

Annual Newsletter

XXIII Foundation Day
STEAG Energy Services (India) Pvt. Ltd.

2024

steag
energy services



Vision, Mission and Quality Policy

Vision

To be the most admired and responsible energy service company delivering sustainable value to all stakeholders and contributing towards mitigation of environmental impacts of energy production and use.

Mission

To maximize shareholder value while adhering to the local laws and observing the highest ethical standards with the goal of delighting everyone we serve.

Quality Policy

“STEAG Energy Services India hereby declares that it is its policy to establish, implement and maintain Quality Management Systems within the organization to ensure that the products and services provided are in accordance with the highest professional standards.

The organization is committed to identify all internal and external issues, the needs and expectations of interested parties that affect the quality of its products and services and adopt a risk-mitigation approach in planning the delivery of its products and services.

The management is committed to continual improvement of the Quality Management System to suitably and effectively meet its objectives of providing products and services to meet the contractual obligations and ensure client satisfaction.”

Table of Contents

STEAG HSE Policy	04
From the Chairman's Desk	05
News from the Profit Center Energy Technologies	07
News from the Profit Center System Technologies	09
News from the Profit Center Training & Advisory Services	10
News from the Profit Center Operations & Maintenance	11
News from the Profit Center Technical Services & Quality	13
News from the Profit Center Project Development and Transmission & Distribution	14
News from the Profit Center Botswana	17
News from the Profit Center STEAG Operations & Maintenance Company (SOMC)	18
Highlights from the Corporate Office	19
Business News	27
Employee Contributions	59
Long Service Awards	65

STEAG HSE Policy

Environment, Occupational Health & Safety Policy

Endeavour to work with customers to align with their H&S standards by giving utmost importance to our customers.

Ensure that the health and safety aspects are integrated in the customer governance structure and adhere to the customer's health and safety policies.

In-line with this policy, STEAG shall establish Environment, Occupational Health and Safety objectives for each process, which are appropriate and support the purpose, context, and strategic direction of the organization.

STEAG Energy Services (India) Pvt. Ltd. (STEAG) firmly believes that "Occupational Health & Safety of Human Beings and Protection of Environment" overrides all other business targets. We further believe that all injuries, occupational illnesses as well as safety and environmental incidents are preventable.

We shall strive to be the leader in the field of management of Environment, Occupational Health & Safety.

STEAG is committed to:

STEAG strives to achieve these objectives by:

Adhere to all applicable regulations, compliance obligations and requirements that are relevant to our organization.

Protect the environment including prevention of pollution across the life cycle of all our activities, products and services.

Create a culture of learning and practicing Environment, Occupational Health & Safety systems and procedures among all our employees, customers and business partners.

Involve all employees in improving EHS systems, processes and performance by way of suggestions scheme and safety committees.

Carry out hazard identification and assessment of risks and opportunities for all major and critical activities.

Eliminate occupational hazards, ill-health and injury at our workplace/customer workplace and reduce OH&S risks.

Implement environment-friendly measures in our scope of work.

Use sustainable resources.

Reduce - Reuse - Recycle and Recover (R-R-R-R) of waste.

Utilize energy resources in a responsible and efficient manner so as to reduce emissions and generation of effluents and waste products.

Conduct all our activities in such a manner as to avoid harm to all our employees, customers, visitors, business partners and community.

Provide and maintain safe, healthy and environment-friendly workplaces for all our employees and other stakeholders in all operating processes.

Communicating and practicing this policy extensively throughout our operations within the organization.

Disseminating learning from investigations of incidents, internal and external, to all our employees, customers and business partners, and taking steps to prevent such occurrences in its work.

Using this policy for regularly setting, measuring and revising our Environment, Occupational Health and Safety objectives at the appropriate levels, functions and processes.

Designing plants with proper and adequate safeguards for ensuring process safety. Carrying out process and operational changes through well-defined systems and strict adherence to the same.

Recognizing importance of promoting and implementing this policy effectively throughout our entire supply chain, from our suppliers to our customers, to ensure proper and efficient use of our services in accordance with agreed upon specifications.

Making this policy available to all relevant stakeholders. Reviewing regularly and updating the systems and procedures to ensure that it remains relevant to the context of our diverse business operations.

Identifying and evaluating health risks related to operations and carrying out pre-employment and periodic medical checkup of its employees.

Keeping abreast of the latest international codes, standards and practices and adopting the same, wherever applicable.

From the Executive Chairman's Desk



Dear Colleagues,

As 2023 drew to a close, there were several important developments, which need to be recalled.

Restructuring and Change of Ownership

The first and foremost was the sale of the STEAG Group, including SESI, by the KSBG consortium of municipalities, which owned it to the Spanish based PE firm Asterion Industrial Partners. Though the sign off for the estimated 2.6 billion Euro sale took place last year, the transfer of ownership was effective January 1, 2024.

As part of the restructuring which preceded the sale, STEAG GmbH was reorganized under two companies viz. Iqony GmbH and STEAG Power GmbH, which would focus on Renewables and Thermal respectively. As part of this reorganization, the shares of SESI were transferred from Iqony Solutions GmbH (formerly STEAG Energy Services GmbH) to STEAG Power GmbH. Following the same principles, the shares of STEAG Energy Services Botswana (SESBW) were transferred from Iqony Solutions GmbH to SESI.

Internal Restructuring of SESI

The process of organizational restructuring of the management of SESI was started in the last quarter of 2021 following the departure of the incumbent Managing Director and the appointment of an Executive Chairman in August 2021 in his place. It was recognized that the profit centers had matured over the years and were all headed by managers who had grown with the company over the last 15 to 20 years. The concept of making the profit centers more autonomous was marked by important enabling changes:

1. Delegation of powers to the heads of profit centers
2. Each profit center was made responsible for their own marketing and sales
3. The centralized computerized Documentation Center was established as a separate entity accessible to nominated staff from each profit center by password access control.
4. High-level business development functions were assigned to the senior officers viz. Mr. Bhanuprakash, Mr. Renk, Mr. Debasish Patra and Mr. Rakesh Mishra in addition to their existing roles in the company.

2023 marked the first calendar year that the profit centers were fully responsible for their performance and they were directly interacting with the shared services like HR, Commercial, Finance , Admin, IT and Documentation for shared services. All profit center heads have taken on the responsibilities of running their affairs in a responsible way and it is expected that the autonomous

functioning will release new energy for the exponential growth of individual profit centers and thus add to the overall growth of the company. It also allows each profit center to respond flexibly to the market developments of its area of operations especially in this period of energy transition. In keeping with this approach, it may be noted that the news of the profit center activities and future plans is given by the respective profit center head separately.

International Business

SESI is giving special attention to the geographies vacated in the Middle East, Far East, South East Asia, Africa and elsewhere by Iqony Solutions following the shift of their focus to Renewables. In order to effectively address opportunities in the Middle East region, SESI has opened a branch office in Dubai. Mr. Renk and Mr. Debasish Patra are functioning as virtual directors of this office and their marketing efforts are assisted by Mr. Binoy Das, who is at the Dubai office and Mr. Vishal Baghel, who will shortly join the Dubai office. Mr. Samuel Rajkumar provides back-office support. These efforts have resulted in some very good projects being awarded to SESI in 2023. The target for 2024 is ambitious and success will have a major impact on growth and profitability.

The year 2023 was marked by a sizeable increase of orders for Energy Technologies division not only in India but abroad including Turkey, Kazakhstan, Ivory Coast, and KSA; successful breakthrough in renewables including green hydrogen, pump storage in Project Development & T&D Division; Acquisition of two major O&M contracts – Haldia, HPL and OTPC, Tripura apart from the sizeable expansion of our existing Botswana contract, successful execution of two major R&M works at our Jharsuguda site, successful execution of first AOH at SOMC and ensuring our highest safety standards across all O&M sites with no major safety incidents; significant rise in online and regular training programs organized by our Training division; successful joint execution of one of a kind ESKOM, South Africa project; increase of O&E projects with NTPC by our Technical Services division and successful execution of key projects and acquisition of new orders in Power System Simulation areas.

Very shortly after we organized the seminar on Hydrogen last January and showcased our credentials, we are happy to report acquisition of several assignments in this sector. Likewise we hope to break into consultancy contracts in the field of AI applications in the power sector after the annual seminar on the subject, which we will conduct on the January 29 this year.

It is remarkable how quickly the team has bounced back after a period impacted by COVID and the resultant recession. The last year has been marked by a major turnaround in financial results and given the buoyant economic growth figures. The team is gearing up to a busy year ahead conquering new geographies and new sectors.

I would also like to place on record our sincere thanks to the leadership in Germany especially Dr. Schiele and Mr. Sigel and the Board for their steadfast support during these turbulent times caused by COVID and the restructuring process. Without that support we would have not been able to come out of the slump we encountered.

I would like to congratulate each member of the team for their dedicated performance and we look forward to their innovative initiatives to prepare the company to strike out new pathways to ensure continuous and profitable growth.

Wishing each one of the team and their families a very Happy and Prosperous New Year.

With best wishes

Dr. Jacob T. Verghese
Executive Chairman

News from the Profit Center Energy Technologies



The year 2023 has witnessed a global focus on energy transition and while India has scaled up its production from renewable sources, it has not reduced its dependence on thermal power. On the other hand, it has put back into service stranded coal-fired plants and has postponed the shutdown of the old plants, in order to meet the rapid increase in power demand. Concurrently, the Government of India has taken several initiatives to accelerate the transition to the hydrogen economy.

SESI had, in anticipation of the growing demand for services in this sector, organized a seminar in January 2023 on “Hydrogen – the fuel of the future is here”. With this initiative, we showcased our credentials for services in the hydrogen sector. I am happy to report that during the year we were able to get orders for the following projects in the sector:

- NTPC Badarpur, Delhi for hydrogen fueling station.
- NHPC Leh for Green Hydrogen-based 25 kWe fuel cell micro grid
- PTC for Kandla port master plan for hydrogen and ammonia production hub.
- ANERT Kerala for DPR of the Hydrogen Valley

As an integral part of our strategy to get more business abroad to boost our earnings, we have enhanced our presence in the international market after bagging engineering projects for combined cycle power plants in Turkey, Kazakhstan, Ivory Coast, and KSA. This strategic move has strengthened our geographical presence. The CCPP projects in Ivory Coast & Jazan, KSA have also diversified our capabilities towards detailed engineering assignments.

Supercritical coal plants continue to be constructed in India and SESI has been awarded two major OE orders. These are the first OE jobs in supercritical power plant that we have received after the first one in 2010 from Karnataka Power Corporation for the 2x800 MW plant at Raichur.

In the environmental sector, flue gas desulphurization (FGD) plants are being retrofitted in several plants according to the requirements of the new regulations. I am happy to report that we have been awarded the following consultancy assignments:

- FGD-FGC & SCR installation at 2x660 MW Power Plant, OPGC, Odisha
- FGD installation at 800 MW Wanakbori, 500 MW Ukai and 2x250 MW Sikka Power plant, GSECL, Gujarat
- FGD installation at 210 MW, 250 MW, 600 MW and 500 MW Power plant, APGENCO, Andhra Pradesh

After the initiation of the concept in the last quarter of 2021, the calendar year 2023 was the first one in which we have operated as a full-fledged quasi-independent profit center with responsibilities for marketing and financial results. I am happy to report that the unaudited results for the calendar year 2023 indicate a reasonable level of EBIT.

The focus in 2024 will be on:

- Enhancing our renewable energy portfolio,
- Flexible operation of power plants
- Waste to Energy/ biomass/ captive plants
- Taking up more short term assignments especially for performance improvement of power plants
- Growth plans for the international markets especially those in the Middle East and Asia. The establishment of the Dubai Branch Office will further strengthen our marketing efforts.

We also see prospects in Africa and a market survey of the opportunities is planned for developing an appropriate strategy.

With right strategy, right structure and the right team, our focus will be to continue to deliver high quality services, unlock new opportunities as momentum in current markets continues to build and our customers increasingly look to us to help them to resolve some of their most complex challenges.

Raja Badsha De
Head – Energy Technologies

News from the Profit Center System Technologies



The System Technologies (ST) department is organized under three groups, which are working quasi independently from last year in realizing their business targets and executing their projects.

Operation Management System Division (OMS)

Starting in 2003 when the first order for PADO was received from BHEL for the NTPC plant at Simhadri, the department has grown significantly. Currently, PADO systems have been installed in 110 units all over India in the fleets of NTPC, MAHAGENCO, UPRVUNL, CSPGCL, TANGEDCO, RVUNL, GSECL, etc. Further, it is expected that another 40 units will be installed. The original warranty period and AMC support has expired in many cases and the power plant owners are now entering into contracts with SESI for AMC arrangements. In addition to the expansion of AMC arrangements with various utilities (10 plants, 23 units), the OMS team has successfully moved into PADO upgrade market using existing significant PADO installed base. To increase the accessibility of PADO across various NTPC users including HQs, the POC project concept with NTPC Raipur was finalized together with BHEL to install Nabinagar 3x660 MW PADO in NTPC corporate network using virtual machines.

Fleet Monitoring / Central Monitoring Solution (CMS) was one of the key business initiatives in 2023.

Operator Training Simulator Division (OTS)

One of the main highlights was the conversion of existing 500 MW MAHAGENCO's Khaparkheda simulator into flexibilization Simulator and provide training on flexibilization using the same under IGEF funded project. This training on flexibilization using a flexible 500 MW Simulator was the first of its kind in India. In addition, under GIZ DeveloPPP, the NTPC Dadri 500 MW unit was chosen to be the reference plant. Apart from expansion of AMC arrangements with various utilities (RAWEC, CESC, MAHAGENCO), Simulator execution progress was significant including achieving Performance Guarantee (PG test) of seven (7) Simulators at the NTPC Sholapur location. Diversification into bio-mass Simulator project commissioning in Vietnam and completion of simulation studies into captive power plant (Haldia) connected with the petrochemical complex was another achievement in 2023 for the Simulator division.

The thrust in 2024 will be to develop markets for the products in the Middle East and Far East.

Power System Simulation Division (PSS)

The PSS division is both selling DigSILENT software and utilizing it for providing consultancy. The work in this division has achieved significant momentum by acquiring six (6) consultancy projects in 2023. Further, 10 Power Factory license orders were received from customers such as WSP, Ramboll, Tata Consulting Engineers, Hitachi Energy, WS Atkins, Manav Energy, IPR Technologies etc. Nine (9) more AMC orders were received along with three (3) training orders.

The thrust in 2024 will be to aggressively address the growing demand for network studies owing to increased production from renewables in the generation sector.

New product development using Artificial Intelligence (AI) is the next thrust area and projects are being formulated for joint execution with Iqony Solutions.

Debasish Patra
Head – System Technologies

News from the Profit Center Training & Advisory Services



The CEA approved Training department was set up at the Noida headquarters with required infrastructure in the year 2010 and it was inaugurated by the then Member of the Board of STEAG GmbH Mr. Rumstadt. Since its inception it has trained, under its flagship program of GETs, more than 300 engineers under the CEA approved program. These engineers form the backbone of our middle management and are expected to hold the senior positions in the company in the years to come. The department has also been conducting refresher training courses for in-house engineers and other staff on a regular basis apart from offline and online trainings for several clients both in India and abroad.

In order to improve the effectiveness and the number of in-house trainers, a special 3 day program on “Train the Trainer” was organized for 16 middle and senior level employees.

The other highlights of the first ever training conducted in India on flexible operation of coal-fired power plants. This was a joint initiative of MAHAGENCO, GIZ and SESI and used a specially made and tuned simulator prepared by our ST department. This is expected to be a growth area in the years to come.

Leadership Development Workshops were organized this year for Managers & HODs level at VL JSG site and HMEL sites. A total of over 75 managers participated to develop / enhance skills and behavior for being an effective leader.

As part of the ongoing skill upgradation program, 457 tradespersons and 246 engineers at Jharsuguda and 130 engineers at HMEL were assessed using a Web-based tool to determine the baseline. Subsequently, refresher programs were organized based on the skill gaps.

Fifteenth batch of Graduate Engineers (GETs) was recruited for a one-year induction training program, which commenced on August 16, 2023 and was conducted smoothly. During the program, fifteen trainees have undergone structured sessions on power plant familiarization and O&M aspects. Power plant visits, Simulator-based training, assessments through viva voce, group presentations, and written tests were also conducted. The GETs are now being posted to O&M sites to undergo field and on-the-job training modules under supervision of O&M experts.

Two weeks Competency development program for EGENCO officers (Malawi, East Africa) on “Project Development, Engineering & Economics of CFBC-based Power Project” was organized at Noida with site visit to HMEL Bathinda power plant.

Specialized training programs on O&M topics at GETRI Vadodara for GSECL Engineers (a State Utility) and on-site trainings for O&M engineers at Shree Cement Ltd. and Torrent Power Limited including Simulator-based training were also conducted. 300 engineers attended these programs. Online paid training programs were organized on specialized topics like Grid Code requirements for RE integration, Flexibilization of thermal power plants, Performance optimization, Efficiency improvement, Risk Management etc. and were attended by 250 participants from prestigious organizations across India.

In view of CEA mandate on flexible operation, our focus in 2024 would be on organizing intensive simulator-based trainings on flexibilization for operators working in coal-based power plants. Paid webinars and online programs on specialized topics (PAN India level) will be continued and topics like AI - based tools would be included based on market requirements. In-house skill assessment software has been developed, which would be offered to clients along with trainings. Training of trades, programs for clients like GETRI, Torrent Power, SS Power Ltd, FieldCore will be continued. It will also be ensured that the leadership development workshops organized in 2023 should fetch results and more such programs would be organized.

Saurabh Kumar Mehta
Head – Training & Advisory Services



Achievements of 2023

As we usher in the new year, it is time to recall some of the key events of the past year. The year commenced with the takeover of O&M at Haldia. It may be recalled that SESI had operated the Haldia Captive Plant from 2006 to 2013. We are happy that once again the client has reposed confidence in our capabilities to provide reliable O&M services, which is critical for a process plant. Our team deputed to carry out the O&M activities has achieved stabilization of the plant successfully within the defined timeline. The O&M team has been since then providing uninterrupted power and steam successfully to HPL process plant.

It may also be recalled that the O&M site Hazira was our starting point for O&M services in India in 2001. Our contract there was extended multiple times and finally closed at the end of February 2023. Though it was a difficult emotional moment, we have to move on, especially if the O&M fee was not sufficient to make ends meet.

