N S ENERGY GROUP

ENERGY N S GROUP

PERFECTION COMMITMENT PCMS

JAS-ANZ ACC. No. S3111204IN

An ISO 9001-2008 Certified Company

N. S. Thermal Energy PVT. LTD.

(An ISO 9001:2008 Company)



The N S Thermal Energy (P) Ltd. is an integral part of “N S Energy Group” which is a Conglomerate of upcoming professionally managed companies engaged in Design & Engg., Manufacture, EPC/Turnkey Projects and O&M of Power Plants since 2004. The Group Comprises of: -

1. N S Thermal Energy (P) Ltd. (www.nsthermalenergy.in)
2. N S Terbo (P) Ltd. (www.nsterbo.in)
3. Monotech Engineers (P) Ltd. (www.monotechengineers.com)
4. Mithila Dyeing & Chemicals (P)Ltd. (www.mdcppl.in)
5. Neeraj Gupta & Sons (www.ng-sons.com)

We are Consortium Partner of India’s Power Major NTPC-ALSTOM Power Services Ltd. (NASL)

Our Vision

"To be a premium global conglomerate with a clear focus on Small Power Projects."

Our Mission

"To Provide and ensure optimal value to all our Stakeholders."

Our Values

- ✓ Integrity
- ✓ Commitment
- ✓ Transparency
- ✓ Passion for Customer delight
- ✓ Strive for Excellence

Strength

- *Highly experiencedLeadership*
- *Dedicated and motivatedTeam*
- *Three manufacturing Units*
- *Capability to handle Variety of projects based on: -*
  - *Biomass*
  - *Solar*
  - *Coal*
  - *Gas*
  - *Diesel*
  - *Waste*
  - *Electrical Substation & Transmission Distribution*
- *Long list of Satisfied Clients in India and many parts ofGlobe*
- ✓ *Acquisition of SDIPL-URJA, Aligarh – A name in SPVinstallations*
- *Consortium Partner -NASL*
- *In-house Engineering capabilities.*

Strength–Leadership Team

- *Combined Professional Experience >100 Man Years*
- *Neeraj Gupta (Group Director)*
  - ✓ *B.E. Mechanical*
  - ✓ *Exp. > 25 Yrs. in Steam Turbine Design, Manufacturing & Troubleshooting mechanical equipment's including Boilers & Power Plant Auxiliaries.*
  - ✓ *Other Rotating machineries.*
- *M. B. Sinha (Director-Technical)*
  - ✓ *B.E. Electrical (Hons.)*
  - ✓ *Exp. > 36 Yrs. (Projects & Operations) in Power Sector (Thermal, Co-Generation, Biomass, Solar & Other Renewable Energy) from Concept to Commissioning & Post Commissioning Operation of the plant*
  - ✓ *Substations, HT/LT Electrical & Instrumentation Control System.*
- *Rajinder Tiku (Consultant / Adviser)*
  - ✓ *Graduate Engineer (Mechanical)*
  - ✓ *Exp. > 38 Yrs. in Gas Turbine based Generation Projects*
- *H. P. Agrawal (Executive Director)*
  - ✓ *Graduate Engineer (Chemical)*
  - ✓ *Exp. > 40 Yrs. in Rourkela Steel Plant, S.A.I.L*

Strength – Leadership Team…contd.

National Consultants &Associates

- ***Consortium Partner of India's Power Major NTPC- ALSTOM Power Services Ltd. (NASL)***
- ***Technology Partner Shriram EPC***

International Consultants &Associates

- ***Mr. Knut Willand, Director (Sustainable World Emerges)***
  - ✓ ***Exp. > 40 Yrs. in Structural Engineering in Industrial Plants***
- ***Mr. Marlon Ramirez, GM (PROLEC–SA)***
  - ✓ ***Exp. > 15 Yrs. in Power Transmission and Distribution.***

Strength: Two Manufacturing Units

1 N. S. Terbo Pvt. Ltd.

- ✓ Dealing in used Steam Turbines Rotary Machines and Speed Reduction Gear Box with Electrical Control Panels and Automation of Power Plants.
- ✓ We make New Turbines up to 15.0 MW we specialize in low inlet pressure steam turbines.
- ✓ We have presence in more than 10 countries across the Globe with 125 installations.

