

ABB Power Systems

# *Applications for Air Insulated Turnkey Substations*



# Mahadiya, Sudan, National Electricity Corporation, NEC



## Customer's need

- NEC required a new 110 kV AIS SS and wanted to execute the civil work themselves

## ABB's response

- 110 kV Switchgear, 5 bays
- 33 kV GIS, type ZX2, indoor
- 11 kV AIS, type ZS1, indoor
- 2 x 35 MVA Transformers, 110/33/11 kV
- Control & Protection equipment
- Auxiliary equipment

## Customer's benefits

- Due to the use of a high-rise application, NEC received a Double Bus Bar application with a price similar to a Single Bus Bar application



## Cabreúva, Brazil - CTEEP



### Customer's need

- Increase the installed capacity of Cabreúva Substation to feed an important industrial consumer within 12 months

### ABB's response

- Managed the short delivery time utilizing the programmed outages of the existing installation
- Turn-key delivery, 2 bays 440 kV and 6 bays 230kV including a 750MVA autotransformer

### Customer's benefits

- CTEEP managed to enter into a partnership with the industrial customer - a Brazilian Aluminium Company - securing future revenues based on fast track delivery of reliable ABB systems and products



# Thornton, United Kingdom - NGC



## Customer's need

- Establish a new 400 kV Switching station in order to transmit and distribute the growing demand for power in the Northeast part of England

## ABB's response

- Turnkey delivery of a 400 kV AIS S/S
  - 12 bays 400 kV Switchgear with 3 busbars
  - R&C and communications
  - Civil works, erection and commissioning

## Customer's benefits

- A new substation with the latest primary & secondary equipment technology that secures safe power transmission



# Caruachi, Venezuela - EDELCA



## Customer's need

- Due to energy deficiency in Venezuela, EDELCA needed the 1<sup>st</sup> phase of the substation in 12 months & the 2<sup>nd</sup> phase in 24 months in accordance with the customers specific standards.

## ABB's response

- A turnkey substation 400 kV in three phases
- Close co-operation with EDELCA with many engineering reviews that resulted in a faster engineering approval

## Customer's benefits

- ABB's flexibility made it possible to divide the 1<sup>st</sup> phase & deliver the first bay in record time, enabling EDELCA's first generator to enter commercial use before scheduled



# Pidiregas 409, Mexico – CFE



## Customer's need

- Establish a new 400 kV substation in order to satisfy Mexico's high power demand

## ABB's response

- Turnkey delivery of 400kV AIS S/S
  - Reactors, 2x75 MVAR
  - 400 kV Switchgear
  - R&C and communication systems
  - Civil works, erection and commissioning

## Customer's benefits

- ABB provided a high quality substation that met a crucial power demand with increased security



# Slatina, Romania - Transelectrica



## Customer's need

- Safe supply of Power to:
  - Bucharest from Power Station at Iron Gates
  - ALRO aluminium plant (largest electricity consumer in Romania)

## ABB's response

- Turnkey delivery of 400/220 kV AIS S/S
- Innovative AIS using Combined and Compact Switchgear Modules.

## Customer's benefits

- Small footprint made it possible to have both 400 kV and 220 kV new switchgear on the old 220 kV site
- Higher availability than solution with conventional Circuit Breakers and Disconnectors





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