The year ended with the takeover of Operation & Maintenance services for 2x363.3 MW gas-based combined cycle power plant at Palatana, Tripura of M/s. ONGC Tripura Power Company Limited. Post successful completion of the plant takeover from the outgoing contractor in the presence of client's representatives at midnight of December 31, 2023, the deputed O&M team is working towards stabilizing the plant. This too represents a mark of confidence in our abilities on the part of the client since we had last provided O&M services at this site in the period from September 2016 to January 2021.

The O&M department won another contract from HPCL Mittal Energy Limited (HMEL) for deputation of highly skilled manpower for O&M support of HMEL's 66kV MRS and switchyard located at its ethanol plant for a period of six (6) months (June 30, 2024).

The contract for O&M at Botswana, which had a provision for deputing 21 staff members has been enhanced and now 51 SESI staff members are deputed to Botswana and the contract period has been extended.

The O&M contracts at Kashipur, Bathinda and Vizag continue and it is our aim to get extensions for the first two for periods beyond the present contractual period.

Vision and Projection of 2024

We have bid or will be bidding O&M assignments at:

Bharat Petroleum Corporation Limited.: Bina Refinery for Operation & Maintenance of CFBC-based captive power plant (CPP) and its associated facilities at for a period of 5 years. Also submitted the bid for annual maintenance services for electrical systems at CPP, BPCL Bina Refinery, District Sagar, Madhya Pradesh, India for a period of 3.6 years.

Bids are under preparation for:

- a) SJVN Thermal (P) Ltd., against its published tender for commissioning support & comprehensive operation and maintenance contract of coal-based supercritical Buxar Thermal Power Project (BTPP) (2x660 MW) at Chausa, District Buxar, Bihar, India.
- b) THDC for comprehensive O&M services for its 2x660 MW supercritical plant being commissioned. Expected COD of first units are scheduled for February 2024 (anticipated).

We are also actively pursuing several other opportunities for advisory services in India and abroad (especially in the Middle East and Far East) and with no let-up in demand for power in India, O&M services will continue to be the biggest source of revenue for SESI.

The teams at the sites have matured and we have provided several training inputs through the training department, which have helped improve the management and technical skills of the employees. As usual, the foremost area of attention is safety and there have been several thousand man-hours of training provided to the staff at various sites. This, in turn, has significantly improved the safety record. There were no incidences of fatalities at the sites in 2023 and the number of LTIs have dropped significantly.

M. K. Gupta

Head – Operations & Maintenance

News from the Profit Center Technical Services & Quality



In the ever-evolving landscape of India's power industry, the imperative for power plant owners is to enhance the efficiency and reliability of their aging fleet. This necessity is propelled by the mandate to meet the surging load demands. Rather than opting for the decommissioning route, the prevailing trend is retrofitting and upgrading older plants, ensuring not only their sustainable operation but also their substantial contribution to the escalating energy requirements of the nation.

As a result, the demand for Testing and Diagnostic Services is experiencing an exponential growth. Our dedicated team of experts from the “Technical Services” department has strategically positioned itself to offer a comprehensive suite of services meticulously crafted to address the unique challenges presented by aging power plants. This includes Performance Guarantee Testing, along with in-depth Energy Audits and Technical Audits and Efficiency Monitoring. In addition to our core testing and diagnostic services, we go above and beyond by providing holistic solutions, training, and ongoing support for a broad spectrum of quality-related issues.

The year 2023 started with an assignment for Adani power (MAHAN) to provide testing and efficiency services for performance improvement, followed by services to MAHAGENCO to improve the heat rate of their plants which are more than 25 years old. In the mid of year associated with RKMPL for technical audit and provide consultancy services for system improvement. A highly appreciated project was the assignment carried out in South Africa for Eskom under the overall umbrella project signed by VGBE with the South African government.

The PG test, energy audit, and water audit services to esteem organizations like TANGEDCO, Adhunik Power & Natural Resources Limited, Meja Power Plant and NTPC strengthen our capabilities and recognition. Mill Testing (CAVT/DAVT) is another area, where we have demonstrated a significant foot print with various customers like HPGCL and KSKMPL. The baseline test for combustion modification study with L&T MHI was another success at various power stations. At the end of 2023, we got an opportunity to associate with STAR Cement Meghalaya to resolve their problem and achieve target load.

With the exception of OEMs and TUV, we are the only organization carrying out PG test for power plants with our high accuracy latest set of calibrated instruments. In the recent past we have associated with esteemed organizations like Doosan, GE, L&T and NTPC. In addition, the NABL accredited Transformer Oil Testing laboratory located at our corporate Noida office has been carrying out tests for last decade. Some other notable projects like NTPC Gadarwara and Khargaon provided a new dimension to our Operation and Efficiency (O&E) business, where NTPC has outsourced their O&E cell activities. We have provided 3-4 manpower along with testing instruments to perform the regular testing and reporting of energy efficiency parameters. This offers a comprehensive service for sustaining energy efficiency and reliability.

Looking forward, our Technical Services department has ambitious plans for the future. We envision establishing a cutting-edge laboratory dedicated to conducting performance guarantee tests for Flue Gas Desulfurization (FGD), aligning with the emerging market demand. Additionally, we are gearing up for ASHRAE, RCA, and GIRHA certification to expand our portfolio. This expansion includes a focus on green building auditing, energy auditing for commercial buildings, and Root Cause Analysis (RCA) for resolving problems. These forward-looking initiatives will ensure that our services not only stay relevant but also continue to be cutting-edge and comprehensive.

Lalatendu Pattanaik
Head – Technical Services

News from the Profit Center Project Development and Transmission & Distribution



GLANCE AT THE PAST, GLIMPSE OF THE FUTURE

The Project Development and Transmission & Distribution has been offering a bouquet of services ranging from feasibility study, DPR, PMA assignment, due diligence, asset valuation, Lender's Engineer and techno-economic viability study for coal, gas, biomass and hydro projects in India and abroad to project developers, lending institutions, owners and various other stakeholders in power generation, transmission and distribution sector. The services include a variety of studies and reports at project development stage, project monitoring at all stages of project as well as at the level of mergers & acquisitions.

The department has oriented its activities rapidly to cater to the increasing focus on the renewable sector and some important assignments awarded in 2023 in this sector are listed below:

Solar

- Project Monitoring Agency (PMA) for Rural Electrification Corporation (REC) Ltd. for 330 MW Solar PV Projects belonging to Adani Solar Energy RJ Two Pvt. Ltd. in Rajasthan
- Lenders' Independent Engineer (LIE) for Indian Renewable Energy Development Agency (IREDA) to monitor 15 MW/21 MWp Solar PV Project belonging to Amp Energy C&I Five Private Limited in Tamil Nadu.
- LIE for IREDA to monitor 75 MW/105 MWp Solar PV project belonging to M/s Juniper Green Gamma One Private Limited in Maharashtra

Wind

- TEV Consultant for PFC for 155.4 MW Mytrah Vayu (Indravati) Private Limited (MVIPL) wind project in Andhra Pradesh and Rajasthan.
- LIE for IREDA to monitor 164 MW wind projects belonging to IVY Ecoenergy India private limited in Maharashtra, Rajasthan and Madhya Pradesh.
- Technical Due Diligence Evaluation for Bharat Petroleum Corporation Ltd., for Acquisition of 288.8 MW wind assets belonging to Power Trading Corporation in Madhya Pradesh, Andhra Pradesh & Karnataka.
- LIE for IREDA to monitor 35.4 MW wind projects belonging to NSL Wind Power Company (Satara) Private Limited (NSPL) in Maharashtra.
- Asset Valuation work for Ivy Ecoenergy India Pvt. Ltd., for 89 Wind Turbines in Rajasthan, Maharashtra and Madhya Pradesh)
- LIE for IREDA to monitor 7.5 MW wind project belonging to NSL Wind Power Company (Sayamalai) Private Limited (NSPL) in Maharashtra.
- TEV Consultant for Power Finance Corporation Ltd. (PFC) for 148.9 MW Mytrah Vayu (Tungabhadra) Private Limited (MVTPL) wind project in Andhra Pradesh.
- LIE for IREDA to monitor 27 MW wind project under construction belonging to M/s. DB Renews Pvt. Ltd. in Karnataka.
- Asset Valuation work for Vanilla Clean Power Pvt. Ltd., for 32 wind assets in Rajasthan

Alternate Energy

- LIE for IREDA of 24 MW Cogeneration power plant and 50 KLPD molasses-based distillery of M/s. Core Green Sugar and Fuels Private Limited located in Karnataka
- LIE for IREDA of 5 TPD Bio-CNG plant in Uttar Pradesh under Bioenergy Sector, M/s. Sevozone Energies & Fertilizers Private Limited

EV Transportation

The emergence of EVs, their charging infrastructure requirements and use of different types and chemistries of batteries attracted us to participate in these bids and we booked projects related to 400 EV buses and 3800 EV cars. Various EV projects which we are undertaking are:

- LIE for Aditya Birla Finance Ltd. (ABFL) to carry out the due diligence and progress monitoring of 50 electric buses and allied infrastructure for intercity bus services in Maharashtra.
- LIE for Power Finance Ltd. (PFC) to carry out the due diligence and progress monitoring of 350 (2x175) electric buses and allied infrastructure for intra city bus services in Uttar Pradesh.
- LIE for IREDA of M/S Gensol EV Lease Pvt Ltd (GEVLPL) towards procurement of 3800 Nos. Commercial Electric Cars to be deployed majorly in Delhi / NCR and Bengaluru Region

Green Hydrogen

The green hydrogen projects that have been completed recently are:

- DPR for setting up Hydrogen Valley Innovation Cluster in the State of Kerala
- Review of techno-economic viability study for Green Ammonia Project at Gopalpur, Odisha - PHASE 1 of 600 MTPD (Out of total 1200 MTPD)
- Feasibility Report for Green Hydrogen Hub at Deendayal Port Trust, Kandla, Gujarat for PTC India Ltd.

Besides above, some encouraging discussions are on with various financial institutions to bag few green hydrogen project in future also.

Power Transmission

Transmission sector is one of the fastest growing business thanks to the recent spurt in the development of renewable energy projects in India. Owing to this, we are currently executing five projects for companies like Adani, Sterlite and various financial institutions. Considering recent growth in transmission sector, we envisage a sizeable share of such projects in future also. Moreover, we have successfully carried out one transmission project in Bangladesh recently. Various transmission projects which we are executing are:

- PMA for REC Ltd. of 765kV Khavada-Bhuj Transmission Ltd developed by Adani Transmission
- PMA for REC Ltd. of 220-132kV MP Power Transmission Package-II Ltd. developed by Adani Transmission
- PMA for REC Ltd. of 765kV Beawar Transmission Ltd. developed by Sterlite Transmission
- PMA for PFC Ltd. of 765kV WRSR Power Transmission Ltd. developed by Adani Transmission
- PMA for PFC Ltd. of 765kV Khavada-II Power Transmission Ltd. developed by Adani Transmission

Due Diligence and Advisory

There are number of stressed projects that are proving to be a financial burden to various lenders. To revive these projects and salvage their investments, lenders are seeking expert advice from consultants required for certain transaction. We have already carried few assignments for PwC, Deloitte and other clients and envisage big opportunity in these non-performing assets in future.

Various assignments we have under executed/ under execution are:

- Technical Due Diligence for Deloitte Touche Tohmatsu India Limited of 2x600 MW Athena Chhattisgarh Power Ltd. owned by Vedanta.
- Vendor Technical Due Diligence of 3x350MW and 2x300MW Thermal Power Plant of GMR Kamlanga Energy Ltd. and EMCO Energy Ltd. respectively
- Due Diligence and asset valuation for BPCL of 288MW wind asset of PTC Energy Ltd.
- Re-financing Due Diligence for HDFC of 765kV Lakhadia – Vadodra Transmission Project Ltd. developed by Sterlite Transmission
- O&M Review for PFC of 2X48MW Jorethang Loop Hydroelectric Power Plant and 2X48.5MW Tashiding Hydroelectric Power Plant developed by DEPL and SEPL respectively

Desalination and Sewage Treatment plant

Fresh water in coastal regions and waste water treatment are other areas we have been awarded projects by financial institution. This is another unexplored territory where we expect big growth potential. Some recent projects are:

- PMA for PFC Ltd. of 70 MLD Desalination Plant in District Bhavnagar (Ghogha), Gujarat being set up by Bhavnagar Desalination Private Limited (BDPL).
- PMA for PFC Ltd. of 70 MLD Desalination Plant in District Dwarka (Gandhvi), Gujarat being set up by Dwarka Sea Water Desalination Private Limited (DSDPL)
- PMA for PFC Ltd. of 30 MLD Desalination Plant in District Somnath (Sutrapada), Gujarat being set up by Gir Somnath Desalination Private Limited (GSDPL)
- PMA for PFC Ltd. of 100 MLD Desalination Plant in District Kutch (Mandvi, Gundayali), Gujarat being set up by Kutch Sea Water Desalination Private Limited (KSDPL)
- PMA for PFC Ltd. of 50 MLD Tertiary Treatment Plant (TPP) of Chandrapur Waste Water Management Pvt. Ltd. (CWWMPL)

Solid Waste Management

Solid waste management is a big challenge for urban cities and Govt. has announced many Waste-to-Energy projects to address this problem. Currently we are carrying out three such assignments for financial institutions and foresee many more projects in times to come.

- PMA for PFC Ltd. of 15 MW Waste to Energy (WtE) Project based on Municipal Solid Waste (MSW) at Langariya was in Jaipur District of Rajasthan being set up by M/s. Jindal Urban Waste Management (Jaipur) Ltd. (JUWMJL).
- PMA for PFC Ltd. of 8 MW Waste to Energy (WtE) Project based on Municipal Solid Waste (MSW) at Keru in Jodhpur District of Rajasthan being set up by M/s. Jindal Urban Waste Management (Jodhpur) Ltd. (JUWMJL).
- PMA for PFC Ltd. of 6 MW Waste to Energy (WTE) plant and Bio-methanation plant with Scientific Landfill Facility (SLF) in Kozhikode, Kerala being set up by M/s. Malabar Waste Management Pvt. Ltd. (MWMPL)

Pumped Storage

- PMA for REC of 1440 MW Greenko MP01 IREP Pvt. Ltd. developed by Greenko
- PMA for REC of 500 MW Chtravati Pump Storage Project developed by Adani Green

Plans for 2024

The focus is moving to Green Hydrogen and we expect that assignments in this sector will be added to our existing heavy involvement in the renewable sector.

Rakesh Mishra

Head – Project Development and Transmission & Distribution

News from the Profit Center Botswana



Organizational changes

Following the transfer of the shares of SESBW from Iqony Solutions to SESI on December 30, 2022, Dr. Verghese took over the role of the CEO from Mr. Nagel, and Mr. Yarmal, who was appointed as Director, took over the responsibility of commercial matters from Mr. Strube in April 2023. Mr. Nagel retired in September 2023 and the Board took on record the stellar contributions made by him to the growth of the company from its inception.

Major contract extension

After closure of the full scope contract in January 2019, BPC had awarded SESBW a contract for experts from SESI to assist in improving the reliability of the units. Based on the significant contribution made by 22 staff members deputed by SESI, BPC decided to extend the contract and to deploy 31 additional staff members, which brings the total number to 53.

Key visits to Botswana

Following the enhancement of our contract, visits were made by Mr. Nagel, Mr. Strube, Mr. Renk, Dr. Verghese and Mr. Yarmal in the period from April to November for discussions with BPC management, our local staff and key business partners to ensure that we continue to play a significant and effective role thus increasing the prospects of further extensions and enhancement of the contract.

Significant achievements at MBPS plant

Morupule B Power Station (MBPS) recorded the highest production with 83.55% energy availability (load factor) for the month of January 2023, beating the previous best of 83.05%.

BPC recognized several of our employees during this year for significantly contributing to improved reliability and output of the plant.

Employee events

Dinner events and staff get-togethers were organized during the visits of our senior Management from Germany and India in April, May and November 2023.

Badminton tournaments (jointly with BPC team) and Cricket tournaments were organized in October and December 2023 and prizes were distributed to the winners. Further, Diwali, Christmas and the New Year were celebrated by our team with various team events and fun games

Year ahead – 2024

The team at Morupule B has resolved to exceed the good performance of the last year in supporting BPC and we expect we would be in a position to provide our expertise in more areas to improve the plant availability and reliability.

Renewable energies sector, especially in solar is increasingly significant in Botswana and STEAG is keenly looking at the opportunities and preparing to participate by leveraging the expertise from Germany and India for acquisition of projects in this field. Further, with growing energy needs in the Africa region, SES Botswana aims to participate in opportunities which come up in neighboring countries.

Sridhar Yarmal
Managing Director

News from the Profit Center STEAG Operations & Maintenance Company (SOMC)



STEAG O&M Company Private Limited (SOMC), a Joint Venture (JV) of STEAG Energy Services and Hinduja Energy Limited was incorporated on March 16, 2012 to manage the operations of 2x520 MW coal-based thermal power plant, owned by Hinduja National Power Corporation Limited (HNPCL) located at Visakhapatnam, Andhra Pradesh. The O&M contract is for a period of 25 years. The board of the company comprises 2 representatives of Hindujas –Mr. Puri and Mr. K. Venugopal and three from STEAG –Dr. J. T. Verghese, Mr. Wolfgang Franke and Mr. Werner Renk. Mr. P. S. Kumar is the CEO.

SOMC commenced its operations with support in erection and commissioning from December 2012. The plant achieved commercial operation on July 3, 2016. The present manpower strength in the organization is 217. SESI provides support in several areas and about 175 staff members are deployed at the site through SESI.

During the initial few years, the operations were intermittent, owing to several reasons including inadequate supply of coal, because transportation of coal by road as railway siding work are on hold. Plant operations were stalled between July 2020 and February 2022 due to issues related with approval of power purchase agreement with AP Discoms. After obtaining a favorable order from the honorable Supreme Court to reinstate PPA on January 20, 2022, the plant started its regular operations in February 2022. The plant is now operating at an average PLF of 61.7% with restrictions mainly related coal logistics.

Major achievements of 2023:

- First ever 100% station monthly availability based on running hours – July 2023.
- Highest monthly PLF since inception – 80.4% in October 2023
- Highest continuous running days – 138 days (Unit #1)
- Highest coal receipts in a month – 453413 MT in October 2023
- Highest coal receipts in a day – 20504 MT on October 21, 2023
- Lowest station DM make-up since COD – 0.28% BMCR in July 2023

Plans in 2024:

With the pick-up in industrial growth and domestic consumption after COVID-19, the average power demand is expected to increase substantially in the coming years and it is expected that the plant at Vizag will be fully loaded soon.

