

# Nortech Technologies Ltd.

*(The World Is Within Our Reach)*



## **Supply, Installation & Commissioning of 100/150 MVA 240/140/33 kV Auto Transformer**

**Ashuganj Power Station Company Limited (APSCL)  
Ashuganj, Brahmanbaria - 3402.  
Bangladesh**



**Project Profile** : Supply, Installation & Commissioning of 100/150 MVA 240/140/33 kV Auto Transformer

**Client** : Ashuganj Power Station Company Limited (APSCL)

**Location** : 230 kV Switchyard, APSCL, Ashuganj, Bangladesh

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## Project Synopsis:

**Nortech Technologies Ltd.**, acting as the local agent for Sewoong Plant Co., Ltd. of South Korea, successfully supported the Supply, Installation, Testing, and Commissioning of a 3-Phase, 100/150 MVA, 240/140/33 kV Auto Transformer for Ashuganj Power Station Company Limited (APSCL).

The scope of the project encompassed international procurement, inspection, and logistics from manufacturing facilities in South Korea to the project site in Ashuganj, Bangladesh. It further included the removal of the existing transformer, installation of the new unit, system integration, testing, and final commissioning in full compliance with IEC 60076 standards.

The execution of the project adhered to APSCL's technical specifications, engineering protocols, and operational performance requirements, ensuring reliability, safety, and long-term functionality of the newly installed transformer within the power generation system.

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## Objectives:

- Replace the existing power transformer with a modern high-capacity unit.
  - Improve grid reliability and performance at the 230 kV switchyard.
  - Conduct factory and site testing in line with IEC 60076 standards.
  - Deliver a fully operational transformer ready for commercial service.
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## Scope of Work:

### Supply

- 3-Phase Auto Transformer
- Rating: **100/150 MVA**
- Voltage Ratio: **240/140/33 kV**
- Cooling: **ONAN/ONAF**
- Vector Group: **YN<sub>a</sub>0+d1**

### Site Execution

- Removal of the old transformer from the APSCL switchyard.
  - Mechanical installation, alignment, and oil filling.
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- Integration of power, control, cooling system, and protection circuits.
- On-site pre-commissioning inspection.

## Testing & Quality Assurance

- Factory Acceptance Test (FAT) at manufacturer works with APSCL witness.
- Field testing on site including:
  - Winding resistance
  - Voltage ratio testing across all tap positions
    - OLTC operation testing
    - No-load and load loss measurement
    - Short-circuit impedance tests
    - Oil dielectric and quality tests
- All tests performed according to **IEC 60076** and manufacturer quality systems.

## Technical Specifications (Key Data)

Parameter	Specification
Rating	100/150 MVA
Voltage Ratio	240/140/33 kV
Vector Group	YNa0+d1
Tap changer	OLTC, $\pm 15\%$ , 1.25% steps
Cooling	ONAN / ONAF
Noise Level	78 dB
No-Load Loss	91 kW
Load Loss	351 kW at 150 MVA
Standards	IEC 60076

## Challenges & Solutions

Challenges	Solutions
Removing and transporting a high-capacity transformer inside an energized switchyard	Site work executed using strict shutdown coordination and a controlled lifting plan
Meeting complex performance parameters under tight tolerances	Full design verification and FAT as per IEC 60076
Coordinating international logistics and local construction	Separate execution teams managed supply, logistics, installation, and commissioning in parallel



## Results / Achievements

- The transformer was successfully installed and energized on schedule.
  - All performance parameters and test results met APSCL's technical requirements.
  - The new transformer increased system stability and enhanced power transmission capability.
  - FAT and site testing were completed without any non-conformity.
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## Client Feedback:

"APSCL's technical team expressed satisfaction with the quality, commissioning effectiveness, and project execution standards delivered".

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## Project Pictures:



## Key Takeaways

- Proper engineering planning and IEC-compliant testing are critical to reliable grid transformer deployment.
  - Seamless coordination between manufacturing, logistics, and site teams ensured timely delivery.
  - Safety and technical compliance were maintained at every stage.
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## Value Delivered

**Nortech Technologies Ltd.**, acting as the local agent, provided full coordination support between the supplier, APSCL, and the local contractor. We facilitated all project activities—from design review to commissioning—ensuring smooth communication and timely execution. Our involvement helped minimize operational downtime for APSCL and contributed to achieving reliable long-term



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performance of the power system. The final solution delivers consistent transmission performance in line with Bangladesh's power system requirements.

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**The End**