POWER PLANT, BOP AND T&D CAPABILITIES
Making human life comfortable with world class infrastructure

Established in 1981, SPML Infra Limited (BSE: 500402 / NSE: SPMLINFRA) is a leading publicly listed infrastructure developer that has managed and implemented over 400 projects across India on an EPC (Engineering, Procurement and Construction), PPP (Public Private Partnership) and BOOT (Build-Own-Operate-Transfer) basis.

SPML has over three decades of multidisciplinary experience in executing world class infrastructure for power transmission and distribution, water treatment and transmission, waste water treatment & recycling and solid waste management, civil infrastructure development.

An ISO – 9001: 2008 certified company, SPML has established proven leadership in the high technology construction of India’s vital infrastructure.

OPPORTUNITY:
While there is surge in initiatives to generate power and install new plants; there is a need for reliable proven partners - "Balance of Plant" solutions providers to take the concepts to reality.

SPML - Single Point BoP Solution Provider

SPML has the core capability and competency as a preferred, trusted and reliable partner in the construction of large power plants in the domains of civil, mechanical and electrical works.

SPML has the experience of start-to-end balance-of-plant equipments, materials and solutions such as coal and ash handling systems, intake water, water treatment plants, cooling water systems, air-conditioning and ventilation systems, fire protection systems, cooling towers and civil works and services.

SPML provides engineering, procurement, construction, project management and commissioning services on a Turnkey basis to the Power Sector leveraging its proven project management and delivery experience of over 32 years, its construction capability, engineers and domain experts.

Engineering
SPML has strong demonstrated capabilities in engineering spanning from conceptualization stage to feasibility studies, front-end design and complete detail design. Ably supported by its in-house capabilities to provide engineering services in master planning, development, marketing and management, SPML is well positioned to provide end-to-end seamless and integrated solutions.

Procurement
SPML has built a very strong supply chain of reliable global vendors and suppliers. Comprehensive selection procedures and processes in selecting and sourcing diverse equipments and materials such as high-pressure fabricated equipments, large rotating equipments, packages, skids, electrical and instrumentation systems. Adherence to quality standards and timely supply of equipments and materials has been a consistent feature of our projects.

Construction
SPML manages a large fleet of construction equipments. The infrastructure equipments combined with our core assets - experienced professionals, ensure value creation in every project, while setting new benchmarks.
SPML has the capabilities of complete system integration of power plants, detailed power plant engineering with the various auxiliaries and equipments in the BOP package.

Turnkey Engineering, Procurement, Construction & Commissioning of:

**Mechanical Package:**
- **Cooling Water System**
  - Cooling water intake system CW Piping and Cooling Tower
  - Debris Filters, Condenser Tube Cleaning System, Self Cleaning Filters
  - ACW System, Air Cooled Heat Exchangers & PHE’s
- **Water Treatment System**
  - Raw water/fire water reservoir, Raw water pumps
  - Raw water chlorination, Pre-treatment Plant, Water treatment Plant, Pre-Filtration, UF, Softening Plant
  - Condensate Polishing Unit
  - RO, DM Plant, Desalination plants
  - Effluent Treatment Plant
- **Fuel/Material Handling System**
  - Ash Handling system
  - Gas Conditioning Skid
  - Fuel Handling system
- **General Mechanical Systems**
  - IA/PA System
  - Fire Fighting System
  - EOT Crane
  - Ventilation & Air Conditioning
  - LP Piping
- **Emergency DG Sets**
  - Diesel Generator set
  - Fuel system with day tank
  - Protection and control panel

**Electrical & C & I:**
- Plant Electrical Systems, Switchyards, Generators & Station
- Transformers
- LT Auxiliary and Distribution Transformers
- HT, LT Switchgears & Busducts
- Interconnection HT & LT cabling
- DC System & UPS
- Lighting Systems
- Plant Communication Systems
- Plant Electrical Systems
- Earthing and lightning protection
- Complete C & I system including SCADA

**Civil Works:**
- Soil investigation
- Complete Civil design and engineering
- Foundations for Turbine, Boiler, Air Cooled Condenser
- TG Building, Equipment Foundations and Plant Buildings
- Cooling Towers, Chimneys
- Reservoirs and Intake Systems
- Plant Civil Works, Roads, Trenches, Pipe racks, Culverts, etc.
- Sewage disposal system – Septic tanks
Signature Projects - Indicative List

As a corporate commitment, SPML gives due importance to safety compliances in design, execution, installation and operations and closely monitors all activities adequately backed by appropriate training and client understanding. Here’s an insight into few of the signature projects in the domain of Balance of Plant.