Puran S. Kumar
Chief Executive Officer – SOMC

Highlights from the Corporate Office

International orders received

Vietnam

Signing of MOU between SESI and PECC1 on exclusive working on upcoming tender of Long Phu1 consultancy job for detail assessment, budgeting and EPC tender preparation job. SESI Executive chairman Dr. J. T. Verghese and PECC1 General Director and CEO Mr. Nguyen Huu Chinh signed this MOU document in the presence of senior officials from both sides

To strengthen the relationship between Institute of Energy (IE) and SESI, a general MOU on setting up a training center, engineering consultancy in coal-fired project, LNG to power consultancy etc. has been finalized for signature after internal approvals.

After an important presentation at PVN HQ, their training department expressed a desire to receive a proposal for training of their senior managers

South Africa

SESI received a purchase order from Iqony Solutions GmbH on “Independent assessment of ESKOM's operational situation”. Iqony received the PO from VGBE, Germany. The Ministry of Treasury, South Africa is the customer of VGBE. An expert team from SESI (5 persons) including the Chief Technical Officer Mr. Werner Renk visited the three sites of ESKOM (Kusile, Marimba and Medupi) starting from April 17, 2023..

Kingdom of Saudi Arabia (KSA)

Based on a service agreement between JAZAN INTEGRATED GASIFICATION AND POWER COMPANY, KSA and SESI, three experts have been deputed to site for engineering assistance starting from March 11, 2023. SESI is also carrying out many specific engineering assignments from its home office.

Turkey

RLA studies of boiler Unit #2 at SOMA TERMIK SANTRAL ELEKTRIK URETİM A.Ş., Turkey was carried out by our team starting March 21, 2023.

New initiatives

Inauguration of SESI Dubai Office

The branch office of SESI in Dubai was inaugurated by SESI's Executive Chairman, Dr. J. T. Verghese on May 10, 2023 in the presence of Mr. W. Renk, Chief Technical Officer, Mr. Debasish Patra, Executive Director, International Business Development, Mr. Binoy Das, Branch Manager and our accounting service provider Mr. John. We hope to enhance our joint activities in the Middle East along with our sister company Iqony by leveraging this local presence.



Dr. Verghese inaugurating the Dubai office

Acquisition of STEAG Botswana

On December 30, 2022, the shares of STEAG Energy Services (Botswana) Proprietary Limited was transferred to SESI from SESG as part of the restructuring process. The requisite compliances with respect to the said transaction were completed well within the prescribed timelines.

Organizational changes in SES Botswana

Consequent to the transfer of ownership of SES Botswana SES Germany/IQS to SES India on December 31, 2022, the following board-level changes were made on April 27 and 28, 2023.

Mr. Sridhar Yarmal has been appointed as Director on board of SES Botswana. Dr. J. T. Verghese has taken over the role of the CEO from

Mr. Nagel and Mr. Sridhar Yarmal has taken over the responsibility of commercial matters from Mr. Strube. The company will now have two managing directors, namely Dr. J. T. Verghese and Mr. Sridhar Yarmal. Mr. Strube shall continue as director on the board of SES Botswana.

SESBW Management team visit

Dr. Verghese, Sridhar Yarmal and Stefan Strube visited Botswana during the 1st week of November 2023. During the visit, the Management team had various interactions with BPC Senior Management team – CEO, GMG, CFO etc. at Gaborone on November 6 and 10, 2023 and with BPC Plant Manager and other senior managers at the MBPS site on November 8, 2023. Prior to this Mr. Renk visited the plant to review performance. The BPC Management team appreciated the performance of our team during the last one year and expected that the enhancement by an additional 31 member team will further improve plant availability and other performance aspects of the MBPS site.

Change in ownership of STEAG

The present owners of STEAG viz. the consortium of six German municipalities had decided to exit the their investment in STEAG over a year ago.. The incoming owner is Asterion Industrial, who has already declared that it will retain the existing management. The contact persons within STEAG and Iqony will remain the same as before.

Major achievements

International seminar on “Hydrogen – The fuel of the future is here”

After an interval of two years the Annual international seminar on “Hydrogen – the fuel of the future is here” was organized with the support of CEA, NTPC, International Solar Alliance (ISA) and GIZ on Friday, January 27, 2023 at Silver Oak Hall, India Habitat Center, Lodi Road, New Delhi. This was the thirteenth in the series.



International seminar at India Habitat Center

The inaugural session saw addresses by Mr. Ghanshyam Prasad, Chairperson, CEA, Mr. K. R. Jyothilal IAS, Additional Chief Secretary Govt. of Kerala, Mr. Rajnath Ram, Advisor (Energy), NITI Aayog, Mr. U. K. Bhattacharya, Director of Projects, NTPC, Dr. Ajay Mathur, DG, International Solar Alliance, Dr. Ralf Schiele, Board Member, STEAG GmbH, Dr. Winfried Damm, Director, GIZ, Mr. Ulrich Sigel, Board Member, STEAG Energy Services India, Dr. Jens Reich, Board Member, STEAG Energy Services India, and Dr. J. T. Verghese, Chairman, STEAG Energy Services India. The inaugural address was made by Mr. Ghanshyam Prasad, Chairperson, CEA.

Eminent speakers from Niti Aayog, IOCL, IGEF, Fraunhofer Germany, Toshiba JSW, IHI from Japan, KfW, IIT Mumbai, Greenko Group and STEAG Germany participated in the technical sessions of the seminar.

About 240 participants attended the seminar including delegates from CEA, NTPC, policymakers, independent power producers (RE), EPC players, large industrial consumers, oil and gas companies, electrolyzer manufacturers, technology providers, grid operators, researchers, consultants, and investors. The deliberations made during the seminar will help stakeholders in deciding the way forward in the exciting journey of the hydrogen economy.

India's first training program on 500 MW Simulator for flexible operations

In a joint effort between MAHAGENCO, Indo-German Energy Forum (IGEF), VGBE and STEAG Energy Services, the 500 MW Simulator supplied at Koradi Training Center has been customized by STEAG Energy Services, India for flexible operations according to the standards prescribed by CEA.



Simulator training program for flexible operations

The first training program on this flexible Simulator was organized for 14 Operations engineers at MAHAGENCO Koradi Training Center from October 3 to 7, 2023. The program was inaugurated by Dr. P. Anbalagan, CMD, MAHAGENCO. Others who made the speech included Director (Operations), Director (Projects), Executive Director (Koradi Training Center), Mr. Tobias Winter (Director, IGEF) and Executive Chairman, Dr. J. T. Verghese from STEAG India.

The program was conducted by experts from Germany and India: Dr. Claudia Weise (Director, VGBE Germany), Mr. Werner Renk (CTO, SESI), Mr. Saurabh K. Mehta (Head-Training division), Mr. K. K. Mundhada (Senior Consultant), Mr. Mukesh Kumar Gupta (Simulator Trainer) and Mr. Kush Kant Singh (Simulator Expert).

Competency Development Program

Two weeks competency development program organized from February 13 to February 24, 2023

for EGENCO officers (Malawi, East Africa) on “Project Development, Engineering & Economics of CFB coal-based power project”. Interactive sessions at HO Training Center were delivered by in house experts: Mr. Werner Renk, Mr. Rakesh Mishra, Mr. Raja Badsha De, Mr. Vijay Sachdev, Mr. P. K. Bandyopadhyay, Mr. Sandeep Asthana, Mr. Sandip Babu, Mr. Manish Agarwal, Mr. KET Arasu, Mr. Amit Singh and external faculty, Mr. K. D. Paul. The program also included 2 days visit to the HMEL CPP Plant, which was comprehensively arranged by Mr. M. K. Gupta, Mr. Nilesh Narain and team. The program was well appreciated by participants with excellent feedback.



Competency Development Program

Awards for SESI

We are happy to announce that SESI has been honored with two prestigious awards at the Annual Contractor Safety Meet held on March 21, 2023, at HMEL Bathinda Site. Among 47 contractors at the site, SESI was awarded the Best Monthly Safety Campaign Prize. This award recognizes our commitment to promote a culture of safety and raising awareness about safety measures through regular campaigns. In addition, the Plant Manager at SESI was awarded the Best Visible and Compassionate Leadership Award among the contractors. This award acknowledges the Plant Manager's outstanding leadership skills and compassionate approach towards ensuring the safety and well-being of all employees.



Annual Contractor Safety Meet

These awards are a testimonial to our unwavering commitment to safety and our focus on providing a safe and secure work environment for all our employees.

Leadership Development Workshop at VL JSG site

A two-day Leadership Development Workshop was organized for STEAG employees working at the VL Jharsuguda site on November 29 and 30, 2023 at DY Guest House, Jharsuguda with an objective of developing future leaders. The workshop was based on coaching model to manage different personalities and was designed & delivered considering various dimensions of leadership development for skill enhancement of managers to enable them develop the key skills, behaviors and methods needed for being an effective leader.



Leadership Development Workshop at JSG

Mr. Kishore Arcot, Project Director, Mr. R. K. Singh, Plant Head, and Mr. S. K. Mehta, Head-Training division, HO made addresses in the inaugural session. External trainer Mr. Ajay Tyagi from VALT conducted the workshop, which was attended by 28 persons from all the departments with very positive feedback.

Mr. Ajay Kumar Pandey, COO, Vedanta Limited made a keynote address in the concluding session and encouraged to organize more such programs. The vote of thanks was given by Mr. Sanjiv Jha, Head O&M.

In continuation to this workshop, an Advanced Leadership Development workshop was organized by the Training Division and conducted by the external faculty Mr. Ajay Tyagi for 23 HoDs at the VL Jharsuguda site on December 14 and 15, 2023 at Jharsuguda. The program concluded with an address by Mr. Ajay Kumar Pandey, COO, Vedanta Limited.



Advanced Leadership Development Workshop

Two days Leadership Development Workshop organized for HMEL middle management on July 10 and 11, 2023 at Mann's Guest House, Bathinda. Twenty Four (24) persons were trained by the external trainer, Mr. Ajay Tyagi with excellent feedback. The program requirement was received from the site management to develop leaders of future. So, this workshop was based on the Situational Leadership Model and was designed to help participants to hone the skills, behavior and methods for being a leader. An exercise was given by the trainer to the participants to implement the key takeaways and learnings acquired from workshop.



Leadership Development Workshop at Bathinda

STEAG India takes over O&M at OTPCL, Tripura

At midnight on December 31, 2023, SESI took over the O&M of the 700+ MW CC gas-based power plant of OTPCL, Tripura. This becomes the third location after Jharsaguda and Haldia, where the client has recalled STEAG after trying other contractors. Over 10 engineers and other staff led by Mr. M. K. Gupta and Project Manager Mr. Mahida worked for 2 weeks at the site to ensure the orderly transfer of responsibilities. The professional manner of our takeover was highly appreciated by OTPCL management.

Completion of all milestone activities of R&M contract of VL JSG for units #1 and #4

The post-R&M PG test for Unit #4 was completed on December 2, 2023. It is the last milestone with respect to the R&M work of Unit #4 at Vedanta Jharsuguda site. The PG test was carried out by GEPIL (STEAG's subcontractor for R&M). From STEAG side, Mr. Ashok Ravuru (Head, O&E) and other team members were present during the test. The post-R&M PG test of Unit #1 was completed earlier on October 10, 2023.

R&M of Unit #4 at Jharsuguda

Renovation of the boiler and capital overhaul of the turbine and other systems of Unit #4 was

completed at 4x600MW Jharsaguda plant of Vedanta in January 2023. Extensive renovation work was executed including complete replacement of the economizer tube banks, apart from retrofitting new high efficiency burners etc.

The unit was put back in service after a shutdown of 66 days. All this was achieved with the mobilization of over 2500 extra staff with only minor safety violations. An additional team of about 50 safety inspectors, 100 boiler welders, 150 other welders, 20 quality assurance persons apart from 2000 other technicians and helpers worked round the clock to achieve this milestone event. The next R&M will be done on Unit #3 in February 2024.

Achievement of SESI Barauni team

Unit #6 and #7 of NTPC Barauni TPS was brought back to service after almost one and half years. The control room is manned by SESI desk engineers and their contribution was key to the station achieving the highest ever single day generation of 13.578 MU on April 12, 2023 with all the 4 units running.

Our client, NTPC Ltd., has also appreciated SESI's contribution and has written “.... your team has contributed significantly by working extra. Your support was highly appreciated in our tough times...”

Webinar on World Environment Day

On the occasion of World Environment Day (June 5, 2023), a webinar was organized by Training Division HO on the topic “Latest trends and developments in Renewable Energy & Hydrogen Technologies”. The session was conducted by Dr. Arun Kumar V. Participants from various organizations like Development Consultants Pvt. Ltd., Jakson Green Pvt. Ltd., Newtrace Pvt. Ltd., NOMAC, NPTI, ONGC Petro Additions Ltd., SgurrEnergy India Pvt. Ltd. and The Singareni Collieries Company Ltd. etc. attended the webinar with a very positive feedback.

Other highlights

XXII Foundation Day – January 28, 2023

After a gap of almost two years owing to the Corona pandemic and lockdown, the STEAG family came together once again to celebrate the twenty-second Foundation Day of SESI at International Trade Expo Center, Sector 62, Noida. The dignitaries from Germany present on this occasion were Dr. Ralf Schiele, Mr. Ulrich Sigel, Dr. Jens Reich – Board Members of STEAG Energy Services GmbH. The theme of the foundation day was “Flavors of India”, selected in order to showcase the culture and traditions from different parts of India. All employees and their families were divided in four teams that represented different parts of India.

Dr. Ralf Schiele, Mr. Ulrich Sigel and Dr. J. T. Verghese addressed the employees and complimented them on the successful completion of twenty two years. Dr. Verghese also highlighted the acquisition of STEAG Botswana as a subsidiary of STEAG Energy Services India. On this occasion, the dignitaries also released the Annual Newsletter 2023, designed and developed in-house by SESI staff, which showcased the achievements of all sites and departments across India. The event then started with interactive and team-building games, in which all the four teams participated zealously.



Lighting the lamp ceremony



Release of annual newsletter

The post-lunch session started with a game of Tambola. After this, employees from the Corporate Office and the different sites performed on the stage showcasing their talent. Noteworthy performances were given by our O&M sites of Bathinda, Kashipur, Hazira and Jharsuguda as well as by employees of the Corporate Office, Noida. The performances also included a solo song and dance performances by the children of SESI employees from the Hazira site. In between the performances, Dr. Schiele, Mr. Sigel, Dr. Reich and Dr. Verghese gave away the long-service awards to the SESI employees, who had completed their 5, 10, 15 and 20 years of service with the organization.

At the end of the event, Mr. Ashish Malik, Chairman of the Organizing Committee, conveyed the vote of thanks to the dignitaries, the members of the organizing committee, the employees, and the event management company for their enthusiastic participation and whole-hearted support in making the twenty-second Foundation Day a success.

Upskilling of tradesman

Having taken over the technician level staff at Jharsaguda, a program to upgrade their skills was launched after a brain storming session on 12th April conducted by the Dr Verghese. Head-HR, Head-Training, Project Director, Plant Manager and all HODs at VL, JSG participated to

develop the concept. Subsequently, the skill assessment of 457 tradespersons was conducted at the VL, JSG site was conducted from April 13 to 15, 2023 for identifying the training needs and upgrading the skills. In the first phase, the training needs of 118 trade level staff has been finalized jointly by Head-Training HO, site HR and respective the Area Managers. Arrangements are being made to impart both theoretical and

practical training from the first week of May. A proposal is being submitted for assistance from VL to establish the infrastructure for the same. The HO Training division is designing/arranging the training curriculum, lesson plans, faculty and the T&P required for theoretical and practical training. Dr. Verghese also had review meetings with the CEO and COO of Vedanta.

Business News

In sync with the parent company's strategy, we are steering the company towards renewables and it heartening to report that we have, in the past year, taken over the O&M of solar installations totaling 30 MWs in Telangana. Likewise, we have, in the last year, been awarded contracts for OE services for a Waste to Energy plant at Ghazipur followed by a turbine overhauling contract. We have also achieved a breakthrough in FGD technology by bagging orders from Gujarat State Electricity Corporation and APGENCO. We hope to foray into the industrial sector following our success in bagging the O&M contract for the refinery substations at the Petrochemical complex of Arcelor Mittal at Bhatinda. We have also taken up the EPC for a 65 KW rooftop solar plant for the Vatican Embassy and an 18 KW plant for a farm house. Likewise, we have taken the first step into branching out into E-Mobility with the award of the first project for a study in Uttar Pradesh.

Hazira

After a record 22 years, the O&M contract with GSEG at Hazira came to an end on February 28, 2023. SESI handed over all data/information/documents/records/tools & tackles etc. to the new O&M agency as per the requirements and successfully completed the handover-takeover (HOTO) process on February 28, 2023 at 24:00 hours.

Bathinda

STEAG celebrated its 22nd Foundation Day on January 15, 2023 with great enthusiasm and lots of fun. Cultural event and games were organized by STEAG employees & families at the Dunes Club, Bathinda.



22nd Foundation Day at Bathinda

Annual Medical check-up for all employees organized at the Indrani Hospital, Bathinda from October 3 to October 14, 2023.

“Safety Quiz Competitions” organized by HMEL during the Bhopal Remembrance week. Various competitions and activities were organized during the week. STEAG employees actively participated in all the events. Prize distribution ceremony was organized by STEAG on January 17, 2023 at substation-10 first floor, near punching point.

New initiative **“Swachhta Abhiyan”** started on January 20, 2023. In MHS area, a housekeeping campaign has been started. HMEL and STEAG employees actively participated in the event. HMEL appreciated the initiative taken by STEAG.



Housekeeping campaign

Total seventy-three STEAG employees were awarded Safety Star of the month for year-2023.

Training calendar for the year 2023-24 finalized and released to HMEL by Technical Services.

On June 5, 2023, **World Environment Day** celebrated by STEAG at the CPP & MHS areas. STEAG & HMEL employees participated in the events. Senior executives from HMEL were invited for the event. Twenty saplings planted by the STEAG & HMEL team.



Plantation of saplings

On June 14, 2023, a blood donation camp organized by the HMEL Refinery at the OHC (Occupational Health Center) with help of District Health Authority (Bathinda) to celebrate the World Blood Donation day. STEAG team responded to this noble cause and total 5 employees from STEAG donated blood.

