

## Balance of Plant (BOP) Package for 1X25TPD & 2x325 TPD CO<sub>2</sub> Capture Units at NTPC Simhadri

### Salient Technical Features

This package shall be used to cater different types of utilities required for CO<sub>2</sub> Capture Units. This 'Balance of Plant' package includes following sub-packages:

SN	Details of Facilities	Remarks
1	CO <sub>2</sub> Hub	CO <sub>2</sub> Liquefaction and Transfer System (including CO <sub>2</sub> Liquefaction System, Liquid CO <sub>2</sub> Storage Tank, Liquid CO <sub>2</sub> Transfer Pump etc.
2	Cooling Water System	Includes Adiabatic Cooling Tower, CW Pumps, CW Piping, CW Valves, and associated auxiliaries to cater 40 MW <sub>th</sub> Load.
3	Integrated pipe rack and cable tussle	The system is designed to cater to clarified water, DM Water, drinking Water, firefighting, air, steam, condensate, and flue gas ducts and pipelines supplying CO <sub>2</sub> capture units and different equipment or unit. This includes a water supply of of treated water and DM water, supported by appropriate storage and pumping facilities, shall have provisions for routing electrical power cables and control & instrumentation (C&I) cables.
4	Fire Fighting System	Fire water pipelines with necessary tap-offs for hydrants and sprinkler systems, Fire Detection and Alarm system, Fire Protection system
5	Steam Condensate Water System	Includes condensate polishing unit to meet site parameters with storage tank, pumps, and piping network.
6	Steam Pipelines and PRDS System	Main steam distribution pipelines along with Pressure Reducing and De-superheating Station (PRDS).
7	Compressed Air System	Including Air Compressor, Air Receiver Tank, Instrument Air Dryer etc.
8	Electrical System	Gas Insulated Switch Gear, 420kV, substation with MCR comprising Transformers, Switchgear, High Tension (HT) and Low Tension (LT) Motor Control Centres (MCCs), and other electrical auxiliaries.
9	Control & Instrumentation System	Includes Programmable Logic Controllers (PLC), Uninterruptible Power Supply (UPS), and instrumentation required for plant control and monitoring.
10	Civil Works	Includes construction of Control Room, Machine Room with proper ventilation and air conditioning, structural steel works, RCC works, internal road, drains, and other supporting civil infrastructure. All painting and surface finish of structural steel and other equipment/pipe/ducts shall meet coastal region specifications.

Comprehensive O&M of 'Balance of Plant' package for a period of 2 years from the date of commissioning.