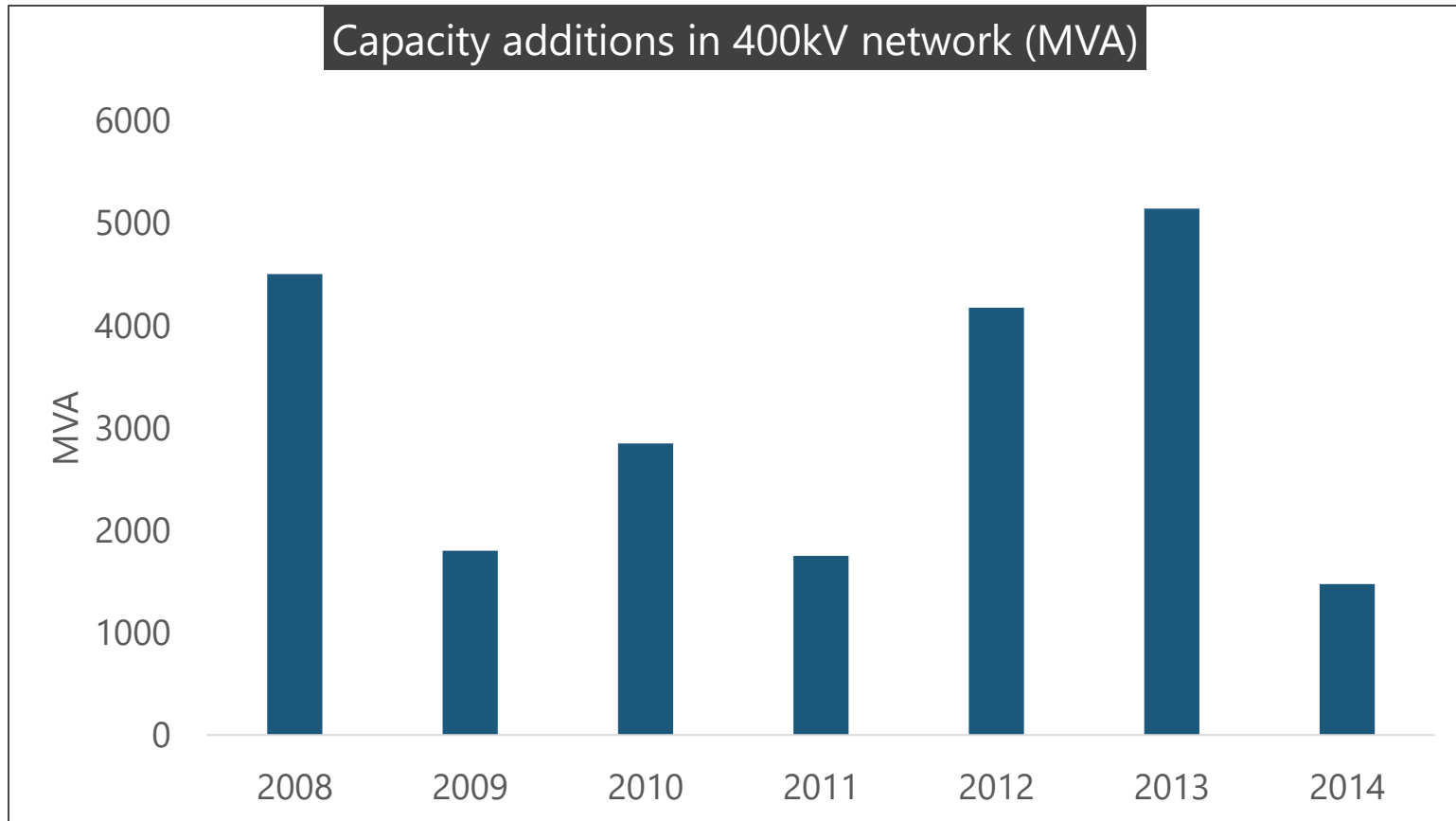
21 companies



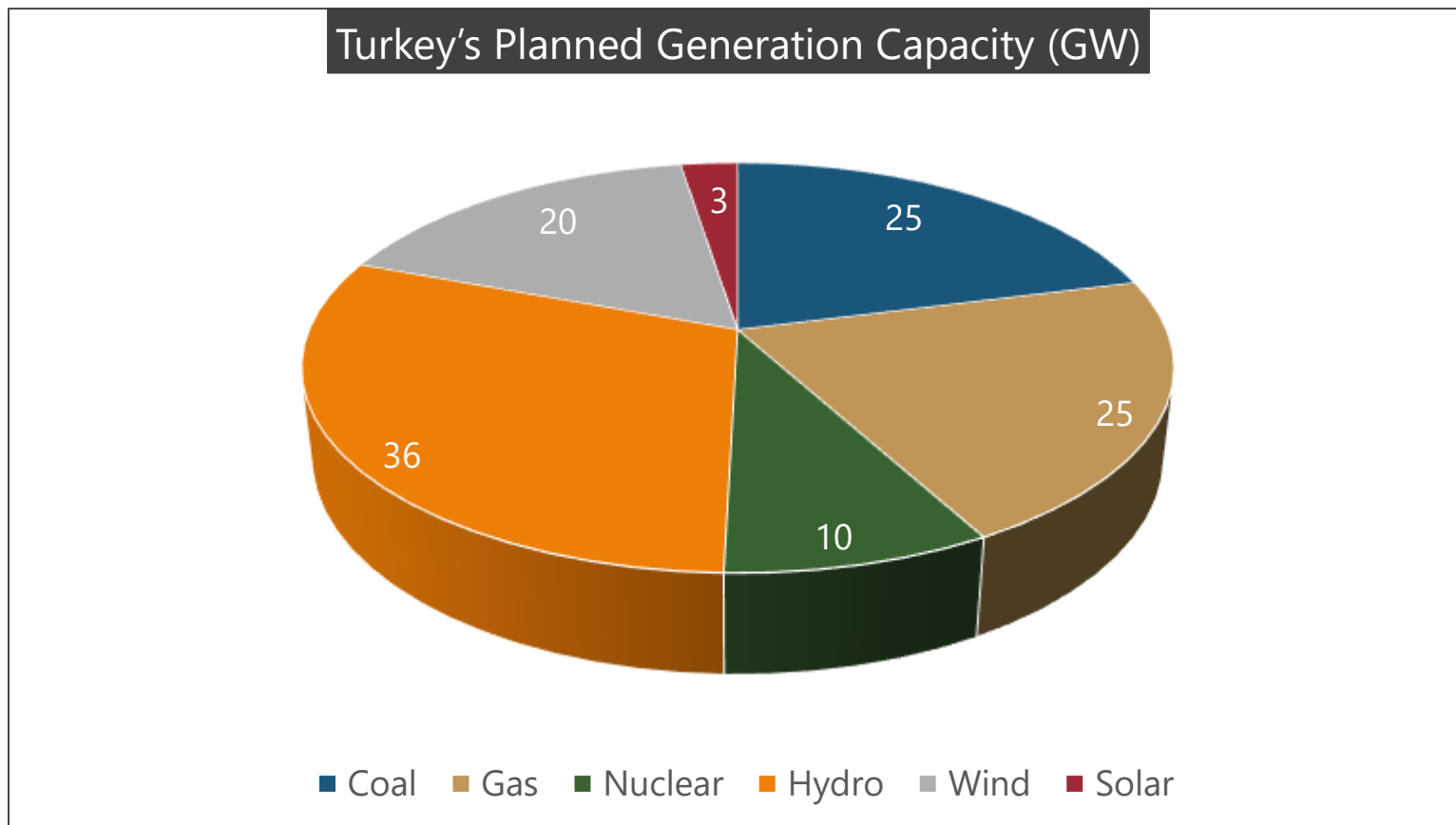
Turkish 154kV Network Expansion (2008-2014)



Turkish 400kV Network Expansion (2008-2014)