On June 15, 2023, an awareness session on Employees Mediclaim Insurance Policy & Group Accidental Policy benefits organized by the head-office.

On June 1, 2023, the new MHS lime yard inaugurated by HMEL-GM Operations Mr. Manish Bewatra. This lime yard is used for emergency lime storage.



New MHS Lime yard

HMEL's Captive Power Plant (CPP) has been awarded the "Power Plant Performance Award 2023" by M/s. Mission Energy Foundation for outstanding performance in operating CFBC, optimizing steam through hot belt and handling ash effectively.



Power Plant Performance Award 2023



Leadership development program

Two days training program on Safety was organized by Mr. Vishal Singla, Director of Factories, on July 12 and 13, 2023 in the HMEL Admin building. Eight STEAG employees attended the training session.



Training program on Safety

Electrical Safety week organized and celebrated by STEAG@CPP from July 3 to 8, 2023 with various competitions like poster making, slogan making, on the spot quiz and 5-minute electrical safety talks etc. The closing ceremony of the electrical safety week was conducted on July 8, 2023 and prizes were distributed. The occasion was graced by the chief guests Mr. Manish Bewatra (GM, OPN-HMEL) and Mr. Sandeep Rakshit (AGM ELEC-HMEL).



Electrical safety week

HMEL organized a Procedure Campaign, 2023, In this competition, STEAG (Mechanical Maintenance Team) won 2nd position in “Write the SMP” competition and Operation & the Maintenance team won 3rd position in “Find the Gap” competition.



Procedure Campaign 2023

A presentation on STEAG best safety practices among the refinery was given by the Plant Manager to all refinery contractors during the contractor safety monthly meeting. HMEL appreciated the same and insisted all contractors/business partners to implement the same practices on their site areas.



Best safety practices meet

The STEAG team successfully commissioned and executed the NG (Natural Gas) skid in CPP. After PSSR (Process Start-up Safety Review) and PESO (Petroleum and Explosives Safety Organization) inspection and approval, NG skid taken into service successfully. Both gas turbines trial taken successfully on August 18, 2023.



Commissioning of NG skid in CPP

Vishwakarma Puja organized by STEAG employees on October 17, 2023 at CPP Substation 10. Both STEAG and HMEL employees participated in the Puja and made it a great success.

On October 23, 2022 Navratri UTSAV organized (RAAS GARBA & DANDIYA) along with cultural events at the Dunes club, Bathinda.

STEAG employees celebrated the birth anniversary of Shri Guru Nanak Dev Ji at Ramsara Gurudwara on November 24, 2023.

Kashipur

Implemented safety performance standards. Housekeeping drive, 12 leadership safety walkthrough (observations raised 138 & closed 125), safety awareness programs (safety training): 2398 man hours on 56 topics, 2782 safety tool box meeting (2109 man-hours), 74 induction programs (222 man hours), 12 EHS meetings (issues raised 17 & closed 11), near-miss reporting (NM raised 253 & resolved 244). To bring the awareness among the employees and their families, various important safety related programs celebrated etc.

Plant being operated & maintained successfully without having any incident or accident during the year 2023. Total LTIA free man-hours worked at the Kashipur site during this year 2023 are 1,10,592 and since inception (commencement of PO) are 9,99,918.

During 2023, plant was in operation for short duration from April 10 to December 10, 2023 (1738.03 hours). Otherwise, rest of the time it was completely under shutdown because of high imported LNG cost. Plant equipment kept under preservation and rotating equipment availability maintained through schedule trial runs. Condition-based maintenance schedule followed.

The festival of Lohri celebrated within the plant premises on January 12, 2023. Lohri is a popular winter Punjabi folk festival, celebrated primarily by Hindus and Sikhs from the Punjab region of the northern part of the Indian subcontinent. The main attraction of Lohri is the huge bonfire lit up and people singing and dancing around it.



Lohri celebrations

74th Republic Day celebrated on January 26, 2023 at the Gama plant with a tricolor hoisted by Mr. Rajiv Dhenge/GGM (O&M) followed by a speech and distribution of sweets with light refreshment. This year, the theme of India's Republic Day 2023 was "Jan Bhagidari (participation of the common people).



Flag hoisting on Republic day

The **National Fire Services Day** celebrated on April 14, 2022. STEAG-EHS organized the awareness training for employees on plant firefighting systems. The use of various types of portable extinguishers & hydrants system during fire was explained. The precautions to be taken while fighting the fire were also told.



National Fire Services Day

Festival of Lord Ganesha: Celebrated at the Kashipur site within the plant premises from August 31 to September 9, 2023. On September 8, 2023, "Shree Satya Narayan Pooja" organized followed by lunch for all employees and their family members. At the end, on September 9, 2023 immersion of idol of lord Ganesha in water body after a gala street procession done. This 10-day long festival commemorates the birthday of Lord Ganesha who is considered as the god of knowledge, wisdom, luck and prosperity.



Ganesha Puja celebrations

Vishwakarma Puja celebrated on September 17, 2023 in the plant premises with lots of joy and happiness. Vishwakarma is considered asswayambhu and creator of the world. The worker prays for better future, safe working conditions and success in their respective fields on Vishwakarma Puja. Machines and tools worshipped so they can harbor prosperity of the business and are put to rest on this day for smooth functioning in the long run. Mr. Rahul Goyal – MD, Mr. Y. P. Arora – VP and Mr. M. K. Gupta – Senior ED joined the function and graced the occasion.



Vishwakarma Puja

Structured Annual Training Program for the development of O&M team planned at the beginning of each year and released. Depending on the plant-specific requirements, different technical training sessions conducted by internal experienced engineers once in a month for each individual. A full day training for O&M team members in two groups, on specific topics conducted without disturbing the plant O & M activities. During 2023, technical sessions conducted for engineers on 60 topics (1318 manhours) and on 63 topics for technicians 63 (563 manhours).



Annual training program

Awards for the best employee, technician and safety champion for the year 2023 given away by Mr. Rajiv Dhenge – ED: Best employee 2023: Mr. Narendra Sharma – Shift in-charge; best workman (technician): Onkar Singh – technician (Mechanical) safety champion: B. N. Pandey – Senior Chemist and best contractor employee: Sunil Kumar – AKFS Services (housekeeping).

Jharsuguda

In the month of April 2023, technical training was imparted to the employees of AHP, TG/BOP and BMD. An online training program was conducted on **“Communication Skills and E-mail Etiquettes”** for the site employees by Mr. Samir Sachdeva on April 20 and 21, 2023.

Long-service awards given by the Executive Chairman, SESI to the employees at the site on April 13, 2023.

In the month of May 2023, two batches of classroom and practical refresher training of tradespersons (riggers, fitters etc.) were completed at the Jharsuguda site. Electrical safety and electrical maintenance training was provided to the Electrical Department from May 23 to 27, 2023 by Mr. Satyavir Singh Yadav, Senior Faculty, STEAG Power Plant Learning Center. Training programs on 5S and Kaizen were also conducted for the employees of STEAG by the client (BE Team) on May 17 and 24, 2023 respectively.

In the month of September 2023, technical training was provided to the employees of TMD and BOP. Third batch of riggers classroom and practical training and Simulator training were conducted in the month of September 2023. An online training program was conducted on **“Train The Trainer”** for the employees at site by Mr. Samir Sachdeva on September 21 and 22, 2023.

Vishwakarma Puja was performed on September 17, 2023 at the Jharsuguda site and Mahabhog was arranged on September 18, 2023 for the employees of STEAG, sub-contractors and the client.

In the month of October 2023, a training on upskilling of electricians was provided by Mr. Vinod J. Patel from October 9 to 14. Other training programs conducted were Simulator training and classroom training in Water Chemistry, TMD and Operations department in October 2023. Second batch of welder classroom and practical training conducted from October 9 to 16, 2023.

Online training programs were conducted by Mr. Rajan Vidyarthi, Manager – Operations for the employees of Operations department.



Upskilling of electricians



Training of welders

Rewards and Recognition program of August 2023 on various categories was conducted on October 03, 2023. Best Department was the IT Department.

Employee engagement activity for the employees of the Jharsuguda site initiated with Carrom Board competition in the month of October 2023.



Carrom Board competition

Leadership Development Training Program conducted for the employees from November 29 to 30, 2023 by Mr. Ajay Tyagi.



Leadership Development Program

Other training programs conducted in the month of December 2023 were Simulator training, IBR welder classroom and practical training.

Rewards and Recognition program of September 2023 conducted on November 7, 2023. CHP was awarded as the best department.

A drawing competition was held for the age groups of 4–12 years and 13–18 years for the children of employees on November 14, 2023.

Advanced Leadership Development Program – “Accountable Leadership” conducted for HODs on December 14 and 15, 2023 by Mr. Ajay Tyagi.



Accountable Leadership

A training program conducted for the employees of Water Chemistry, Stores, TMD and on Quality Circle in the month of December 2023.

Rewards and Recognition program for October 2023 conducted on December 13, 2023. BOP was awarded as the best department.



Best department award

SOMC

National Safety Day celebrated on March 4, 2023. On the occasion of the National Safety Day, following awards distributed during the celebrations:

- **Best Safety Conscious Employees & Workers for the year 2022-23** – 34 employees.
- **Best Housekeeping** – CHP.
- **Best Safety conscious Dept.** – BMD.
- **Good initiative for gardening' work** – Drivers team.
- **Best Safety Champion for the year 2022-23** – BMD, Mr. Surender.

External safety training on general safety and incident alerts conducted by M/s. Fire & Safety Technology services Pvt. Ltd.

Blood donation camps organized on April 13, 2023 by Lions Club, in which 39 units of blood were collected.

National Fire Service Day observed on April 14, 2023 at the fire station. Six motivational gifts given to the best fire crew by the CEO.

Botswana

We achieved 83.55% energy availability (load factor) for the month of January 2023, beating the previous best of 83.05%. Our team achieved the major milestone of best production for MBPS in the month of January. The reward for this achievement, golf T-shirts along with 300 BWP

vouchers, was given on March 24, 2023 to our STEAG team along with the BPC team as a sign of appreciation.

Mr. Werner Renk, Chief Technical Officer of SESI visited the Botswana site from May 7 to 9, 2023. The purpose of his visit was to find possibilities of improving the reliability of the plant.

We are happy to inform that our team has met the target of near-miss reporting as on date. The Power Station Manager and the SHE department recognized one of our SESBW employees, Mr. Syed Subhani, Senior Engineer (AHP Maintenance), as the best near-miss reporter and appreciated him with a reward.



Award for near-miss reporting

Out of 31 additional employees for the STEAG Botswana site, 26 employees joined in their roles after the successful completion of onboarding formalities.



Introduction of SESBW new team

Diwali celebrations: An outdoor team event was organized on November 11, 2023 at Little Paws Tea Garden in Palapye, in which the entire team had a fun time during the day program.



Diwali party on November 11

Haldia

New initiative **“CPP SWACHH DRIVE”** started in February 2023. The 2nd half of every Friday is scheduled for housekeeping activities in the plant premises, which is called as “CPP Swachh drive” where every employee of STEAG & HPL actively participate to make the campaign successful.

The **“International Women's Day”** was celebrated by discussing the achievements of women in social, cultural, and political fields and to embrace the women employees of STEAG and others contractual employees.

Environment, Health and Safety (EHS)

We remain committed in 2022 to achieving high standards of safety, as the Health & Safety of our employees, contractors, business partners, and customers is always an agenda for STEAG Energy Services India. We achieved several milestones in Health, Safety & Environment involving all our teams, from top management to the last person on the field. Considering this, SESI has developed and implemented several EHS processes in the field, implemented on the ground, and communicated. Our safety policy is the commitment of our Executive Chairman to ensure everyone reaches home safely and we achieve the goal of the organization of creating a safe and healthy workplace, as no job is so important that we cannot do it safely and without adverse environmental impact.

Jharsuguda

We are proud to announce a new and innovative approach to safety training at the Vedanta Jharsuguda TPP by STEAG Energy Services. The company has established a **“SURAKSHA RATH”**, a safety training vehicle that moves to different areas and provides training on various topics to shop floor personnel. This training vehicle is also suitable for daily TBT, toolbox talk and safety briefing in areas, where classroom training is not possible.

The "SURAKSHA RATH" serves as a mobile training facility making it possible to provide training at various locations and ensures that all persons receive the necessary safety training.

This new approach will significantly improve the safety training process at TPP and ensure that all persons are well-informed and prepared to work in a safe environment.

The 22nd Sankalp Diwas program was celebrated at the site, which provided us with an opportunity to reaffirm our commitment to EHS. During the program, we emphasized the importance of safety awareness, and our team members took a pledge to prioritize safety above all else. This event was a significant milestone in our ongoing efforts to promote a culture of safety and awareness.

The STEAG JSG site celebrated the 52nd National Safety Week with various safety motivational activities organized with Vedanta Power COO, Mr. Ajay Pandey & STEAG-Vedanta leadership team. During the closing ceremony, safety awards were distributed to employees who showed improvement in safety, including two rescuers who saved a group of workers from ash silo 4.



National Safety Week at Jharsuguda

We celebrated the National Fire Service Day ceremony on April 14, 2023 at the site, where our STEAG-Vedanta leadership team organized different fire safety motivational activities. During the event, our team members participated in various safety activities such as quizzes, skits, and poster-making competitions that helped them understand the importance of safety at the workplace. The events were designed to be interactive and engaging, and the participation from our team members was remarkable.

International Biodiversity Day Celebration:

We celebrated International Biodiversity Day with the theme “**From Agreement to Action: Build Back Biodiversity.**” The purpose of this celebration was to raise awareness about the critical importance of biodiversity and its preservation. As part of the event, an on-the-spot quiz competition on biodiversity conservation was organized.

World Environment Day: The World Environment Day was celebrated at the site on June 5, 2023 and was attended by client Mr. Ajay Pandey (COO, Power of VL) and SESI Senior Management, as well as other senior leaders. The event was a significant step towards raising awareness and promoting environmental conservation.



World Environment Day at Jharsuguda

GATE Meeting – Strengthening Collaboration for Safety:

On 1st of every month, an insightful GATE meeting took place at the safety park, with the esteemed presence of both Vedanta and STEAG Management. This event brought together participants from various teams, fostering a collaborative spirit towards our shared safety goals. The meeting facilitated open discussions, knowledge sharing, and strategic planning to ensure a safer work environment for all.



GATE meeting at Jharsuguda

HMEL Refinery and PETCHEM, Bathinda

The STEAG and HMEL leadership team conducted a monthly safety briefing on road safety with the theme “Bring the Change by Changing Your Driving Habits” at the CPP and MHS area.

Weekly toolbox talks: The MHS and CPP area had weekly mass toolbox talks about various safety topics, including PSM Campaign 2022, line break activities, contractor safety audits, and OISD observations.

Road Safety Campaign: The Road Safety Week campaign was celebrated from January 11 to 17, 2023 to raise awareness among people with different road safety awareness programs and activities. The campaign included vehicle inspections by the STEAG Safety team, a road safety poster competition, and a NUKKAD NATAK performance on road safety. Approximately 55 employees participated in the NUKKAD NATAK, and four employees participated in the on-the-spot quiz competition.

Competition rewards: A total of 70 winners of the PSM week campaign competition were rewarded by the chief guest of HMEL during the closing ceremony. In addition, 8 STEAG employees were rewarded by HMEL for “**Exemplary Work in Safety**” for the second of 2022-23.

Eleven supervisors underwent pre-job discussion assessments conducted by the safety team in February. This assessment ensures that all

necessary safety measures are taken before starting a job, thereby preventing accidents and injuries.

We are proud to announce that the color coding of all portable electrical equipment, safety harnesses, and lifting tools and tackles has been successfully completed for January to June 2023. This initiative ensures that all equipment is properly labeled and maintained to prevent accidents and injuries.

The 52nd **National Safety Day** observed from February 25 to March 5, 2023 with the yearly theme “**Our Aim Zero Harm**”. STEAG employees participated enthusiastically in the campaign held by HMEL-GGSR refinery. Participation included competitions like slogan writing, essay writing, safety posters, spot the hazard (field)/NMS /unsafe act reporting, best ODSO, best PJD of supervisors, learning from incidents at the HMEL refinery, 5-minute safety talk and on the spot quizzes.

Fire and Safety Week campaign organized from April 4 to 14, 2023. Fire and safety awareness programs like fixed fire hydrant fighting equipment handling training, SCBA training, fire extinguisher drill competition etc. were organized.

National Safety Week campaign closing ceremony held in April 2023, A total of 362 employees rewarded in various safety competitions (slogan competition, poster competition, best PJD (pre-job discussion), best ODSO (one-day safety officer), 5-minute safety talk, on the spot quiz etc.).

Learning from Incidents book launch: We released the “Learning from Incidents-II” book, a comprehensive compilation of incidents and their learnings from 2018 to April 2023. The book was inaugurated by our esteemed guests, including Mr. A. S. Basu, HMEL COO Refinery, Mr. Krishan Tuteja, HMEL VP-Operations, and Mr. Ramesh Chugh, HMEL VP Technical Services, among others.



Book release “Learning from Incidents”

Training programs and test validation: To motivate and educate our workforce on safety, we organized training programs on topics including Safety Rules, Regulation Operations Procedure, Management of Contractor Safety violations, Confined Space Safety, Star reporting, and Helper Training. Additionally, we successfully completed the validation of tests related to these programs.

External ISO surveillance audit: We are delighted to announce that the site has completed the External ISO 9001:2015 & ISO 14001:2015 Surveillance Audit successfully, without any non-compliance. This achievement reflects our unwavering commitment to quality and environmental management systems.

SSK supervisor linked with field coaches: As part of the HMEL IIF ODSO Certification-Phase 2, the SSK Supervisor was linked with Field Coaches. This collaboration will further strengthen our safety practices and drive continuous improvement.

Safety Slogans And Signage: We completed the stencil work for safety slogans and signage at the CPP & CFBC area, enhancing awareness and reinforcing safety practices throughout the site.

World Environment Day: World environment day was celebrated at the CPP and MHS area and during the celebration plantation drive was conducted.

Mock drill: For preparedness in emergency situations, a mock drill conducted at the CPP

area about chlorine leak from tonner lower liquid valve gland in chlorination room. Further, level 1 mock drill conducted during process safety campaign about procedure compliance at the MHS area.