Water Intake & Water Supply Package - Bakreswar Thermal Power Plant (3 x 210 MW), West Bengal

<table>
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<tr>
<th>Location</th>
<th>Birbhum, West Bengal</th>
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<tbody>
<tr>
<td>Client</td>
<td>West Bengal Power Development Corporation Ltd</td>
</tr>
<tr>
<td>Project Value</td>
<td>INR 1400 Mn, USD 35 Mn</td>
</tr>
<tr>
<td>Status</td>
<td>Completed (ahead of schedule)</td>
</tr>
</tbody>
</table>

Scope of Work:
Design, Build with subsequent Operation & Maintenance for 5 years Twin intake plant water system package for the Bakreshwar Thermal Power plant
- Pre-treatment, filtration, demineralization & waste water management
- Construction of Intake Pump House - 5576 sqm, with complete pumping machinery (electro-mechanical)
- Twin MS Cross Country Pipelines = 38 km long of 900mm dia
- Raw Water Treatment Plants = 72 MLD
- Construction of DM Plant - 60 MLD
- 120 M x 10.66 M span RCC deck Slab bridge on Chandravaga River
- Construction of Bituminous Macadam Road = 20 km
- 33 kV Switchyard, Double circuit 33 KV Transmission Line = 16 km
- 6.6 kV Under Ground Cable laying - 4 km

Completed the Project three months ahead of schedule. This was an OECF, Japan Funded Project.

WBPDCL is credited with this project being the first large package EPC contract for Plant water system in a Thermal Power Plant in West Bengal. It is apparent that without this concept of turnkey package such tight scheduling of procurement, construction and erection activities could not be achieved.

The success of this project has shown the advantages of large multidisciplinary turnkey design-cum-construct package of contract over traditional form of contracting, and this has set an example for similar projects in the Industry.
Raw Water Make up System from Panchet Dam Reservoir to Santaldih Thermal Power Station under WBPDCCL (3 x 250 MW), West Bengal

Location: Santhaldih, West Bengal
Client: The West Bengal Power Development Corporation Limited (WBPDCCL)
Project Value: INR 2096 Mn, USD 42 Mn
Status: Completed and commissioned

Scope of Work:
Intake Structure, Water transmission conveyance through Twin Pipeline System, Switchyard and Sub Station Building, Transmission Line, Roads.

Raw Water Makeup System:
- Turnkey execution of Intake & pump house
- Raw water transmission main
- MS pipeline - 54 Km of 914 OD
- Transmission Line - 27 Km
- 33 kv / 6.6 kV switchyard & substation
- Bituminous Macadam Road - 27 KM
- Voice communication system - along the 27 Km stretch pipeline

A Matter of Pride: SPML is proud to be associated with this project which was integral to industrial resurgence in West Bengal. Problems regarding right of way of the pipeline (12,000 MT), which spans over nearly 25 villages were effectively sorted out and the project was successfully undertaken against the sudden and unprecedented rise of 6 metres in water levels.

Combined Cycle Gas Based Thermal Power Plant Stage-III at Ramgarh (1 x 160 MW), Rajasthan

Location: Ramgarh, Rajasthan.
Client: Rajasthan Rajya Vidhut utpadan nigam ltd. Jaipur.
Project Value: INR 2096 Mn, USD 42 Mn
Status: In progress

Scope of Work:
The project involves design, engineering, manufacturing, procurement, supply, erection, testing and commissioning of complete.

Mechanical: (Erection, testing and commissioning of raw water intake system, pre-treatment plant, DM water plant, ETP, cooling tower, compressed air system, vertical & horizontal water pumps, air conditioning & ventilation, fire protection system, fuel system and piping).