2 Monotech Engineers Pvt. Ltd.

- ✓ Manufacturer of EOT Cranes up to 150 T capacity
- ✓ Material handling Equipment
- ✓ Special purpose Machine Tools
- ✓ Heavy & Specialized fabrication

Focus Area

- EPC
- Erection, Testing & Commissioning and Operation & Maintenance of Power Plants, Process Plants & Industrial Plants.
- Manufacturing Steam Turbines Upton 15 MW
- Overhauling, Refurbishing, Rehabilitation of Steam Turbines, Gas Turbine & Power Plants.
- Manufacturing of EOT/ HOT Cranes up to 150 Ton.
- Energy Audits & efficient Solutions.
- SPV & Solar Thermal Applications
- Solar Pumping Solutions/Street Lighting

EPC/TURNKEY (LSTK)

- EPC of Biomass/ Co-generation/ Solar/ Thermal/ Diesel/ Gas based Power Plants and Electrical Substation & Transmission Distribution.
- EPC of Waste to Energy Plants.
- EPC of Post-Harvest / Industrial Process Plants.

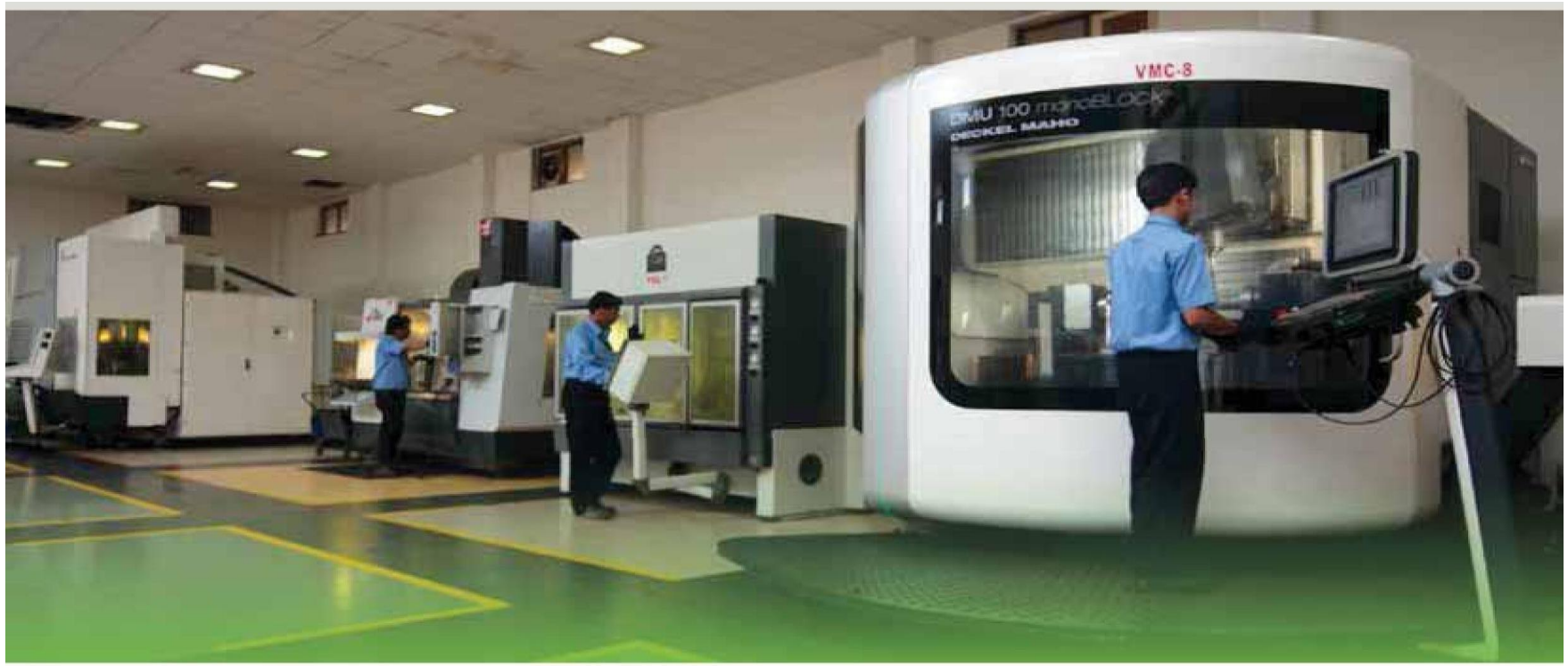
INDUSTRY WE SERVED

- POWER & ENERGY
- TEXTILE
- SUGAR
- DISTILLERY
- PAPER
- OIL & GAS
- PROCESS INDUSTRY

Specialized Services Offered

- Design, Engineering, Supply, Erection, Testing & Commissioning
  - ✓ Biomass
  - ✓ Solar
  - ✓ Thermal
  - ✓ Diesel/ HFO
  - ✓ GAS
  - ✓ Food Processing
  - ✓ Electrical & instrumentation including Substation & Transmission Distribution
- Operations & Maintenance
  - ✓ Biomass
  - ✓ Solar
  - ✓ Thermal
  - ✓ Diesel/ HFO
  - ✓ GAS
  - ✓ Electrical Installations/ Sub-Station
- Acquisition/takeover of power plant during construction stage even.
- Commissioning Assistance & Trouble Shooting
- Preparation of DPR & Feasibility report of Power Projects.

Our Activities in Gas Turbine Services.



1. Component Manufacture

NSTEPL manufactures a wide range of high precision components for gas turbines, steam turbines and aero-engines. NSTEPL manufactures a wide range of gas turbine components for GE designed heavy duty industrial gas turbines (Frames 3, 5, 6, 7 & 9) which include:

- Compressor stator blades along with rings and exit guide vanes
- Compressor rotor blades
- Inlet Guide Vanes (IGVs)

- Fuel nozzle assembly
- Shroud blocks - Standard - Super Alloys
- Combustion parts hardware made from SS and complex material like:
  - Stellite
  - Nimonic 263
- Overhaul consumables
- Repair shop consumables
- Inner barrels for compressor discharge casings
- Compressor and turbine casings.

NSTEPL also manufactures customized products through reverse engineering for its different clients across the globe for all Original Equipment Manufacturers(OEIVs).



2. Component Repair Services

Powered by its strong infrastructure, NSTEPL offers comprehensive gas turbine repair services. Our gas turbine component repair and rehabilitation shop has the capability to upgrade components to latest standards within extremely quick turnaround times. Our repair workshop provides repair services for the following components for GE Frames 3, 5, 6, 7 &9:

- Fuel Nozzles
- Flow Sleeves
- Bullhorn Brackets
- Crossfire Tubes & Retainers
- Combustion Liners
- Transition Pieces
- Nozzles
- Buckets (outsourced)
- Shrouds

3. Supply of Spares & Replacement Parts

NSTEPL supplies a complete range of quality spares and replacement parts for GE engines(Frames 3, 5, 6, 7 & 9), including capital parts like:

- Fuel Nozzles
- Flow Sleeves
- Bullhorn Brackets
- Crossfire Tubes & Retainers

- Combustion Liners
- Transition Pieces
- Nozzles
- Buckets

4. NSTEPL also offers a variety of material support systems including:

- Refurbished Parts
- Material Packs
- Long Term Service Agreement

Rotor Repair & Complete Overhaul Services

To complement the existing capabilities of component manufacture, repairs, field services and spares supply capabilities, NSTEPL inaugurated its Rotor Overhaul facility in the year 2012.