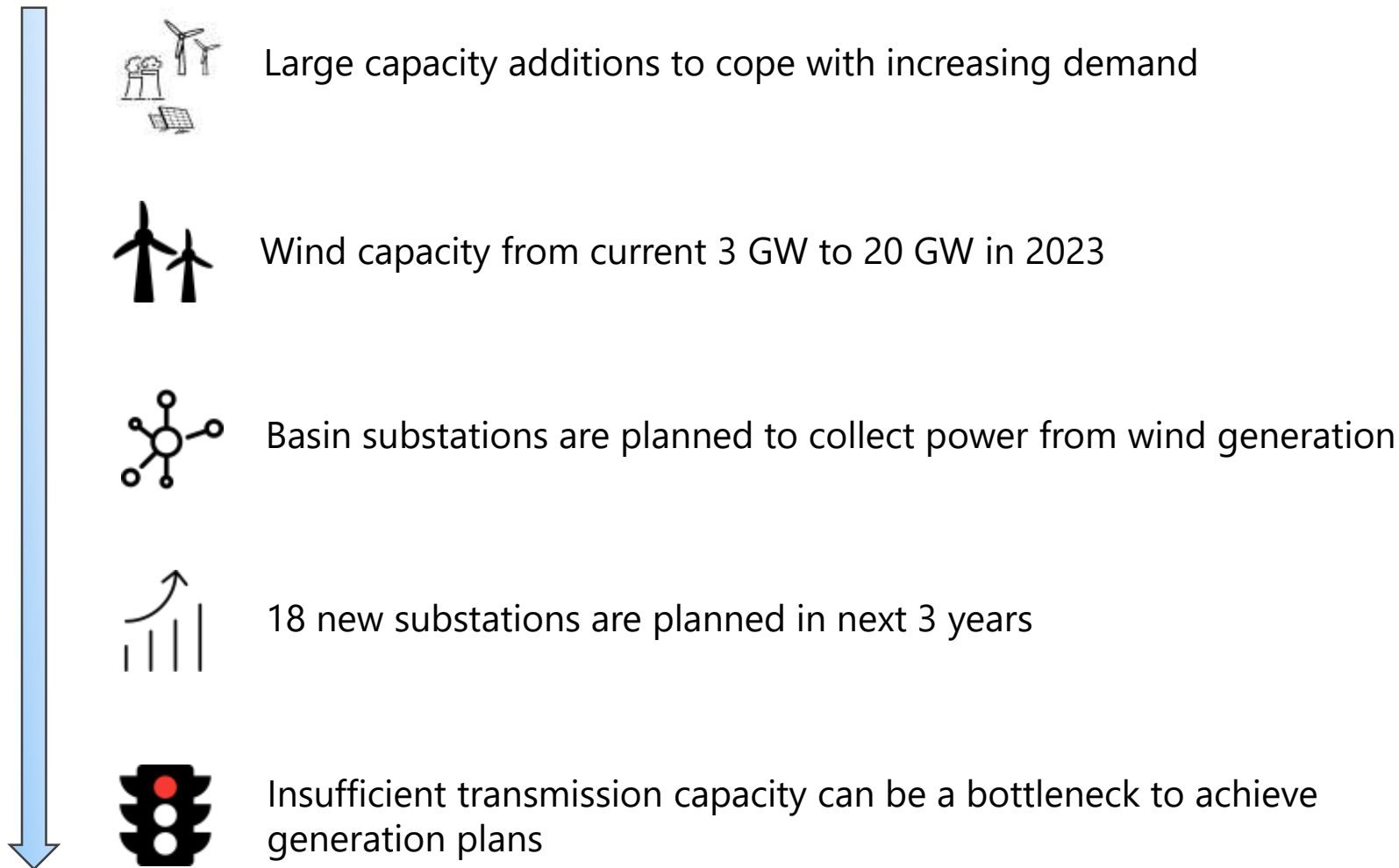


Turkey's Generation Plan (2023)