Reward and Recognition: We took the opportunity to honor six diligent STEAG employees. Their devotion to safety saw them named the July 2023 safety stars. Special mention to Mr. Raghunath Panda who was awarded the STEAG-Safety Star of the Year FY-2022-23 and Mr. Vikrant Singh who was named the "Best IIF SSK Supervisor in PJD Discussion" for June 2023. Furthermore, we recognized two of our drivers for their adherence to safe driving practices in 2022-2023.



Rewards and recognition at Bathinda



Safety badge – Bathinda

Electrical Safety Week Campaign: From July 3 to 8, 2023, we organized an Electrical Safety week campaign, which included various awareness programs and a substation audit.

Recognizing Safety Stars: We're proud to announce that five dedicated STEAG employees were recognized as Safety Stars of the Month for July 2023. These exemplary individuals were

acknowledged by both the HMEL and STEAG leadership teams during the August monthly safety briefing.

Honoring Safety Campaign Contributors:

Three of our outstanding employees were honored by HMEL for their exceptional contribution to the Chemical Safety Campaign and Electrical Safety Week Campaign. Their dedication and commitment are truly commendable.

Engaging Safety Month-Long: Introducing a new initiative: the Monthly Safety Theme Banner display at CPP, CFBC & MHS areas. This initiative aims to encourage maximum participation in the Monthly Safety Theme activities throughout the month, fostering a culture of safety at every step.

Inspiring Best Practices: We take pride in our best safety practices, and the Plant Manager shared these practices with our esteemed refinery contractors during the Contractor Safety Monthly Meeting. HMEL encouraged all our partners to adopt and implement these practices within their respective areas.

IIF Update: IIF listening tour conducted by HMEL COO, Mr. A. S. Basu at UB-6 during shutdown job. Three STEAG employees were rewarded by him for on the spot quiz & excellent IIF (Incident and Injury free) contributions.



IIF prize distribution

Swacchata Abhiyan: In MHS (Material Handling System) area, housekeeping campaign carried out. HMEL and STEAG employees actively participated in the event. HMEL appreciated the culture maintained by STEAG.

HMEL Monthly Safety THEME- “LINE OF FIRE”:

Organized several HSE awareness activities successfully consisting of TBT, HSE trainings, TBT/PJD Evaluation, HOD safety walk/ listening tour, Substation Audits, NMS/STAR reporting & leadership walk, Lifting Tools & tackles inspection, full body harness inspection, Firefighting equipment's inspection, Portable Ladder inspection & by- Cycle inspection, etc.

100% confined space entry training for entrants/attendants. Seventy two (72) confined space attendant assessments done during the UB-06 shutdown jobs by the STEAG EHS department.

HMEL Monthly Safety Theme – Near-miss/ Unsafe Act/Condition Reporting - organized successfully several HSE awareness activities, like TBT, HSE training, TBT/PJD evaluation, HOD safety walk/ listening tour, sub-station audits, NMS/STAR reporting & leadership walk, full body harness inspection, firefighting equipment inspection, portable ladder inspection, vehicle inspection, bicycle inspection, etc.

Seven STEAG employees were the winners of STEAG Safety Star of the month in November 2023, and all the winners were awarded by the respective HMEL and STEAG leadership team during the monthly safety briefing on December 1, 2023.



Award of Safety Star of the month

174 unit orientation trainings done for other employees UB-05 and UB-01, shutdown.

100% confined space entrant and attendant awareness program conducted on Confined Space Safety UB-05 & UB-06 shutdown activity.

IIF listening tour conducted by HMEL COO, Mr. A. S. Basu at UB-05 & UB-01. The HMEL COO rewarded 4 employees for IIF contributions.

Reward and Recognition: We took the opportunity to honor 84 diligent STEAG employees. Their devotion to safety saw them named the **safety stars**. Special mention to Mr. Raghunath Panda who was awarded the STEAG-Safety Star of the Year FY- 2022-23 and Furthermore, we nominated two of our drivers for their adherence to safe driving practices in 2023.

Head Office Safety Audit- Half-yearly audit completed by Mr. Vijay Kumar Tata, General Manager / EHS, Industrial Relations and Compliances.

Monthly safety briefing conducted for all employees and contractor workers on the theme **“Road Safety”** near SS-88 STEAG office.

To enhance the safety knowledge and skills of all team members, EHS training was conducted in February 2023 on various topics such as Induction Training, Permit To Work System, SSK-Module 1 & 2, LOTO Refresher Training, and Risk Assessment of Housekeeping.

A monthly safety briefing was conducted in March 2023 on the theme of **“Hand Injury Prevention, Learning from Incidents & National Safety Campaign-2023”** and was attended by all employees and contractor workers.

Seventy six persons were awarded at the closing ceremony of National Safety Week for winning different events that were organized during this campaign.

In the month of April 2023, our leadership team conducted a monthly safety briefing on the

theme of "Emergency Response and Disaster Management Plan & Fire Service Day." The briefing aimed to raise awareness among employees about quick response during emergency situations.

We are pleased to announce that the safety sticker implemented on helmets and the unauthorized restriction stickers are displayed on all substations and cable cellars. These stickers remind our employees to prioritize safety at all times. 6. We remain committed to maintaining a safe workplace and will continue to implement measures to ensure the safety of our employees.

STEAG Safety Star: We take pride in recognizing our employees' dedication to safety. In May, three deserving individuals were rewarded for their exceptional contribution to safety through the STEAG Safety Star of the Month initiative. These awards highlight the importance of reporting near misses and encourage a proactive approach to identifying potential risks.

Learning from Incidents – LFI Session: We believe in learning from incidents to prevent their recurrence. Recently, an Incident-LFI session was conducted on-site to create awareness about an electrical flashover incident. This session enabled us to analyze the incident, identify key learnings, and implement preventive measures to mitigate similar risks in the future.

PPE Compliance & Permit Folder Implementation: Compliance with personal protective equipment (PPE) guidelines and permit procedures is essential for maintaining a safe work environment. We are pleased to announce the successful implementation of PPE compliance and permit folder systems during the recent permit-to-work audit.

Training Programs – Knowledge Enrichment for a Safer Tomorrow: Continuing the momentum of knowledge sharing, several training programs were organized during August, contributing to a safer and more informed work environment.

- **Technical Training:** A total of 25 individuals participated, further enhancing their technical prowess.
- **Client Safety Induction:** The significance of safety reached few more individuals through this induction program.
- **IIF Training:** Participants immersed themselves in the intricacies of IIF, emphasizing the interplay between individual and collective safety.

TPI Certification – Elevating Equipment Standards: Setting a commendable standard for equipment quality, a noteworthy achievement was unlocked with the successful completion of 10 new breaker trolley TPI certifications. This accomplishment speaks to the commitment to excellence and safety that reverberates throughout the STEAG site.

IIF Supervisory Certification – Pioneering Safety Leadership: Recognizing the critical role of leadership in driving safety, Arun Prasad and Sourav Suman were nominated for the IIF Supervisory Certification. This initiative underscores the importance of embodying safety principles and championing them at every level of the organization.

One person awarded **Safety Man of the Month** for his exemplary work. Two persons awarded **Employee of the month** for their exemplary work during job execution.



Employee of the month award

IIF listening tour conducted by HMEL PETCHEM, Tech GM, Mr. Anshu Sharma at SS-86. Among other business partners, only STEAG business partner employees (2) were rewarded by Mr. Anshu Sharma for on-the-spot quiz & excellent IIF contributions.

Onsite safety tour conducted by Site in-charge Mr. Niranjan Sahu & Mr. Arun Prasad and 2 employees were awarded for their onsite safety awareness and on-the-spot quiz performance.

PETCHEM half-yearly audit completed by Mr. Vijay Kumar Tata, General Manager / EHS, Industrial Relations and Compliances.

As a token of appreciation, one person rewarded as “Safety Man of the Month”, one person rewarded as “Best Employee” and one person rewarded as “Best Driver”.



Rewards & Recognition - PETCHEM

Hazira

Monthly monitoring of the environment and workplace was conducted to ensure compliance with regulations and to identify potential hazards.

Successfully completed the ISO 9001:2015 2nd surveillance audit conducted by M/s. ISOCAR without any non-conformities (NC).

Kashipur

We are happy to report that there were no first-aid, medical treatment or lost time injury cases during this period.

The National Road Safety Day celebrated at Gama Power Plant on January 17, 2023 under the theme of “Sadak Suraksha Jeevan Raksha”. Rally with banners taken outside the plant in nearby locality to spread the awareness about the importance of road safety. The Govt. of India announced the observance of the Road Safety Week Campaign from January 11 to 17, 2023.



National Road Safety Day celebrations

Emergency Preparedness: To ensure preparedness in critical situations, we conducted a mock drill this month that simulated a minor gas leakage in the gas skid area. Such drills allow us to evaluate our emergency response procedures and identify areas for improvement, enabling us to handle unforeseen circumstances more effectively.

52nd **National Safety week** celebrated from February 26 to March 4, 2023 with the National Safety Theme “**Our Aim – Zero Harm**” at the Kashipur site. Various competitions – Essay writing (Hind/English), safety slogans (English/Hindi), safety quiz and drawing competition organized to spread the importance of safety among employees and their families. Closing ceremony conducted on March 4, 2023 with a distribution of prizes to the winners of different competitions held during the week.

Program started with a safety pledge by all the employees. At the end, Mr. Rajiv Dhenge/GGM & HOD's distributed the prizes to the winners of different competition, which took place during the week.

Mr. Rajiv Dhenge highlighted the importance of safety in day-to-day life to prevent mishaps and accidents resulting out of neglect or lack of awareness. The aim of “zero harm” in safety is to create a safety culture where all workers can

return home safely at the end of each day. This goal is becoming increasingly important as the number of workplace accidents and injuries continues to rise. To achieve the aim of “zero harm”, it is important for us to have a strong safety culture in which safety given the highest priority.



Pledge being taken on Safety Day

The World Environment Day celebrated every year on June 5 and aims at raising awareness and celebrating environmental action. This year's campaign, celebrated at Gama plant, focused on solutions to plastic pollution under the campaign theme #Beat Plastic Pollution”. Mr. Y. P. Arora – VP, Mr. K. S. Yada – GM and Mr. Rajiv Dhenge attended the function and highlighted the need to take concrete action to achieve transformative change to tackle the climate crisis. Saplings were planted followed by refreshments.



Saplings plantation on World Environment Day

Mock drill: Mock drill conducted together with the Kashipur fire station on November 22, 2023. The mock drill helps employees to react quickly and safely as soon as during an emergency crisis. This plays a vital role in health and safety

Proactive Leadership Safety Walks: Our leaders are driving the conversation forward by

conducting frequent safety walks to encourage safety awareness within the organization. These initiatives help us connect directly with the workforce, detect potential threats, and follow safety protocols.

Haldia

Various Environmental Health and Safety (EHS) training programs have been conducted to provide our team members with a better understanding of safety measures. These programs cover areas such as work at heights, confined spaces, electrical safety, gas cylinder safety, hot work, waste management, and how to use SCABA. We believe that such training is essential to ensure that our team members are well-equipped to handle any potential risks that may arise.

Additionally, regular toolbox talks (TBT) are conducted in the gas turbine area to educate our employees about the latest safety measures and updates in the area. Furthermore, an E-permit system has been implemented at the site to ensure that all work permits are approved and recorded electronically, reducing the potential for human errors.

The 52nd National Safety Week was organized at the site to promote workplace safety. The event aimed to motivate employees to prioritize safety in their work practices. Several programs were conducted during the week-long event, including a safety belt-wearing competition and quiz competitions. These programs encouraged employees to learn more about safety measures and to adopt safe working habits. The event was a great success in raising awareness about workplace safety and promoting a safety-conscious culture among employees.

On April 14, 2023, the STEAG site celebrated National Fire Service Day with great enthusiasm. The event aimed to raise awareness about fire safety among employees. To mark the occasion, a drama was conducted, and an exhibition was set up to showcase different firefighting

equipment. The event was a huge success and helped to educate employees about the importance of fire safety.

Training Programs: Enhancing Knowledge and Preparedness – The STEAG Haldia site has consistently placed a strong emphasis on equipping our team with the knowledge and skills they need to identify hazards and manage risks effectively. This period saw two significant training programs that aimed to further enhance our collective expertise:

- **Hazard Identification & Risk Assessment Training:** Participants had the opportunity to dive deep into the world of hazard identification and risk assessment. By understanding potential risks and hazards associated with various tasks and processes, our team is better equipped to proactively implement preventive measures and respond appropriately.
- **Man-Machine Handling Training:** The safe interaction between humans and machines is a cornerstone of workplace safety. Our team participated in a comprehensive training program that highlighted best practices for safely handling machinery, ensuring that every task is carried out with the utmost caution and care.

HNPCL, Vizag

As a safety campaign, our sites organized the Fire Service Day on April 14, 2023. During the program, six rewards were distributed to the best fire crew, and ten motivational gifts were given to workers. Additionally, Fire Training with Demo and On-spot Assessment was conducted for staff and workers at different locations in the plant.

To prepare for the summer season, a Heat Stress Awareness Training Program was conducted by OHC Doctor for staff and workers at different locations in the plant. This will help raise awareness about heat stress and ensure that the workers are equipped to handle the rising temperatures during the summer months.

Alcohol Consumption Test: As part of our commitment to maintaining a safe work environment, an alcohol consumption test was conducted at the main gate of HNPCL. This initiative is crucial in ensuring that everyone on site is fully alert and focused on their tasks, contributing to overall safety.

Emergency Rescue Operation Training: We believe in the importance of preparedness and quick response in emergency situations. To create awareness and enhance our rescue capabilities, internal emergency rescue operation training sessions were conducted by our dedicated fire crew.

Hydrogen plant commissioning and overhauling: It was appreciated for the site that the hydrogen plant commissioning and overhauling was completed in June 2023.

Educational Initiatives: We've made substantial efforts in strengthening our safety culture with informative awareness sessions. The team underwent an external session on multi-gas leak identification & detection tests, on-site emergency awareness training at diverse plant locations, and viral conjunctivitis awareness training administered by a medical professional.

Inspections and Testing: Rigorous testing and inspections have been the backbone of our safety endeavors. An updated OHC medical inspection checklist was successfully implemented, while a third-party inspection was carried out for various lifts and hoists. DV spray testing and safety inspections were carried out at multiple locations, with immediate corrective actions taken wherever required.

Sign boards installation for safety awareness: Two shaded emergency assemble points have been repainted and test dates & due dates for 29 pressure vessels painted. Four caution sign boards painted and written slogan as "Mind your Head" at boiler area and danger signage board painted at FOPH area.

Reward and Recognition: Three motivational gifts presented to workers.

- PTW authorization training and assessment given to two staff members from the C&I department.
- License renewed for electrical installation and maintenance work of the above 33 KV all voltage, valid till October 31, 2025.

Safety initiatives: We've made substantial efforts in strengthening our safety culture with informative awareness sessions. The team underwent job-specifics of work at height, confined space and usage & importance of PPE's, ash handling at the ash pond area, LDO tank cleaning activity safely by team.

Reward and recognition: Motivational gift presented to three employees for demonstration of best safety behavior at the site

MMEPL, Kothagadi

The 52nd National Safety week was celebrated at the MMEPL Kothagadi site to promote occupational health & safety among employees and business partners.

Various activities were conducted such as safety mock drills, safety drawing competitions, safety awareness programs, safety essay competition, quiz competitions, flag hoisting, and distribution of prizes to the winners.

Empowering Through Training: We remain dedicated to building a knowledgeable workforce. This month, we have conducted training programs covering Tools Handling and Equipment Safety, Safe Handling of Grass Cutting Machine & Tools, Effective Method of Module Cleaning, Monsoon Preparedness and Electrical Safety etc.

Achieved Zero Incidents: We are proud to announce that the period of January 2022 to September 2023 was incident-free at our site. This remarkable achievement underscores our

collective dedication to safety. It serves as a powerful reminder that safety is not just a goal but a shared responsibility we uphold every day.

First-aid and fire services: Our STEAG Kothagadi, provides medical attention that is usually administered immediately after the injury occurs. And also we train the employees to the fire prevention and control. Conducting weekly meetings with business partners.

Achieved zero incidents: We are proud to announce that effective January 2022 to December 2023, our site was declared as incident-free owing to implementation of safety systems. This remarkable achievement underscores our collective dedication to safety. It serves as a powerful reminder that safety is not just a goal, but a shared responsibility we uphold every day.

MMEPL, Peerampally

Knowledge Sharing Through Toolbox Talks: Throughout the month, we have organized 24 Toolbox talks on various topics, heartening to note that a total of 260 persons were actively participated in these informative talks.

Objectives and targets specific to EHS: We believe that health and safety of its stakeholders and protection of environment is of utmost importance:

- To minimize health and safety hazards to our stakeholders and all others influenced by our activities
- Develop a safety culture through active leadership.

Zero incidents: We have recorded zero incidents in December 2023, a testament to our shared dedication to ensure safety. This impressive achievement reminds us that safety is everyone's responsibility. No incidents recorded from January 2022 to December 31, 2023.

Safety talks, unsafe conditions, unsafe acts, near-miss reporting: Creating awareness by delivering safety talks on a daily basis among the

technical/non-technical employees on how to address the issues efficiently and report the unsafe conditions, unsafe acts, near-miss incidents.

GCMPL, Naskal, Pargi

The 52nd National Safety week was celebrated at the GCMPL Naskal site to promote occupational health & safety among employees and business partners.

Various activities were conducted such as safety mock drills, safety drawing competitions, safety awareness programs, safety essay competition, quiz competitions, flag hoisting, and distribution of prizes to the winners.

At GCMPL Naskal, two mock drills were conducted related to **"Electrical shock first-aid and controlled fire"** to emphasize awareness in emergency situations.

Major highlight of September 2023:

Successfully dismantled existing faulty inverters in Zone 01 and installed new inverters (4 each of 680 KW). During this retrofitting and installation works, strictly followed the safety rules and regulations and achieved zero incidents.

Safety First: Our commitment to safety remains unwavering. In line with this, we have conducted the monthly safety briefing, focusing on the crucial theme of **"Effective and Safe method of operating electrical equipment's at work place"**. Safety is not just a priority it's a way of life.

Training and Skill Development: In our continuous efforts to enhance safety knowledge and practices, various EHS training sessions were conducted. These sessions covered topics such as electrical safety, slips trips & falls, common sense safety and Identifying & mitigating risks.

Safety initiatives: We've made substantial efforts in strengthening our safety culture with informative awareness sessions. The team underwent the programs pertaining to usage, preservation & importance of PPE's, importance of assembly points, electrical safety etc.