The facility has the capability of complete turbine and compressor rotor de-stacking, refurbishment, re-building and balancing. The company's Rotor Overhaul facility is spread across 2000 m2 of shop floor, office, store, quality and inspection areas and is well equipped with imported machines, tools & tackles, jigs & fixtures and measuring & inspection instruments which include a shot blasting system, vertical turret lathe, 10 meters long-50 ton Skoda lathe, Schenck balancing machines, conventional milling machines, blade tip grinding machine, Schenck moment weight balancing machine, welding machines, radial drilling machine, a spare parts depot, along with 2 overhead cranes with a load bearing capacity of 60 and 15 tons each. This facility is managed by a team of technical experts from the industry with rich experience in rotor overhaul jobs.

With the existing manufacturing and component repair facilities, the Rotor Overhaul Facility makes NSTEPL a total gas turbine solutions provider operating from one Integrated Campus.

- COMPLETE ROTOR OVERHAUL - MS 6001 GAS TURBINE - Reliance Industries Limited, Baroda
- COMPLETE ROTOR OVERHAUL - MS 6001 GAS TURBINE - Reliance Industries Limited, Hazira

- COMPLETE ROTOR OVERHAUL - MS 6001 GAS TURBINE - Reliance Industries Limited, Patalganga
- RUN OUT CHECKS 8, TIP TURNING - 300 MW HP/1P STEAM TURBINE —Siemens Limited, Baroda
- FRAME 5 GAS TURBINE: GENERATOR ROTOR RETAINING RING REMOVAL— Siemens Limited, Baroda

5. Field Maintenance Sc. Engineering Services

NSTEPL employs a wide range of experienced gas turbine, steam turbine & compressor field engineers, technical advisors, and construction and logistic managers to undertake and deliver both on-site and remote engineering services. These services can be complemented to include customized spares packages and tooling kits for regular Combustion, Hot Gas Path and Major Inspections. Our engineering services include:

- Operation and Maintenance
- Electrical & Mechanical Engineering Support Fuel Conversions
- Inspection and Plant Overhaul
- Machine up-rate and Improvement



6. Coating Services

To offer on par coating services, NSTEPL has developed advanced protective coatings for a range of OEM equipment Our cold coating facility is capable of performing sacrificial coating application for high erosion and corrosion resistance on compressor blades and gas turbine casings. The current range of coatings (formally approved by Siemens Industrial Turbo Machinery Ltd — UK) available are:

- I PCOTE IP 9183 R1
- SMOOTHSEAL IP 9444
- IPSEAL IP 9184 (KHAKI)
- XYLAR 101

NSTEPL in association with Praxair Surface Technologies, Inc. USA, offers Serma Gard 1105 and Serma Gard 1280 coatings for Oil & Gas Industrial applications. Praxair Surface Technologies, a fully owned subsidiary of USD 11.2 billion Praxair Group, USA (founded in 1907; is the world's largest provider of wear-resistant and corrosion- resistant coatings for industrial applications. NSTEPL with its state-of-the-art coating facility offers such coatings on fasteners and other metal surfaces for offshore as well as onshore installations.



Projects Completed Biomass/Thermal

N.S. THERMAL ENERGY PVT.LTD.