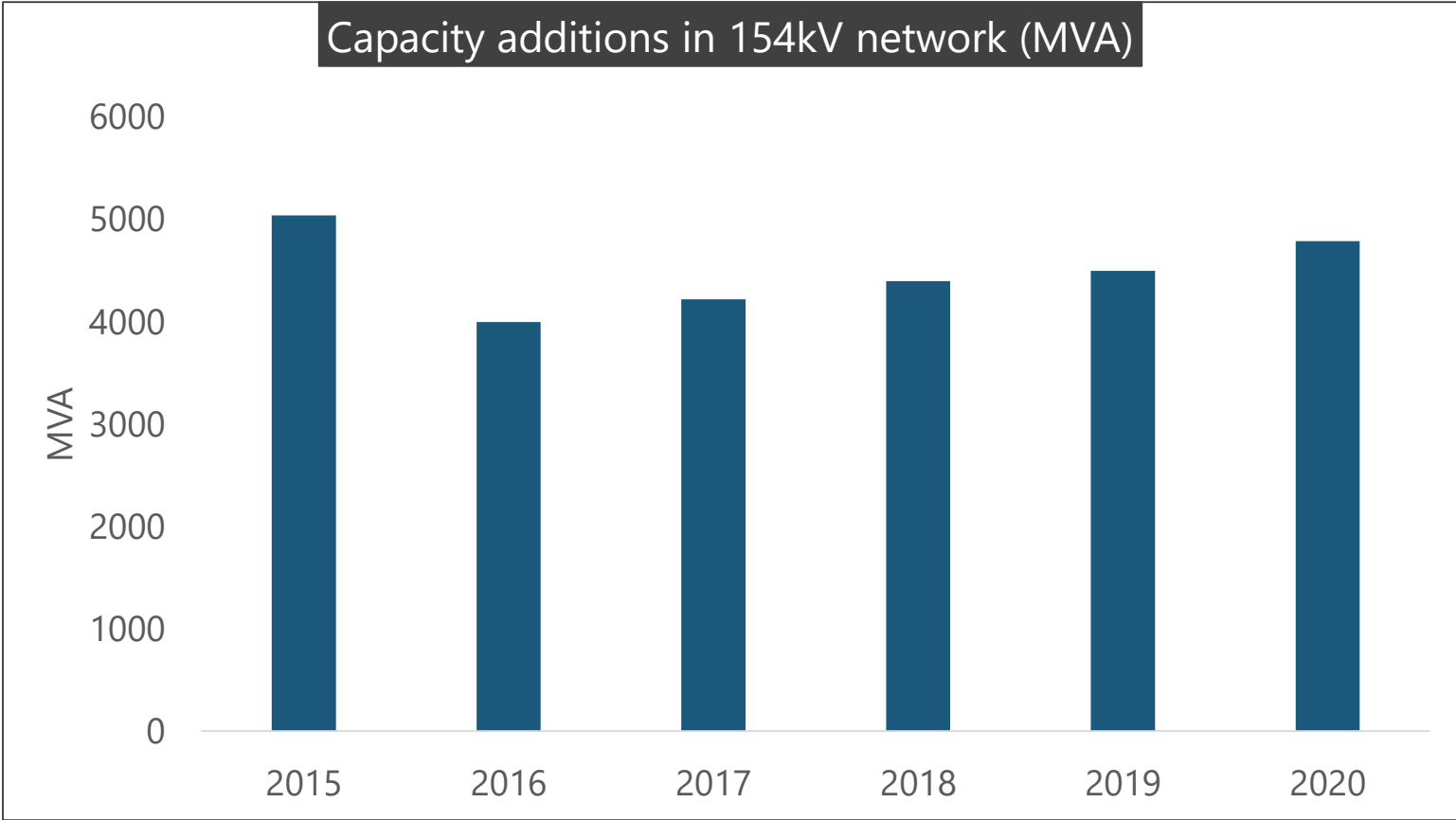
Impact on Grid Development

Aggressive growth driven by wind generation plans

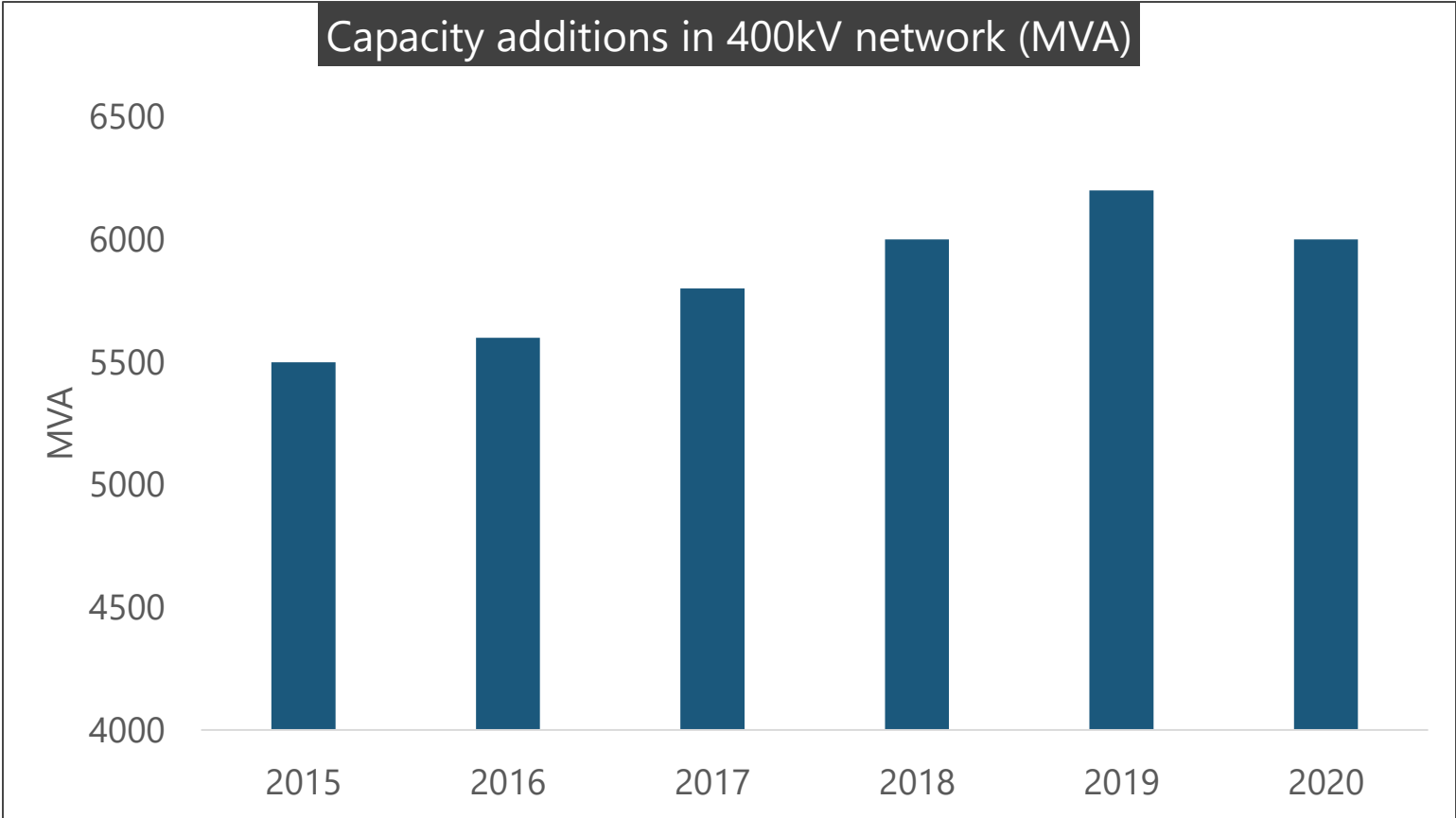