Electrical: (Erection, testing and Commissioning of power transformers of 150 MVA, 100 MVA & 50 MVA capacities, 6 bays of 220KV switchyard, 1 bay of 132 kv switchyard, HT & LT switchgear, switchyard control room with SCADA, control & relay panels, lighting and lightning arrester, communication systems, 33KV tower line for raw water intake system).

Civil works: (gas turbine building, steam turbine building along with main control room, boiler feed pump building, chimney foundation, equipment foundations including GTG, STG and HRSG, raw water reservoir of 6,90,000 M3 capacity, switchyard civil work and other plant buildings) for Balance Of Plant (BOP) packages along with 220KV Switchyard on EPC basis.
- Earth Excavation - 7,50,000 M3
- Concreting - 42,000 M3
- Steel Structural - 3,000 MT
Main Plant Civil Works Package for Korba Super Thermal Power Project Stage III of NTPC (1 x 500 MW), Chhattisgarh

- **Location**: Korba, Chhattisgarh
- **Client**: National Thermal Power Corporation Limited (NTPC)
- **Project Value**: INR 676 Mn, USD 17 Mn
- **Status**: Completed

**Scope of Work:**
- Plant civil works at NTPC Korba Main Plant (1 x 500 MW)
- All civil/structural works including piling:
  - TG Hall, Mill bunker, boiler, ESP, Chimney, Control building, Service Building, Compressor house.
  - Duct supporting structure, Pump house, Common service & switchgear building, D.M. transfer pump house & ARCW pump house.
  - Pipe/Cable Support Galleries & Trestles in out laying Area, Pipe/Cable pedestal in out laying Area, Roads and Drainage and Sewerage System, Canteen Building, Fire Station Building, Boundary Wall, Gate House and other miscellaneous work.

Breakthrough project in power plant with an esteemed client like NTPC. Typical constraints of space while working in an existing plant site for a capacity expansion / addition had to be overcome, while meeting the time schedules and milestones as per the client requirements.

Circulating Water System and Fire Protection System for Thermal Power Station-II Expansion, Neyveli Lignite Corp. (2 x 250 MW), Tamil Nadu

- **Location**: Neyveli, Cuddalore District, Tamil Nadu
- **Client**: Neyveli Lignite Corporation Limited
- **Project Value**: INR 332 Mn, USD 8 Mn
- **Status**: Completed

**Scope of Work:**
- Circulating Water system comprising of CW open channel from Cooling Tower to CW pump house, CW pump house with forebay, maintenance bay, switch gear & control room, CW piping, ventilation system etc.
- Fire protection system comprising of pumps, diesel engines, piping of hydrant and spray water system with all associated civil, electrical and allied system.

Supply, installation, testing & commissioning of 5 Nos. Vertical Turbine Pumps of 22,000m³/hr at 22 MWC with 1,800 kW Motor.
CW System & Offsite Area Civil Works Package for Korba Super Thermal Power Project Stage III of NTPC (1 x 500 MW), Chhattisgarh

Location : Korba, Chhattisgarh
Client : National Thermal Power Corporation Limited (NTPC)
Project Value : INR 279 Mn, USD 7 Mn
Status : Completed

Scope of Work:
Civil Work - Korba Offsite for NTPC
- Pump house & offsite civil work
- Pump house forebay, Duct, Drain, Fire station building, Permanent store, Roads, Switchgear rooms

All civil, piling, structural and architectural works of:
- C.W. Pump House Forebay and switch gear control room
- Trash Rack and stop log gate with lifting arrangements
- CW duct and CW channel
- Hydrogen Generation Plant Building & M store Building
- Canteen Building
- Fire Station Building
- Pipe/Cable Support Galleries & Trestles in outlaying Area
- Pipe/Cable pedestal in outlaying Area
- Roads and Drainage and sewerage system
- Boundary Wall, Gate House, CISF office
- Earthing Mat
- Foam House Building
- Miscellaneous Work

Ash Water Recirculation System Package for Barh Super Thermal Power Project of NTPC (3 x 660 MW), Bihar

Location : Barh, District - Patna, Bihar
Client : National Thermal Power Corporation Limited
Project Value : INR 237 Mn, USD 6 Mn
Status : In progress