AGRICULTURE PROCESS CENTER



AGRICULTURE PROCESS CENTER



WHITE COAL



BIOMASS BRIQUETTING



BIOMASS PELLETS





COTTAGE INDUSTRIES



ELECTRIFICATION TO VILLAGE



INTEGRATED AGRICULTURE LOGISTICS CENTER



PROJECTS COMPLETED & COMMISSIONED

EPC

- ✓ Supply, Erection & Commissioning of 10 MW Multistage Condensing Turbine Alternator set with Its Electricals & 132 KV Substation for Sanjog Sugar Orient Green Power at Hanumangarh, Rajasthan.
- ✓ Supply, Erection & Commissioning of 8 MWMultistage Condensing Turbine Alternator set with Its Electricals & 33 KV Substation for Orient Green Power at Chhipabarod, Rajasthan.
- ✓ Supply, Erection & Commissioning of 4.5 MW Multistage Condensing Turbine Alternator set with Its Electrical for Continental carbon Ltd., Ghaziabad.
- ✓ Supply, Erection & Commissioning of 5.5 MW Multistage Back Pressure Turbine Alternator set with Its Electrical for Siddhartha Paper Limited, Kashipur.
- ✓ Complete Project, Planning, Execution & commissioning of 4 MW in Malvika Steels Ltd.
- ✓ Complete Project, Planning, Execution & Commissioning of 7.5 MW x 2 Numbers TGs in Prakash Industries Ltd, Chattishgarh.
- ✓ Complete Project, Planning, Execution & Commissioning of 4.5 MW Multistage Condensing Turbine Alternator Set with its Electricals & Substation for Pragati Paper Mill, Haryana.

O&M

- ✓ 23 MW Cogen Bagasse/Coal Power Plant, 87 Kg/ cm^2,515^{0}C
- ✓ 120 MW x 4 Thermal Power Plant
- ✓ 25.6 MW Thermal Power Plant
- ✓ 8MW Bio Mass Based Power Plant, 45 Kg/ cm^2, 435^{0}C steam temp.
- ✓ 60 MW Power plant at M/s Abhinav Steel Pvt. Ltd Sathariya, Jaunpur, Uttar Pradesh

E&C

- ✓ 36 MW Cogen Bagasse/Coal Power Plant, 92 Kg/ cm^2,540^{0}C.
- ✓ Erection & Commissioning of ACC for 2X25 MW Power Plant.
- ✓ Complete Instrumentation & Electrical testing of 2 x 21 MW & 2 x31 MW
- ✓ Exhaustive refurbishing with RLA of 2 x70 TPH Travelling Grate Mitsubishi make Boiler 104 Kg/cm2(G), 530° C temperature.
- ✓ EPC of 6MW Biomass Power Project including 33kv substations, Bhopal, MP.

Projects Completed (SOLAR)

Solar (PV) Power Plant



SOLAR PROJECTS

- ✓ Consultancy/ Engg. Services for 2 MW Grid Tied SPV Power Project for NKG Infra, Ghaziabad.
- ✓ EPC of 1500 Wp SPV Plant at Aligarh
- ✓ EPC of 1200 Wp SPV Plant at village Nangla Dulli, Firozabad, electrifying 50 Houses in the rural belt (A Minda Group Project)
- ✓ EPC of (Approx 5400) Solar Lighting Systems (LED)in Ambedkar Villages of UP
- ✓ EPC of 100 KWp SPV Plant at IG Krishi Vishwavidhalaya
- ✓ EPC of 400 KWp SPV Plant at Mahadev International.
- ✓ EPC of 100 KWp SPV Plant at College of Dairy technology.
- ✓ EPC of 5 MW SPV Plant at Siwana Power Projects Pvt. Ltd.
- ✓ EPC of 1 MW SPV Plant at Suryakoti Power Project Pvt. Ltd.

Ongoing Projects

- ✓ EPC of 6 MW Biomass Power Project including 33kv substations, Bhopal, MP
- ✓ O&M of Landfill Gas Energy Project, Gas Authority of India Ltd. (GAIL), Ghazipur, New Delhi.
- ✓ 2 MW Solar PV (Poly Crystalline Modules) with 33 KV substation for Sponge Iron Plant at Rourkela, Odisha.
- ✓ EPC of 50 MVA, 11-20KV/66KV Sub-station in Madagascar, Africa.
- ✓ EPC of 10 MW MSW to Energy Power Project, Korea.
- ✓ EPC of 3.0 MW RDF Based Power Project, Korea.

OUR PRESENCE











ABRO BALANCING MACHINE WITHVIBRATIONMONITORING



GENERAL VIEW OF OUR TURBINE REPAIRSHOP







HFO DG Sets







Pre-Engineered Buildings Projects







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