Energy Technologies

The year 2023 marked for significant strides that SESI has taken in the dynamic field of energy. Our commitment towards diversification of our services with prime focus on Green & Sustainable Energy has taken a step forward as we have been able to enter in the Green Hydrogen market with the growing hydrogen economy in India and globally. As an integral part of our strategy to get more business abroad we have enhanced our presence in the international market after bagging engineering projects for combined cycle power plants in Turkey, Kazakhstan, Ivory Coast, and KSA. In the environmental sector, we continue to deliver the flue gas desulphurization plants to reduce the emissions of the existing coal-fired plants. Supercritical coal plants continue to be constructed in India and this year SESI has been awarded two major OE orders from State Electricity Boards. This year also marked a comeback for the coal-fired thermal supercritical plants with new projects and restart of stalled projects in this sector. The EPC engineering team achieved a major milestone by successfully completing R&M works of two 600 MW units of the Jharsuguda plant.

Engineering services for Green Hydrogen fueling station at NTPC, Badarpur, New Delhi: SESI bagged a major order for green hydrogen fueling station being set up by NTPC at Badarpur, New Delhi. The plant will generate 260 kg per day of green hydrogen, which would be used as a fuel for the transportation system in Delhi NCR. Our consultancy scope covers review and approval of basic engineering, detailed engineering of EPC contractor, construction supervision and commissioning assistance.

Engineering services for green hydrogen-based fuel cell micro grid 25 KWE, Alchi, Leh: This project is for the owner's engineering services for setting up of a pilot project for green hydrogen-based fuel cell micro grid 25kWe for

NHPC guest house at Nimmo Bazgo power station, Alchi, Leh. Our scope work covers review engineering services and supervision of construction work.

Engineering services for 240 MW CHP, Kyzylorda AKSA Energy, Kazakhstan: The scope of work includes district heating system as a part of installation in addition to combined cycle power plant and auxiliary boilers. The CCPP is being set up with GE 6F machines and it's our first project for setting up of District Heating (DH) system in Kazakhstan district. The project has the configuration of 2 GT, 2 HRSG, 1 STG with DH system having a total capacity of 240 MW. Consultancy scope covers review and approval of enquiry specifications, basic and detailed engineering documents and estimation of civil bill of material.

Engineering services for 700+ MW AksaTaboth combined cycle power project in Côte d'Ivoire, West Africa: This client intends to set up a CCPP with 700+ MW capacity on BOOT basis at Cote D'Ivoire, West. The plant configuration has been finalized with 2 GT (GE 9F machines), 2 HRSG & 1 STG. Our scope covers conceptual design, basic engineering, preparation of enquiry specifications and estimation of bill of material for the complete project.

Engineering services at Jazan Integrated Gasification & Power Company (JIGPC), Saudi Arabia: The scope of the project is to provide site engineering and execution by deputation of engineering expert for the CCPP plant of JIGPC in Saudi Arabia. The JIGPC site is recognized as the world's largest Integrated Gasification Combined Cycle (IGCC) complex employing gasification technology for the first time in the Kingdom of Saudi Arabia. Three experts have been deputed at site from June 2023. In addition, four detailed re-engineering MOC projects were assigned to SESI, which have been delivered successfully.

Engineering services for installation of FGD system at 2x660 MW unit, Jharsuguda, OPGC, India: The wet FGD will be installed at the 2x600 MW units at Jharsuguda, Orissa for OPGC. The project is under execution and advanced stage of engineering completion. The EPC contract will be executed by ISGEC with technology partner as Babcock. Our consultancy scope includes review and approval of engineering documents, factory inspections, construction supervision and commissioning assistance till successful completion of the project.

Engineering services for installation of FGD for Ukai 1x500 MW and Sikka 2x250 MW Gujarat, GSECL: The FGD projects for 1x500 MW at Ukai, Gujarat and 2x250 MW at Sikka, Gujarat are being set up by GSECL. SESI has been engaged for owner's engineering services. The EPC contractor has been awarded to M/s. GEPIL for Sikka project (technology by GE) and M/s. EPIL for Ukai Project (technology partner ASTIC) respectively. Consultancy scope covers pre-tendering, tendering, bid evaluation, EPC awarding and post-EPC award review engineering services till commissioning of the project.

Engineering services for installation of wet lime-based FGD system at 600 MW unit, RTPP and 500 MW Dr. NTTPS, APGENCO: The FGD projects for 600 MW at Rayalseema TPP and 500 MW Dr. NTTPS, Vijaywada are being set up by APGENCO, and SESI is in the role of consultancy services. The consultancy scope covers preparation of tender specification, pre-award activities, EPC awarding, review and approval of post-award engineering documents, construction supervision.

Engineering services for 1x800 MW supercritical thermal power plant Unit #7 in ash dyke area at Ukai, Gujarat, GSECL: The project shall be an ultra-supercritical 800 MW power plant being set up by GSECL. The project will be executed in first track and EPC execution

schedule will be 46 months from date of award of the EPC contract. Consultancy scope covers preparation of tender specification, pre-award activities, EPC awarding, review and approval of post-award engineering documents, construction supervision.

Engineering services for installation of 2x660 MW Koradi Power Project, Mahagenco, Mumbai: The project is being set up in Koradi Maharashtra by Mahagenco and the consultancy assignment covers scope for tender specifications preparation, pre- and post-bid evaluation, contract award, review and approval of post-award engineering documents, construction supervision and PG test witness till completion of the project.

Boiler R&M work at 4x600 MW thermal power plant at Jharsuguda: SESI has successfully performed the PG test for two units after replacement of economizer coils, combustion modification and re-heater coils. With this significant achievement, the client has given a repeat order of another unit, which is under execution and will be completed in May 2024.

Technical Services and Quality

Projects awarded

TSQ-029 Iqony Solutions GmbH/National Treasury, Republic of South Africa: Independent assessment of ESKOM's operational situation for 3 power plants (Medupi 6X794 MW, Matimba 6X665 MW and Kusile 6X800 MW).

TSQ-030 BGR Energy Systems Ltd.: Conducted performance guarantee test for SG package of Meja 2x660 MW TPP.

TSQ-031 RKM Powergen Pvt. Ltd.: Carried out maintenance audit in BTG and BOP areas of 4x360 MW RKMPPPL located at Ucchpinda Village, Sakti District, Chhattisgarh.

TSQ-032 L&T-MHI Power Boilers Pvt. Ltd.: Baseline test and PG test services – BRBCL Nabinagar Units #1 and #4.

TSQ-033 Konstelec Engineers Pvt. Ltd.: Transformer oil testing for HMEL Bathinda.

TSQ-011-A NTPC Ltd., Khargone STPP: Service contract for testing and energy management services at NTPC Khargone STPS (2x660 MW), Madhya Pradesh (order amendment No. 2 dated August 8, 2023 for quantity addition and period extension up to September 9, 2023).

TSQ-011-B NTPC Ltd., Khargone STPP: Service contract for testing and energy management services at NTPC Khargone STPS (2x660 MW), Madhya Pradesh (LOI dated October 4, 2023).

TSQ-034 KSK Mahanadi Power Company Ltd.: Dirty Airflow Pitot tube Test (DAFT) of Unit #3 COH at the KMPCL site (6x600 MW TPP) at Nariyara.

TSQ-035 Star Cement Meghalaya Ltd.: Detail analysis and process optimization between KILN and WHRS to achieve rated power of 12.3 MW at the cement plant in Meghalaya.

TSQ-036 Adhunik Power & Natural Resources Ltd.: Mandatory energy audit as per BEE guidelines of 2x270 MW coal-based thermal power plant at village Paramour, District Saraikela Kharsawan, Jharkhand.

Project Under Execution

Unit #1 & Unit#4 baseline test and PG test at Nabinagar Bhartiya Rail Bijli Co. Ltd., Nabinagar thermal power station, Pirouta, Khairi District, Aurangabad 824303, Bihar, India for L&T – MHI Power Boilers Private Limited.

Projects executed and closed (achievements)

Water balance study done for NTPC Dadri complex involving (4x210 MW + 2x490 MW) thermal station and 829 MW combined cycle gas station (having 2 modules of 2GT with one ST each).

Performance guarantee test completed of Unit #2 of the NTPC-SAIL Power Company Limited Bhilai PP-III (2x250 MW)-I, P.O. Bhilai (East), District, Durg-490021 Chhattisgarh for L&T.

Completed consultancy services for heat rate improvement plan for 210 units of MAHAGENCO – performance test of 8 units & technical audit of 3 TPS (Chandrapur STPS – Unit #3 and #4; Khaperkheda TPS – Units #1 to #4; Nashik TPS – Units #3 and #4).

Completed performance guarantee testing for Unit #2 boiler & APH, Meja thermal power station (2x660 MW), NTPC, Prayagraj, Uttar Pradesh.

Water audit conducted, comprising of water balance and conservation study of Stage-I 840 MW + Stage-II 1500 MW NTPC Kahalgaon STP Kahalgaon, Bhagalpur, Bihar.

Conducted unit performance test at 60%, 80%, 100% load in both units at Mahan Energen Limited, 2x600 MW thermal power plant, Village Bandhoura, Tehsil Mada.

Conducted HP and IP cylinder efficiency or enthalpy drop test for TG under-performance testing and energy management services at STPS (2x660MW) NTPC Khargone.

Conducted technical assessment of 2 units in TANGEDCO NCTPS II at North Chennai thermal power station, Puzhuthivakkam, Madipakkam, Chennai, Tamil Nadu, India.

Conducted maintenance audit of 4x360 MW R. K. M Powergen Pvt. Ltd., Ucchpinda village, Dhurkot Post between Dharbra and Kharsia, Tehsil Dharbra, Sakti District, Chattisgarh, 495692, India.

Conducted technical assessment of 2 units at Adhunik Power & Natural Resources Ltd.: 2x270 MW M.P. super thermal power plant located at Padampur, Jharkhand, India.

Conducted energy and water audit for Units #1 and #2 (2x800 MW) NTPC, Gadawada, District Narsingpur, Madhya Pradesh.

Conducted energy audit and water audit of Units #1 and #2 (2x800 MW) NTPC, Gadawada, district Narsingpur (Madhya Pradesh).

Conducted Unit #2 and #3 baseline test and performance guarantee test at Nabinagar

Bhartiya Rail Bijli Co. Ltd., Nabinagar thermal power station, Pirouta, Khairat district, Aurangabad, 824303 Bihar, India for L&T – MHI Power Boilers Private Ltd.

Conducted consultancy & engineering services and optimization at Star Cement Meghalaya Limited Village & P.O – Lumshnong, P.S. Khliehriat, district East Jaintia Hills, Meghalaya.

Conducted mandatory energy audit for Adhunik Power & Natural Resources Ltd. as per BEE guidelines of 2x270 MW coal-based thermal power plant at village Paramour, district Saraikeela Kharsawan, Jharkhand.

Completed dirty air flow testing along with fuel balancing for mills in all four corners of boiler Unit #3 at the KSK Mahanadi power project (6x600 MW), Nariyara village in Akaltara tehsil of Janjgir-Champa district, Chhattisgarh, India.

Transformer Oil Testing Laboratory (NABL certified)

Renewal of NABL Accreditation certification done with validity from February 18, 2023 to February 17, 2025.



Total 239 transformer oil samples tested for the following internal and external customers:

Internal customers:

- M/s. HMEL Petrochemical, Bathinda
- M/s. HMEL CPP Bathinda
- M/s. Gama Infraprop Pvt. Ltd

External customers:

- M/s. Konstelec Engineers Pvt. Ltd. (HMEL Bathinda ethanol plant).
- M/s. Singlepeak Lube Technologies (JSW Cement Limited, Paschim Medinipur, West Bengal).

Training & Advisory

International Seminar on “Hydrogen-the fuel of the future is here” was organized with the support of CEA, NTPC, International Solar Alliance (ISA) and GIZ on Friday, January 27, 2023 at Silver Oak Hall, India Habitat Centre, Lodi Road, New Delhi.

The seminar was inaugurated by distinguished dignitaries: Mr. Ghanshyam Prasad, Chairperson, CEA, Mr. KR Jyothish IAS, Additional Chief Secretary (GAD, Power and Forest & Wildlife Depts.), Govt. of Kerala, Mr. Rajnath Ram, Advisor (Energy), NITI Aayog, Mr. UK Bhattacharya, Director, Projects, NTPC, Dr Ajay Mathur, DG, International Solar Alliance, Dr. Ralf Schiele, Board Member, STEAG GmbH, Dr W. Damm, Director, GIZ, Mr. Ulrich Sigel, Board Member, STEAG Energy Services India, Dr Jen Reich, Board Member, STEAG Energy Services India, and Dr JT Verghese, Chairman, STEAG Energy Services India. Inaugural address was made by Mr. Ghanshyam Prasad, Chairperson, CEA.

Eminent speakers from Niti Aayog, IOCL, IGEF, Fraunhofer Germany, Toshiba JSW, IHI from Japan, KfW, IIT Mumbai, Greenko Group & STEAG Germany participated in the technical sessions of the seminar. About 240 participants attended the seminar including 86 from STEAG and 135 delegates from CEA, NTPC, Policymakers, renewable energy developers, contractors, large industrial consumers, oil and gas companies,

electrolyzer manufacturers, technology providers, grid operators, researchers, consultants, and investors.

Two weeks Competency development program organized for EGENCO officers (Malawi, East Africa) on “Project Development, Engineering & Economics of CFB Coal Based Power Project”. Interactive sessions at HO Training Center were delivered by PD, T&D and Engineering experts. The program also included 2 days visit to HMEL CPP Plant. The program has been well appreciated by participants with excellent feedback.



Competency Development Program for EGENCO

Classroom training programs were organized at GETRI Vadodara for GSECL Engineers (a State Utility) on topics; Boiler tube failure mechanisms and their corrective and preventive actions, Flexibilization of power plants, Performance Management of Thermal Power Stations for improved efficiency, Coal combustion and clinkering problems: hazards, remedies & safety measures in thermal power stations, Steam Turbine – Operation, Maintenance & Condition Monitoring (Site Problems, Trouble Shooting & Case Studies), Damage mechanisms inspection and RLA of steam turbine components. More than 150 engineers attended the programs.



Training at GETRI

Classroom training programs organized for O&M engineers of Shree Cement Ltd, Ras and Beawar sites on Boiler Water Chemistry for Power, and Bearing Maintenance & Shaft Alignment.



Training at Shree Cement Ltd.

Online Skill assessment of 130 employees at the HMEL site conducted using the web-based tool. Training need areas identified based on the skill gap analysis from the evaluation reports and the same has been submitted to site management. Also support provided in conducting Online programs in areas of Electrical maintenance and ESP.



Online skill assessment at HMEL

Simulator training programs conducted in Remote mode for STEAG operation engineers and GETs at the VL-JSG site.

Training programs organized for STEAG HO employees and site O&M personnel on topics like Train the Trainer, Interpersonal Skills, Communication Skills & Email Etiquettes, Presentation skills.



Interpersonal skills training for HMEL

Online paid training programs conducted at PAN India level on specialized topics like Grid Code Requirements and Studies for RE Integration, Boiler tube leakage in coal-based generating units: Mitigation measures, Boiler Operation & Maintenance: Best Practices and Case Studies for Efficiency Improvement, Challenges & Way forward in Achieving Flexible Operation, Risk Management in coal-based Power Plants, and Optimization of Power Plant Equipment Performance under Flexibility Regime.

Participants from Madhya Pradesh Power Generating Company Limited (MPPGCL), MAHAGENCO, GSECL, Hindalco, Aditya Birla Group, CPRI Bengaluru, GMR, Gujarat State Energy Generation Ltd, Hazira, GACL-NALCO Alkalies and Chemicals Private Limited, Development Consultants Pvt. Ltd., Essar Power Gujarat Ltd., Finolex Industries Ltd., VS Lignite Power Pvt. Ltd., WBPDC, Torrent Power AMGEN Unit, DB Power, CESC Ltd. Kolkata, Jindal India, Hindustan Zinc Limited, KSK Mahanadi, Damodar Valley Corporation (DVC), Indosol Solar Pvt Ltd, Jaiprakash Power Ventures Ltd., JSW Energy Ltd, RPCL, KPCL, Power Mech, Axis Energy Ventures India Private Limited, TPSODL (Tata Power), ONGC Petro Additions Ltd., ABB, JEF-KNR and various other organizations across India attended with interactive Q&A sessions. All Programs were well appreciated by the attendees.



Grid code requirements training



Risk management training program

On the occasion of World Environment Day on Monday, June 5, 2023, a Webinar was organized on Topic “Latest trends and developments in Renewable Energy & Hydrogen Technologies” in which participants from various organizations like Development Consultants Pvt. Ltd., Jakson Green Pvt. Ltd., Newtrace Pvt. Ltd., NOMAC, NPTI, ONGC Petro Additions Ltd., SgurrEnergy India Pvt. Ltd. and The Singareni Collieries Company Ltd. etc. attended with excellent feedback.

Skill assessment of 457 Tradesperson at VL, JSG was conducted for training needs identification & skill upgradation. In the first phase, the training needs of 118 Trade level staff has been finalized jointly by Head-Training HO, site HR and respective Area Managers. Subsequently refresher training programs were organized for Fitters, riggers, welders, C&I technicians and Electricians at VL JSG site.



Skill upgrading at VL JSG

A two-weeks training conducted for Torrent Power (SUGEN) engineers on generic 430 MW & 720 MW CCGT Simulators at the STEAG Noida Training Center.



Simulator training for Torrent Power

Online competency assessment of O&M engineers conducted successfully for the VL JSG site, in which 246 engineers from Operations, BMD, TMD, BOP, Quality, Water Chemistry, C&I, EMD and AHP departments have appeared for the

online tests. Reports were prepared and training calendars designed in accordance with TNA for each department to organize the programs from September onwards as per skill gaps identified.

One-year induction training program of 15th batch GETs was commenced on August 16, 2023 and going on smoothly. During the program, fifteen trainees have undergone structured sessions on power plant familiarization and O&M aspects. Power plant visits, Simulator based training, assessments through viva voce, group presentations, and written tests were also conducted. The GETs are now being posted to O&M sites to undergo field and on-the-job training modules.



GET training program

On-site trainings conducted for O&M engineers at Torrent Power Limited, AMGEN, Ahmedabad on topics Steam Turbine: Operation, Maintenance & Condition Monitoring (Site Problem, Trouble Shooting & Case Studies, Turbine Governing System and troubleshooting), Coal Combustion & Clinkering Problems: Hazards, Remedies & Safety Measures More than 100 O&M engineers attended the programs.