Scope of Work:
Design, engineering, manufacture, civil works, inspection, supply, erection, testing & commissioning and performance & guarantee testing of the equipment & system comprising mainly -
- 4 nos. Ash Water Re-Circulation Pumps - 1,100 m³/hr., 60 MWC
- Ash Water Pipeline - 800 mm NB x 8 mm x 8,500 Mtr. long.
Station Piping Package for Simhadri Super Thermal Power Project - Stage II of NTPC (2 x 500 MW), Andhra Pradesh

<table>
<thead>
<tr>
<th>Location</th>
<th>Simhadri, Vishakapatnam</th>
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<tbody>
<tr>
<td>Client</td>
<td>National Thermal Power Corporation Limited (NTPC)</td>
</tr>
<tr>
<td>Project Value</td>
<td>INR 1049 Mn, USD 21 Mn</td>
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<tr>
<td>Status</td>
<td>In progress</td>
</tr>
</tbody>
</table>

**Scope of Work:**
Design, Engineering, Manufacturing, Shop fabrication, Assembly, Testing and Installation of complete station piping:
- Condenser DM Water Normal M/U System and Boiler & D/A Fill System
- Compressed Air System
- Raw Water System
- CW Blow down cum Service Water & APH Wash Water System
- Drinking Water System
- HVAC M/U System
- Condenser DM Water emergency M/U System and Condensate Spill System
- Sea Water make up system
- Sweet Water make up system
- Effluent & Sludge Disposal System

Lifting of 8.50 TMC Water from Sripada Sagar Project Dam to NTPC Reservoir

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<th>Location</th>
<th>Sripadasagar, Andhra Pradesh</th>
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<tr>
<td>Client</td>
<td>Irrigation and CAD Dept, Andhra Pradesh</td>
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<tr>
<td>Contract Value</td>
<td>INR 989 Mn, USD 25 Mn</td>
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<tr>
<td>Status</td>
<td>In Progress</td>
</tr>
</tbody>
</table>

**Scope of Work:**
Supply of 8.50 TMC of water from Sripadasagar to NTPC Ramagundum in Karimnagar district, Andhra Pradesh. Investigation, design, supply, installation, testing & commissioning of pumping station, electrical substation, rising main of 12 KM including construction of pump house, intake canal & all civil structural work.
- The project envisages providing drinking water for villages along the water distribution channel. A combined effort to supply water for industrial, irrigation and drinking purpose.
- MS Pipeline - 2500 MM diameter
- Water supply scheme with subsequent Operation & Maintenance for 2 years.
- Lifting of Water from Sripadasagar Dam.

Signature projects illustrated in the pages, were a result of the consistent support and encouragement from all the stakeholders - our esteemed clients, partners, vendors, suppliers and business associates. Together as a team, we have been working to meet the project charter.
SPML Expertise in Hydel Energy Generation

Energy fuels growth - SPML leads in reliable, clean & renewable energy generation

SPML is spearheading, executing and managing high-value projects in the Energy sector, on a Public Private Partnership (PPP) & Build-Own-Operate-Transfer (BOOT) basis. With over 30 ongoing projects, across various states in India, SPML is a premier Mini-Hydel energy generation and management company, focused on managing energy needs of consumers.

SPML undertakes:
- Setting up, operation and maintenance of new hydro power plants
- Modernization & upgrading of existing hydro power plants

Indicative list of the projects

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<td>Binwa Power Project - 4.5 MW Capacity</td>
<td>HIMURJA</td>
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<tr>
<td>AWA Power Project - 4.5 MW Capacity</td>
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<td>IQU Power Project - 4.5 MW Capacity</td>
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<td>Neogal Power Project - 4.5 MW Capacity</td>
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<td>Luni Power Project - 4.5 MW Capacity</td>
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<tr>
<td>Turini Hydroelectric project - 38 MW capacity</td>
<td>Power and electricity department Govt. of Mizoram</td>
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<tr>
<td>Tuivawl Hydroelectric project - 42 MW capacity</td>
<td>Power and electricity department Govt. of Mizoram</td>
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</table>

*The above projects are being developed through special purpose vehicles and joint promoters

Kabini Mini - Hydel Power Plant - Crowning Glory

Project Capacity - 20 MW, Annual Generation - 65 MU

Overcoming enormous geological challenges, the project was completed in a record 20-month time frame. An eco-friendly, non-polluting project that taps surplus water which otherwise would not have been utilized. The plant ensured improved electrical system stability, reduced voltage and uninterrupted power supply to the region.