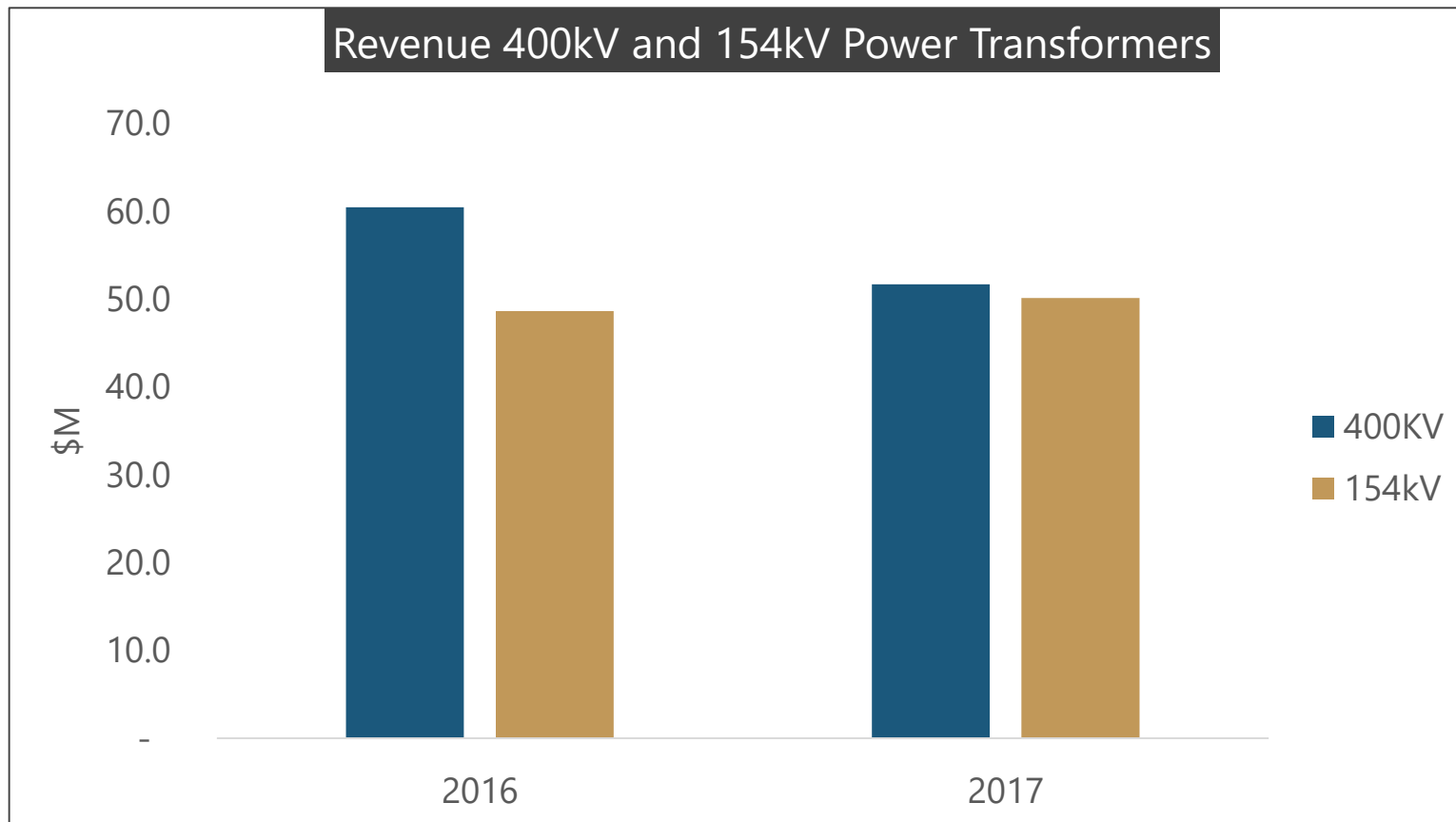
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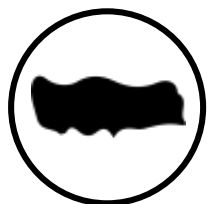


Investments in Power Transformers

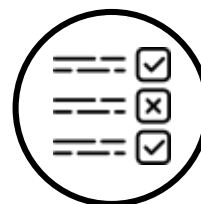


Turkish Market – Key Trends

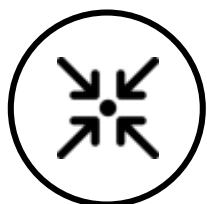
Wind power and Digital Substations to Affect the Market