Training at Torrent Power Limited

In a joint effort between MAHAGENCO, Indo-German Energy Forum (IGEF), VGBE and STEAG Energy Services, the 500 MW Simulator supplied at Koradi Training Center has been customized by STEAG Energy Services, India for flexible operations according to the standards prescribed by CEA.

The training programs on this Flexible Simulator were organized for two batches of operation engineers at MAHAGENCO Koradi Training Center in October and November 2023. The program was inaugurated by Dr P. Anbalagan, CMD, MAHAGENCO. Others who made the speech included Director (Operations), Director (Projects), Executive Director (Koradi Training Center), Mr Tobias Winter (Director, IGEF) and Executive Chairman, Dr J T Verghese from STEAG India.

The program was conducted by experts from Germany and India and topics on Indian perspective of flexibilization including the need, CEA notifications, challenges & measures, financial and regulatory aspects, which was well appreciated by the participants.



Leadership development workshop



Training program on flexible simulator

Leadership Development Workshops organized for Managers and HODs level at VL JSG site and HMEL site, which were actively participated by more than 75 persons from all departments. The Workshops were based on Coaching model and Accountable leadership model, and designed to help participants to develop / enhance the skills, behavior and methods for being an effective Leader. Post training exercises also assigned by the Trainer to implement the key learnings acquired from the workshop.

System Technologies

Operation Management system (OMS)

PADO Execution: More than 12 units of PADO projects were successfully commissioned and handed over in 2023 AMC arrangements with various utilities (10 plants, 23 units) were achieved. OMS team has also successfully moved into PADO upgrades market.

Operator Training Simulator Division (OTS)

One of the main highlights was conversion of existing 500 MW MAHAGENCO's Khaparkheda simulator into Flexibilization Simulator and provide training on Flexibilization using the same under IGEF project. Apart from expansion of AMC arrangements with various utilities (RAWEC, CESC, MAHAGENCO), Simulator execution progress was significant including achieving Performance Guarantee (PG Test) of seven (7) Simulators at the NTPC Sholapur location.

Power System Simulation Division (PSS)

The work in this division has achieved significant momentum by achieving Six (6) consultancy projects in 2023. Further, 10 Power Factory license orders, Nine (9) AMC orders and Three (3) training orders were received in 2023.

UPRVUNL Harduaganj TPS, EXT-II (1x660MW):

Team member Mr. Ashutosh Ranjan and Mr. Nikhil Tembhare visited the UPRVUNL Harduaganj site from January 10 to 13, 2023 to complete the commissioning of all modules of PADO at the Harduaganj site. Commissioning of PADO completed successfully.

TSGENCO Manuguru (BTPS, 4x270 MW):

Team members Mr. Ashutosh Ranjan and Mr. Manu Shrivastava along with BHEL EDN engineers visited the Manugura site from February 13 to 24, 2023 to complete the commissioning of PADO for

all four units. Commissioning of PADO BTPS (4x270 MW) completed successfully.

NTPC Darlipalli (2x800 MW): Team members Mr. Abhik Das and Mr. Tanuj Kansliwal visited NTPC Darlipalli from February 27 to March 04, 2023 for site acceptance test (SAT) demonstration and handover of PADO Darlipalli. SAT and handover of PADO Darlipalli completed successfully.

Mahagenco Koradi Training Center: The Khaparkheda 500 MW Simulator has been successfully supplied, commissioned and handed-over to KTC. The SESI Simulator team visited the Koradi site for resolving some observations and handing over the Simulator to KTC on April 20, 2023.

DVC ANDAL, Durgapur Steel thermal power station:

Team member Mr. Abhik Das visited DVC Andal from April 24 to 28, 2023 to provide EBSILON training to DVC engineers from different DVC stations. An EBSILON training on turbine cycle, boiler & the EbScript module was imparted to DVC engineers. The training was very successful.



EBSILON training to DVC engineers

MEIL Tuticorin (525 MW x1): Team members Mr. Nikhil Tembhare and Mr. Praveen Ambastha along with the BHEL EDN Engineer visited MEIL Tuticorin from April 26 to May 5, 2023 for the final commissioning /SAT demonstration of Unit #1 MEIL Tuticorin. The SAT of Unit #1 MEIL Tuticorin completed successfully on May 5, 2023.

Training of DigSILENT PowerFactory software:

STEAG provided training to ENERZINX India Pvt. Ltd. on the PowerFactory software. Dr. Vedika Agrawal successfully conducted the training for

two days from May 25 to 26, 2023 at the client's Bangalore office.

TATA Steel, Meramandali (CPP): New hardware comprising PMS server and workstation supplied by the STEAG Noida office to the TATA Steel Meramandali site on June 8, 2023. Final commissioning and handover of TATA steel Meramandali Plant Monitoring System (PMS) completed successfully in May 2023.

HNPCL Vizag, (2x520 MW): Team members Mr. Abhik Das and Dr. Samiuddin Ahmad visited HNPCL Vizag from July 10 to 14, 2023 for SAT demonstration of Units #1 and #2. During the visit, all modules of PADO were demonstrated successfully. SAT & handover of HNPCL Vizag completed successfully.

NTPC Solapur Simulator: Performance Guarantee (PG) test of TANDA 660 MW, BARH II 660, SOLAPUR 660 completed. PG Test of Darlipalli 800, LARA 800 MW in progress.

Training of DigSILENT PowerFactory software: STEAG has provided training to MAN Energy on PowerFactory software. Dr. Samiuddin Ahmad successfully conducted 4 days training from July 24 to 28, 2023 at the client's Aurangabad office.

UPRVUNL Harduaganj (1x660 MW): Team members Mr. Ashutosh Ranjan and Mr. Monu Shrivastava visited the UPRVUNL Harduaganj site from August 1 to 4, 2023 for completing the SAT (Site Acceptance Test) for Unit #10 PADO. SAT completed successfully.

BIFCL Maitree, Bangladesh, 2x660 MW: Team members Mr. Mohit Sanoria and Mr. Tanuj Kansliwal visited BIFCL Maitree from August 17 to 26, 2023 for commissioning for PADO Units #1 and #2. Commissioning completed successfully.

NTPC North Karanpura (3x660 MW): Team members Mr. Monu Shrivastava and Mr. Ujjwal Ranjan visited NTPC North Karanpura from August 17 to 23, 2023 for the commissioning and SAT of PADO Unit #1. Completed successfully.

Biomass 10 MW Simulator for PECC2OM Vietnam: Biomass simulator has been fully developed and dispatched from STEAG on August 26, 2023 for export to Vietnam. Simulator team

Mr. Srinivas Malempati, Mr. Abhijit Sahu and Mr. Amal Naudiyal are scheduled to go to PECC2OM on September 2, 2023 for commissioning and training.

MPPGCL POC for GCCS: MPPGCL invited STEAG for POC (Proof of Concept) for the Generation Control Center Project, The main aim was to do POC for four modules – PMS: Online Plant Monitoring system with Dashboard, MOR: Merit Order Rating, ABT & APC at Jabalpur HO taking the online process data, meter data from two sites of MPPGCL, Malwa (1x660 MW) and (2x250 MW) Sarni TPS. STEAG team members Mr. Monu Shrivastava, Mr. Ujjwal Narayan, and Mr. Diwakar Love visited the SARNI site from September 5, 2023 for all preparations for PMS, metering etc. Mr. Tanuj Kansliwal visited the MALWA site from September 5, 2023 and Mr. Debaish Patra, Mr. Rajbans Talwar, Mr. Jatinder Singh, Ms. Deeti Pathak, Mr. Praveen Ambastha, Mr. Ashutosh Ranjan visited MPPGCL HO Jabalpur from September 15, 2023 onward. POC demonstration completed successfully on September 25, 2023. During the demonstration, MD of MPPGCL, CFO of MPPGCL, Chief Engineer (Gen), Add. Chief (Projects) and other committee members were present. HPL Ltd. and Jaji Technologies are our partners for metering, ABT & APC solutions.



MPPGCL visit

TSGENCO, YADARI FAT (2x800 MW): Team members Mr. Praveen Ambastha, Mr. Abhik Das, Mr. Mohit Sanoria, Mr. Monu Shrivastava and Mr. Diwakar Love along with engineers from BHEL EDN prepared for FAT of YADADRI project for all modules of PADO under design full load and part load conditions. Remote demonstration of FAT given to TSGENCO on September 28, 2023. FAT of Unit #1 and #2 YADADRI completed successfully.

MAHAGENCO Koradi Units #8, #9, #10 (3x660 MW): Mr. Monu Shrivastava visited Mahagenco Koradi Units #8, #9, #10 from October 16 to 20, 2023 to complete the 3rd AMC visit. The AMC visit completed successfully, During the visit, detailed demonstration of PADO results given to the plant officials and also a one-day PADO training provided to the plant officials from different department. The main aim is to increase the usability of PADO for heat rate improvement of the plant.

Dynamic RMS Model for PPC Controller in DigSILENT Power Factory, EIT Automation: Dr. Samiuddin Ahmad and Dr. Vedika Agrawal successfully completed the dynamic model development of Power Park Controller (PPC) in DigSILENT PowerFactory software. The detailed response of different controller modes was successfully demonstrated to EIT Automation.

Dynamic RMS model for ABB BESS EMS Logic in DSL in DigSILENT PowerFactory, ABB Singapore: Mr. Naveen Kumar and Dr. Vedika Agrawal successfully completed the dynamic model development of ABB BESS EMS logic for active and reactive power modes in DigSILENT PowerFactory software. The detailed response of different controller modes was successfully demonstrated to ABB Singapore.

PADO System Krishnapatnam, TSGENCO, Stage #11, Unit #3 (1x800 MW): Team member Mr. Mohit Sanoria & engineers from BHEL EDN are visiting the Krishnapatnam site from November 29, 2023 onward for the commissioning of PADO Unit #3. During the visit, detailed demonstration of PADO results will be given to the plant officials and also a one-day PADO training will be provided to the plant officials from different departments. Commissioning of PADO Unit #3 under progress.

EBSILON training MPPGCL: Team members Mr. Abhik Das and Mr. Diwakar Love visited the MPPGCL HO Jabalpur from December 11 to 15, 2023 to provide hands-on EBSILON training to engineers from MPPGCL. A total of eleven engineers from different sites of SSTPP Khandwa, SGTPS Birsinghpur, STPS Sarni, ATPS Chachai

attended the training. The EBSILON training was very successful at MPPGCL.

NTPC Solapur Simulator: Performance Guarantee (PG) test of Kudgi 800 MW completed and with this seven simulator PG Test has been successfully completed.

Grid connectivity studies for 500 MW solar PV IPP in Oman in DigSILENT PowerFactory software, Hamed Engineering Services, Oman: Dr. Vedika Agrawal, Mr. Naveen Kumar and Dr. Samiuddin Ahmad successfully completed the grid compliance studies as per grid code of Oman in DigSILENT PowerFactory software. The detailed report and model were submitted. Comments by various stakeholders were incorporated and studies are approved by the client.

Project Development and Transmission & Distribution

The dissemination meeting on the feasibility of multi-purpose use of land along with renewable energy projects which was carried out by SESI was successfully conducted at Power Cell, Dhaka in the presence of Power Minister, Power Secretary, Director General (Power Cell), Chairmen and Managing Directors of various power utilities of Bangladesh along with other stakeholders and the representatives of World Bank, ADB and GIZ. The meeting was a big success and got the attention of electronic and print media as well. Almost all the national TV channels reported about the meeting.



Dissemination meeting in Bangladesh

World Bank funded consultancy services for technical study for innovative designing of grid transmission tower using optimum area of land:

A presentation was made to Power Cell, Ministry of Power, Energy and Mineral Resources, Bangladesh in Dhaka as a part of stakeholder's meet after the successful submission of final report on the above captioned project. The meeting was attended by the Director General, Power Cell and the officials of other government agencies like PGCB, BPDB etc.



Stakeholders' meet at Power Cell, Dhaka

Some other prominent ongoing projects are as under:

Solar

Project Monitoring Agency (PMA) for Rural Electrification Corporation (REC) Ltd. for 330 MW solar PV projects belonging to Adani Solar Energy RJ Two Pvt. Ltd. in Rajasthan.

Lenders' Independent Engineer (LIE) for Indian Renewable Energy Development Agency (IREDA) to monitor 15 MW/21 MWp solar PV project belonging to Amp Energy C&I Five Private Limited in Tamil Nadu.

LIE for IREDA to monitor 75 MW/105 MWp solar PV project belonging to M/s Juniper Green Gamma One Private Limited in Maharashtra.

Wind

TEV consultant for PFC for 155.4 MW Mytrah Vayu (Indravati) Private Limited (MVIPL) wind project in Andhra Pradesh and Rajasthan.

LIE for IREDA to monitor 164 MW wind projects belonging to IVY Ecoenergy India private limited in Maharashtra, Rajasthan and Madhya Pradesh.

Technical due diligence evaluation for Bharat Petroleum Corporation Ltd., for acquisition of

288.8 MW wind assets belonging to Power Trading Corporation in Madhya Pradesh, Andhra Pradesh & Karnataka.

TEV consultant for Power Finance Corporation Ltd. (PFC) for 148.9 MW Mytrah Vayu (Tungabhadra) Private Limited (MVTPL) wind project in Andhra Pradesh.

Green Hydrogen

DPR for setting up hydrogen valley innovation cluster in the State of Kerala.

Feasibility report for green hydrogen hub at Deendayal Port Trust, Kandla, Gujarat for PTC India Ltd.

Pumped storage and conventional hydro power

PMA for REC of 1440 MW Greenko MP01 IREP Pvt. Ltd. developed by Greenko.

PMA for REC of 500 MW Chitravathi pump storage project developed by Adani Green.

LIE for IREDA for 15 MW Neugal hydro power plant of Om Hydropower at Palampur in Himachal Pradesh.

LIE for IREDA for 2 MW Khanderi small hydro power plant of Daksh Green at Rampur in Himachal Pradesh.

O&M Review for PFC of 2x48MW Jorethang Loop hydroelectric power plant and 2x48.5MW Tashiding hydroelectric power plant developed by DEPL and SEPL respectively.

EV Transportation

LIE for Aditya Birla Finance Ltd. (ABFL) to carry out the due diligence and progress monitoring of 50 electric buses and allied infrastructure for intercity bus services in Maharashtra.

LIE for Power Finance Ltd. (PFC) to carry out the due diligence and progress monitoring of 350 (2x175) electric buses and allied infrastructure for intra city bus services in Uttar Pradesh.

LIE for IREDA of M/s. Gensol EV Lease Pvt Ltd (GEVLPL) towards procurement of 3800 commercial electric cars to be deployed majorly in Delhi / NCR and Bengaluru region.

Power Transmission

PMA for REC Ltd. of 765 kV Khavada-Bhuj Transmission Ltd. developed by Adani Transmission.

PMA for REC Ltd. of 220-132 kV MP Power Transmission Package-II Ltd. developed by Adani Transmission.

PMA for REC Ltd. of 765 kV Beawar Transmission Ltd. developed by Sterlite Transmission.

PMA for PFC Ltd. of 765 kV WRSR Power Transmission Ltd. developed by Adani Transmission.

PMA for PFC Ltd. of 765 kV Khavada-II Power Transmission Ltd. developed by Adani Transmission.

Due Diligence and Advisory

Due diligence and asset valuation for BPCL of 288 MW wind asset of PTC Energy Ltd.

Re-financing due diligence for HDFC of 765 kV Lakhadia – Vadodra Transmission Project Ltd. developed by Sterlite Transmission.

Desalination and Sewage Treatment Plant

PMA for PFC Ltd. of 70 MLD desalination plant in district Bhavnagar (Ghogha), Gujarat being set up by Bhavnagar Desalination Private Limited (BDPL).

PMA for PFC Ltd. of 70 MLD desalination plant in district Dwarka (Gandhvi), Gujarat being set up by Dwarka Sea Water Desalination Private Limited (DSDPL).

PMA for PFC Ltd. of 30 MLD desalination plant in district Somnath (Sutrapada), Gujarat being set up by Gir Somnath Desalination Private Limited (GSDPL).

PMA for PFC Ltd. of 100 MLD desalination plant in district Kutch (Mandvi, Gundayali), Gujarat being set up by Kutch Sea Water Desalination Private Limited (KSDPL).

PMA for PFC Ltd. of 50 MLD Tertiary Treatment Plant (TPP) of Chandrapur Waste Water Management Pvt. Ltd. (CWWMPL).

Solid Waste Management

PMA for PFC Ltd. of 15 MW Waste to Energy (WtE) project based on Municipal Solid Waste (MSW) at Langariya in Jaipur district of Rajasthan being set up by M/s. Jindal Urban Waste Management (Jaipur) Ltd. (JUWMJL).

PMA for PFC Ltd. of 8 MW Waste to Energy (WtE) project based on Municipal Solid Waste (MSW) at Keru in Jodhpur District of Rajasthan being set up by M/s. Jindal Urban Waste Management (Jodhpur) Ltd. (JUWMJL).

PMA for PFC Ltd. of 6 MW Waste to Energy (WTE) plant and bio-methanation plant with Scientific Landfill Facility (SLF) in Kozhikode, Kerala being set up by M/s. Malabar Waste Management Pvt. Ltd. (MWMPPL).

Human Resources

During the renewal of Group Health Insurance policies in June 2023, we tied up with a new broking firm i.e., Policy Bazaar and introduced a user-friendly app for all employees, which has new features of health-related discounts for Tele- / Online Doctor consultations / OPD / Pharmacies / Health Check-ups, etc.

The year 2023 started with successful takeover by STEAG at Haldia site and onboarding was done for 80 staff members on January 1, 2023, who were with the previous contractor.

In order to optimize the daily business operations, legal obligations and keeping in view employee expectations, various new policies and amendments were released:

- 1. On-bench Policy**
- 2. Safety Bonus Policy for Jharsuguda location**
- 3. Equal Opportunity Policy**
- 4. Maternity Leave Policy**
- 5. Amendment to Retirement policy and Relocation expenses reimbursement policy**

Celebrations @ office:

The International Women's Day (IWD) on March 8, 2023 – One hour online interactive session for all female colleagues conducted, wherein a certified Yoga trainer and Senior Physiotherapist focused on various Pranayama exercises related to Polycystic Ovary Syndrome (PCOS), Polycystic Ovarian Disease (PCOD), back pain etc. along with generic yoga and balancing our lifestyle and other related topics. After the session, there was a get-together at the Noida office, where we celebrated the bond of “Womanhood”.