- Excellence in Project Management in Hydro Power Sector (SHP) from ENERTIA Publication as part of their Annual ENERTIA Awards 2008. The award is in the category for sustainable Energy & Power, for the development and efficient operation of the 20 MW (10 MW x 2) Kabini Hydro Power Project, the 2nd largest private sector mini hydel scheme in the Karnataka.
SPML Experience in EPC - Transmission & Distribution

One of the largest contributor of rural electrification in India

Power Transmission & Distribution projects forms more than 50% of SPML's initiatives

Over two lakh rural households across the country benefited through SPML's Power Generation, Transmission and Distribution initiatives

* Power Generation, Transmission & Distribution - Contracting Projects

**Construction & Operations Of Hydro/Thermal Power Plants**
- Penstocks & Gates
- Turbines
- Hydro Mechanical Equipment
- Transmission Lines
- Up to 220 kV
- Transmission Line Hardware
- Sub-Stations
- Standby Generation
- Motor Control Centres
- Lighting
- SCADA & PLC
- Under Ground Cabling
- Up to 220 kV Substations

**Rural Electrification - DTC, Transmission Lines, Household Connection, Metering**
- Rural Load Management Solutions

**Indicative list of the projects**

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<td>Karnataka Power Transmission Corporation Ltd (KPTCL), Karnataka</td>
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<td>Execution of “Accelerated Power Development and Reforms Programme (APDRP) Works”</td>
<td>Bangalore Electricity Supply Company Ltd (BESCOM), Karnataka</td>
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<td>33 kV &amp; 11 kV Re-conductoring work for GESCOM</td>
<td>Gulbarga Electricity Supply Company (GESCOM)</td>
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<td>Bangalore Electricity Supply Company Ltd (BESCOM) Chamundeshwari Electricity Supply Company Ltd (CESCOM), Karnataka</td>
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<tr>
<td>Rural Electrification Work in Koderma District of Jharkhand</td>
<td>Damodhar Valley Corporation Limited, Jharkhand</td>
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<td>PESU Patna Underground Cabling</td>
<td>Powergrid Corporation India Limited (PGCIL), Bihar</td>
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<td>Rural Load Management System, Ranebennur &amp; Ghataprabha</td>
<td>Hubli Electricity Supply Company Limited (HESCOM), Karnataka</td>
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<td>Rural Electrification Work in Rohtas/Kaimur Districts</td>
<td>Powergrid Corporation India Limited (PGCIL), Bihar</td>
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<td>Rural Electrification Work Under AREP at Firozabad &amp; Mainpuri</td>
<td>Dakshin Vidhyut Vitrani Nagam Limited (DVVNL), UP</td>
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<tr>
<td>Haryana 132 kV / 220 kV transmission line in Bhuna</td>
<td>Haryana Vidyut Prasarara Nagam Limited, Haryana</td>
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<td>Replacement of Rabbit ACSR by Coyote ACSR conductor for HESCOM</td>
<td>Hubli Electricity Supply Company Limited (HESCOM), Karnataka</td>
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<tr>
<td>Construction of 400kV DC twin ACSR Mooseline</td>
<td>Rajasthan Rajya Vidyut Prasaran Nagam Limited, Rajasthan</td>
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<td>132 Kv Substations for Transmission system</td>
<td>Orissa Power Transmission corporation Ltd. Orissa</td>
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<td>Rural Electrification Work in Supaul</td>
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<td>Rural Electrification work in Patna</td>
<td>South Bihar Power Distribution Company Ltd.</td>
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<td>Rural Electrification work in Gaya</td>
<td>South Bihar Power Distribution Company Ltd.</td>
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<tr>
<td>Power Distribution Franchisee for Bhagalpur</td>
<td>South Bihar Power Distribution Company Ltd.</td>
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Save Energy—spend less today and provide a brighter tomorrow.