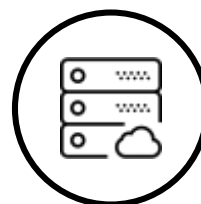
Heavy reliance on local products



Strict grid codes



Focus on grid's weak points



Digitalization of Substations



Asset Health Monitoring to increase

Supply Side Analysis



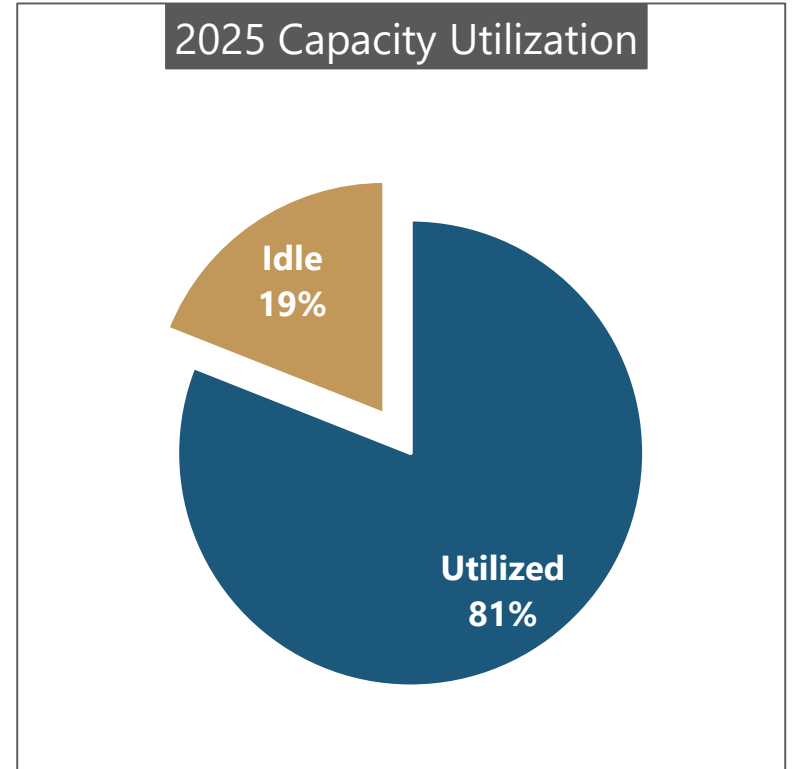
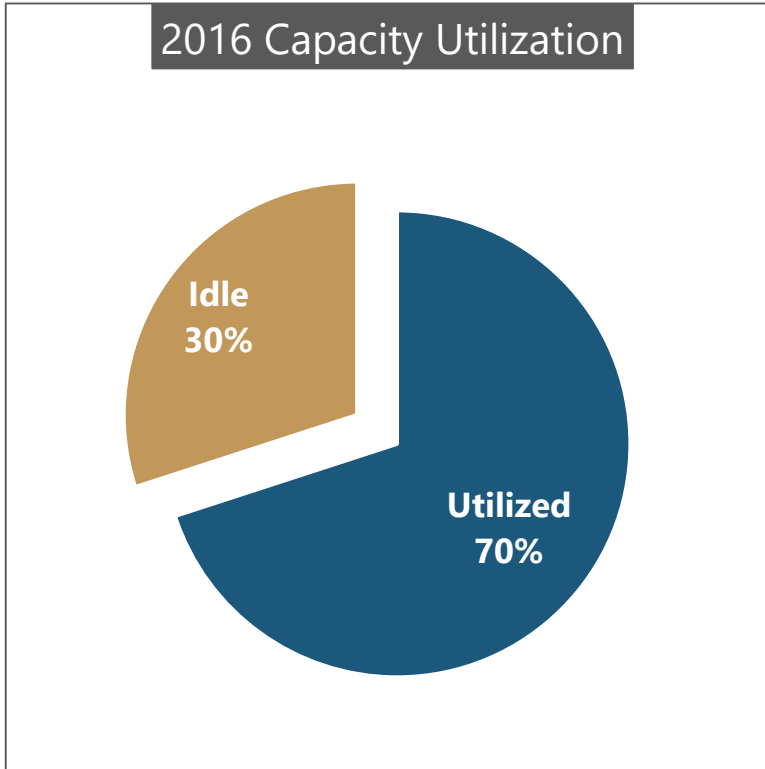
Supply and Demand – Short Term

Globally there is a Surplus in Manufacturing Capacity

- Tier 1 players operating at 75-80% capacity utilization
- Can be broken down to regional level
 - Delays in India's generation plans
- Overcapacity is expected to increase in next 2 years
 - New manufacturing facilities in emerging markets

Supply and Demand – Long term

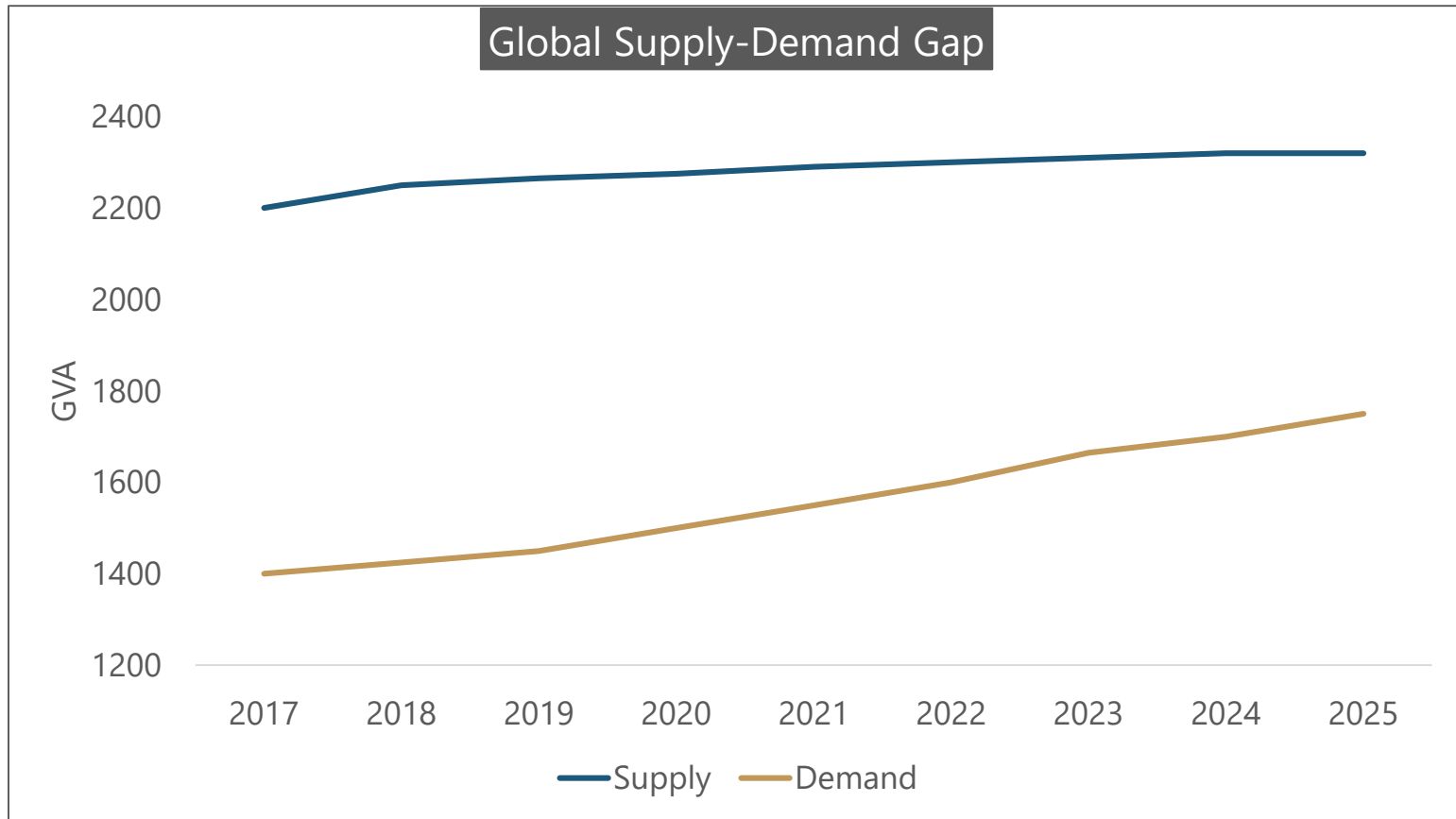
Supply-Demand Gap will Narrow Down in the Long Term



- Strict efficiency requirements will help tier 1 players to ramp up the capacity utilization
- Tier-1 players will shift their capacities towards emerging markets

Supply and Demand

Globally there is a Surplus in Manufacturing Capacity





Key Take-aways

- Penetration of renewables at transmission level
- Transformer asset health monitoring
- Preventive maintenance
- Supply demand gap to reduce in long term

Contact Details



Saqib Saeed

Principal Analyst – T&D

T. +49 (0)89 12252374

M. +49 (0)176 43408939

M. +1 408 622 0564

saqib.saeed@powertechresearch.com



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