Apart from the monthly get together / birthday celebrations, we have celebrated Independence Day, Diwali, Christmas etc. with enthusiastic participation from the employees. Various fun events and games were organized and prizes were distributed. Employees were decked up in traditional attire reflecting the spirit of the festival.

Health & Fitness Sessions:

WHO defines Health as “Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity”. Physical as well as mental health is a vital part of supporting our overall wellbeing. Keeping this in prerogative as well as the fact that in the recent past, we lost a few of our colleagues on health grounds, various health & fitness sessions (online / offline) were conducted to educate and focus on physical as well as mental health by prominent doctors from reputed Hospitals:



- **Diet & Nutrition Management**
- **Two awareness sessions on Hepatitis**
- **Dance and fitness session**

Apart from the above, a medical camp and an eye-check up camp was organized for Noida staff in the month of July 2023, where the employees participated actively and took doctor consultations.

Informative Sessions:



This year the government has introduced certain changes related to pension schemes. Considering the gravity of its impact, we conducted an online session, where the various nuances and changes were discussed along with their implications.

To increase awareness amongst all employees about sexual harassment activities at the workplace, multiple sessions on Prevention of Sexual Harassment (PoSH) were conducted for all employees across various locations by our external legal advisor of the ICC.

Employee Contribution

Corporate Social Responsibility Projects:

As a part of its CSR activities, SESI has done two solar projects. The first project was a rooftop Solar system with battery backup, installed at a vocational training and residential facility for autistic adults near New Delhi and second project was a Containerized solar system for a off grid tribal village in Meghalaya for charging of LED lanterns and mobile phones. Both the projects were designed, conceptualized and installed by SESI team.

Solar Rooftop project with battery backup:

SESI installed a solar PV plant of 25 KW capacity at the roof top of a building called “Ananda” at Badshahpur Village, 45 Km from New Delhi. Ananda is a complex meant for residence and vocational training for Autistic adults and is a project of AFA (Action for Autism), a non-profit organization that is recognized as a center of excellence and provides services to thousands of people with Autism and their families across the country.



Vocational training building for autistic adults



Solar panels at the rooftop

Since we had already used conventional Lead Acid as well as VRLA batteries in our earlier Solar rooftop projects, we decided to use Li-ion batteries here. The batteries used had Lithium Ferrous Phosphate (LiFePO₄) Chemistry. The module voltage was 48V and five modules were used in a rack to give a system level voltage of 240V. Four such racks were used in parallel to give a battery capacity of 60 KWh that's enough to support their load for four hours during power cuts, helping them to save Diesel worth Rs. 30,000 per month.

Containerized Solar Project:

In 2022, a Containerized Solar charging station was installed at Chipakaram tribal village located in Meghalaya, a state in North-East India. The system consists of a 20 feet marine container having 7.3 kWp of solar panels at its top and batteries and inverter installed inside the container. Two hundred LED lanterns were distributed to residents belonging to three nearby villages and the container was installed at a school ground in between these villages. The villagers bring their lanterns in the morning and collect back the charged lanterns in the evening. The lantern battery is enough to run for Six to Ten hours depending upon the illumination level and the battery capacity in container is enough to charge all lanterns even if there is no sunshine for three days.



Container installed at the site



Villagers bringing lanterns for charging

The lanterns help the villagers in working at home at night time and their children can study using the Light from lantern. The school in whose ground the container is installed, takes power from it during their functions and similarly the village committee draws power from the container when they have local meetings.

Vasant Sameer Sharma
General Manager – Renewable Energies

My life

This story is about a person, who used to stay in a small town with his father, mother, sister and a brother. His father used to work as a news reporter and his mother was a homemaker. His father was very sincere and dedicated to his job. They were struggling every day to fulfil their daily needs like food and clothes, because his father's salary was very low. His brother completed ITI and took up a job, since his financial support was very necessary to his family. Both the brothers never purchased text books, instead they used to get them from others or seniors by requesting them, during their entire education period.

Somehow, he managed to do Diploma in Mechanical Engineering with the help and support of his family. While doing the diploma, he had only two pairs of dresses. His family also struggled a lot, because his brother's job was not regular. During this period, his sister's marriage took place adding to more expenses. He had to pay his college fee by selling whatever jewelry they had. After the completion of his diploma, he joined in a factory as a helper with a salary of Rs.400/- per month. But after 4 months he lost his job since the company got closed. After one month, he started working in a factory as a mechanical supervisor for the salary of Rs.1500/- per month, but his engineer had engaged him in cleaning the compost, carrying conveyors which were very stinky. His dress used to get wet and dirty by the end of the day. After coming back to home, he couldn't eat any food because of the gas he inhaled the whole day. After a month, they reduced the salary to Rs.1000/- ignoring their initial agreement. When he argued, they threw him out. He left that job and informed his father. But owing to their current situation, his father had no choice but to get angry on his own son.

Then he went to Gujarat with his uncle's support and joined a company as an operator under a contractor for the salary of Rs.1650/- per month. Later, both the brothers planned to work in Dubai for more salary so that they can clear all their debts and have financial stability. But they didn't have enough money to achieve that either. After 2 years, suddenly his brother expired due to brain stroke at the age of 25 years. Due to this shock, his father also passed away within 2 years. His life became dark all of a sudden. He couldn't find any ray of hope as all his dreams turned into ashes. He was only 25 years old by then.

After that he shifted to UP with his mother and got a job under a contractor through recommendation. He did a lot of hard work and worked overtime to earn more salary. His financial situations slowly started getting better. Coming to his marital life, he didn't get any matches since he was working in UP. He finally got married at the age of 29 years. Currently, he has two precious kids, a beautiful family, a stable career and his own properties. This story is not fictional but a piece of my life.

G. Srinivasa Rao

Manager – FGD, OPGC site

The Servant and the 99 Club

Once upon a time, a wealthy man noticed his servant's constant cheerfulness. Despite receiving a meager salary, the servant always seemed happy and content with his life. Curious, the man asked the servant about his secret to happiness.

"I have no desires, sir," the servant replied simply. "I spend what I earn and enjoy the simple things in life with my family. That is all I need."

The wealthy man, however, was not satisfied with this answer. He summoned his personal assistant and asked him to investigate the servant's happiness. After some digging, the assistant discovered the key: the servant was not part of the "99 club."

The "99 club," the assistant explained, was an informal group of people who always craved "one more" of something. Whether it was a new car, a bigger house, or more money, they were never truly satisfied with what they had.

Intrigued, the wealthy man decided to test this theory. He filled a bag with 99 gold coins and left it at the servant's doorstep.

The next morning, the servant discovered the bag and eagerly counted the coins. He was overjoyed, but his joy was short-lived when he realized one coin was missing. He searched everywhere for the missing coin, but to no avail.

Despite the disappointment, the servant was determined to make the bag whole. He began working extra hours, taking on additional tasks, and saving every penny he could earn. He vowed to purchase the missing coin and finally achieve the coveted "100."

The wealthy man, observing the change in his servant's demeanor, called his assistant again. This time, he was perplexed. "Why is my servant no longer happy?" he asked.

The assistant chuckled. "He is now officially a member of the 99 club," he explained. "The burden of the missing coin has replaced his contentment with the desire for more."

He learned a valuable lesson that day: true happiness doesn't lie in acquiring more, but in appreciating what we already have.

K. Bhanuprakash

Head – Marketing and Strategy, Noida

Use of AI applications in the power sector

Today, the power sector is facing the combined challenge of decarbonization, resource optimization, optimal distribution management and the dynamic demand-supply scenario. Thus, transferring knowledge of power sector to technologies like Artificial Intelligence (AI) for a sustainable tomorrow is a necessity now. In this context, availability and analysis of a massive amount of qualitative data is the key to improve efficiency and effectiveness. As per a report of IEA (International Energy Agency), the global fleet of wind turbines only is estimated to produce more than 400 billion data points per year. Such a massive task of filtering, analyzing and in-time decision making from such huge amount of data, is a challenge to the human capacity. Hence, AI which can compute billions of data and make prompt decisions has already made inroads in the Energy sector. Many developed nations have already started using AI in the power sector to their advantage.

Power generation forecast of renewable energy: Forecasting of renewable energy generation using weather model and geographical data is used to determine the energy output and its easy integration into the power grid.

Google and its AI subsidiary DeepMind developed a neural network to increase the accuracy of forecasts for its 700 MW renewable fleet in USA. Based on weather forecasts and turbine data history, the model can predict future output up to 36 hours in advance with much greater accuracy.



Predictive maintenance: By use of AI applications, performance of assets is continuously monitored and

analyzed to identify potential faults ahead of time. For instance, European utility company E.ON, has developed a self-learning algorithm that predicts when medium voltage cables in the electrical grid need to be replaced, thus reduced Grid outage by 30% compared to conventional approach.

Demand forecast: Through better demand forecasts by use of AI applications, the end user can benefit from the time-of-use tariff. ABB in partnership with Verdigris Technologies has added two AI powered applications (Energy Forecasting, Intelligent Alerts) to help commercial and industrial buildings manage their energy demand and tackle rising peak tariffs.

Apart from these, AI has the potential to reduce energy waste, lower cost, and encourage the use of renewable energy sources in power grids.

A key player:

Organized high quality data is the foundation of any AI model. Still, there are many areas in power sector where AI has to make an impact yet. Use of AI in O&M of power plants is very much on the cards. In this context, Energy sector champions like M/s STEAG Energy Services hold an edge over others because of the domain knowledge and the capacity to gather huge amounts of qualitative data across the power industry. Not only the mountains of qualitative data, but also it has the expertise to organize and pre-process the data and the in-house infrastructure like training centers and simulators to get the prototypes tested and validated. Time has arrived to unleash the potential and set the trend.

AI is the wagon to the future. Let's hitch the wagon and lead the revolution.

Hemananda Chinara

Senior Manager, Operations, OTPC, Tripura

Long Service Awards

Employees with 20 years of service



It means so much to me and I am truly grateful. Your recognition inspires me to continue to pursue my passion with even greater enthusiasm. I am honored to have received this award and want you to know that I appreciate it more than words can express. My journey with STEAG family has been really wonderful and I enjoyed each year with upgrade of technical skills and wealth. I am very thankful to the STEAG management for its trust on me and for giving all the support as and when needed.

Darshit Jayantkumar Shah
Bathinda



M/s. STEAG Energy Services (India) Pvt Ltd has given me various opportunities to serve in this esteem organization. This has helped me to develop various qualities to succeed in my life. I could achieve the milestone of 20 years with the cooperative nature of everyone in the STEAG family. I am thankful to all.

K. V. Ramanathan Shastri
Jharsuguda



I have successfully completed my 20 years journey in the STEAG family. I would really like to thank my superiors and my colleagues for this wonderful time, in which I received a lot of support and guidance and also learned so much.

Ravi S. Jadhav
Noida



Marking two decades with the company, my journey has been a dynamic blend of learning, growth, meaningful connection, mastering multiple technologies and honing people management skills. Grateful for the opportunities to grow both professionally and personally, I look forward to applying these experiences in shaping the future success of our team and the company. Cheers to two decades of innovation, collaboration, and achievement. A heartfelt thanks to the management for fostering an environment that encourages exploration and for their caring approach, making these two decades truly remarkable for me. Looking forward to more exciting times ahead.

Sanjeev Kumar
Noida

Employees with 20 years of service



Twenty years feel like yesterday. Such a busy, entertaining, and eventful ride. Started as a Project Manager of Simhadri PADO in 2003, became Head of PADO team, promoted to first home grown HOD taking charge of System Technologies and thereafter Executive Director and Head of International Business Development along with System Technologies. I witnessed STEAG's exponential growth as well as difficult times in these years. Strong vision, faith, commitments and dedication from the management team helped me to sustain and to play a key role in supporting STEAG's growth. Still feel like my journey in STEAG has just started and there are many more milestones for STEAG to achieve in coming years. Game on!!

I would like to thank my dear colleagues who believed in me and joined me in this unforgettable journey. Special thanks to the STEAG management in India and Germany for the inspiration, motivation, trust and encouragement given throughout the years. I know STEAG will continue to inspire us for many years to come.

Debasish Patra
Noida

Employees with 15 years of service



I am humbled and grateful for the recognition bestowed upon me with this award. This achievement would not have been possible without the unwavering support and love of my family, friends, colleagues and well-wishers. Thank you for the honor and for inspiring me to continue striving towards excellence. Thank you very much.

Priyabrata Pattanaik
Jharsuguda



It is a great honor for me to receive this special award and I feel privileged to be part of STEAG family for the last 15 years. I also take this opportunity to express my gratitude for the inspiration, motivation and support by the management, seniors and other colleagues throughout my journey with STEAG. I wish STEAG reaches new heights and continues its success in the coming years. Best wishes to all members of STEAG family.

P. G. Ullas
Noida



It is really a greatly proud moment for me after completing 15 years of service in STEAG and I feel grateful to be part of the STEAG family. I express my sincere gratitude for the guidance and motivation provided by the Management and seniors and also the support of my colleagues at every stage. Sincerely wish that STEAG creates new standards of performances and excels in every sphere of its activity. As we move forward, I take this opportunity to wish good health and prosperity to everyone in STEAG family.

Kuwar Bahadur Singh
Noida



This is a very proud moment for me. When I look back, it has been a long journey of 15 years, but actually it never felt such long due to the nice and supportive people always around. Thanks to each and every member of the STEAG family, who remained associated with me throughout this journey. Working with a wonderful company like you has been a fulfilling experience. I have learned a lot from your drive and tenacity to excel. Thank you once again.

Deepa Negi
Noida



Employees with 15 years of service



I am thankful to the entire management of SESI for providing me with such a wonderful workplace, which has given me a very conducive environment for learning, growing and prospering. My overall association with STEAG has been fantastic and I'm incredibly grateful for the opportunities I have been given by the SESI management. My best wishes are with STEAG to create new benchmarks of performances and excel in every sphere of its activity. I also take this opportunity to wish good health and prosperity to everyone in STEAG family.

Neeraj Kumar Dwivedi
Noida



It gives me immense joy and happiness as I complete my 15 years at STEAG. These 15 years can be defined as a kaleidoscope of happy and best memories of my life, new friends and relations I have found in terms of my colleagues, with whom I have worked here. Over the last fifteen years, the IT domain has undergone massive changes like restructuring, globalization and digitization etc., making it a small world. The pandemic has been another challenge, which we were able to successfully overcome. I feel our organization has become stronger and dedicated than ever before. I am lucky to have such a fantastic team of dedicated and loyal employees under the STEAG umbrella. I thank the management, my team and every single staff member for making this day possible.

Kapil Anand, Noida



Fifteen years of service! I am thankful to the Management of the company to provide me with such an opportunity. I tried to do the assigned work to the best of my ability. During my experience at STEAG, I have learnt that progress does not stand still. Many with whom I started with are not sitting here with us today. However, I appreciate even more those of you who remain here. Thanks & wishing the company huge success & prosperity in the coming years.

Manav Jain
Noida



Happy to have completed 15 years in STEAG. My journey started as CAD, now Engineer, from preparing drawings to writing pages of technical specifications, design documents, costing and now site & client meetings, Thank you Dr. Verghese and Mr. K. D. Paul for this opportunity

Satyadev Singh Negi
Noida



On completion of 15 years as a proud member of STEAG family. The journey got beautiful with STEAG's empathy, belief and unwavering support in me that I could do good job. I would like to thank all STEAG members for being there as a part of my journey in STEAG India.

Varun Pal Narota
Noida



Employees with 15 years of service



During the last fifteen years that I have spent at STEAG, I have got opportunity to work in multifarious fields and areas. Working in fields like IT, Wind, Solar, Storage etc. both on technical and commercial side has presented an excellent opportunity for learning.

Vasant Sameer Sharma
Noida



As my remarkable journey continues with STEAG, the 15-year mark serves as a foundation for even greater accomplishments and successes in the future. This milestone is not just about MY longevity; it's about the wealth of experience, institutional knowledge, and the relationships forged along the way.

Anwar Jameel Dibaji
Noida



I am immensely grateful to STEAG Energy Services India and Botswana Pvt. Ltd. for providing me with an opportunity to work with them since June 2007. During my tenure, I have gained extensive knowledge in power plants and have progressed from an engineer to a manager position, serving for over 15 years. I express my heartfelt gratitude to STEAG for the opportunity for such a long and satisfying career journey with the company. I have always been loyal and dedicated to my duties all the time with the company and I wish to assure the company that I will remain loyal continuing to avail the best of my knowledge to take the company to better heights.

Anil Kumar Medisetty
Botswana



Another 5 years have gone by with plenty of new and exciting work and the good fortune of excellent teamwork. I look forward to more challenging work as the Energy sector moves to decarbonize and develop resilience against extreme events.

Rajbans Talwar
Noida



My journey in STEAG started with deputation at ESKOM Power-SA as turbine expert, a second inning of my professional carrier, after working as power engineer for 37 years in Torrent power. I am very happy and feel proud to complete 15 years in our esteemed organization gaining incredible experiences, learning, and camaraderie.

Devendra Panchal
Noida



Employees with 10 years of service



Krishnan Kathiresan
Bathinda



Jaspreet Singh Dhillon
Bathinda



Pramod Kumar Barik
Bathinda



Gaurgopal Acharya
Bathinda



Kulwinder Kumar Bonkra
Bathinda



Dilsher Alam
Bathinda



Anjali Bansal
Bathinda



Ranjeet Singh
Bathinda



Adhyatm Prakash Jain
Bathinda



Gurpreet Singh
Bathinda



Mohd. Zainul Abedin Ansari
Bathinda



Maninder Singh
Bathinda

Employees with 10 years of service



**Uma Shankar
Bathinda**



**Falel Singh
Bathinda**



**Ananta Chakraborty
Visakhapatnam**



**Swadhin Kumar Mohapatra
Visakhapatnam**



**K. Sridhar Babu
Visakhapatnam**



**Abinash Swain
Visakhapatnam**



**Ganesh Chandra Behera
Visakhapatnam**



**George Fernandez
Jharsuguda**



**Hadibandhu Biswal
Jharsuguda**



**Bikash Kumar Mallik
Jharsuguda**



**Biswajeet Khilar
Jharsuguda**



**Ratnakar Behera
Jharsuguda**



**Hemanta Kumar Samal
Jharsuguda**



**Mahesh Kumar
Jharsuguda**



**Nikhil Kumar
Jharsuguda**



**Ashok Ravuru
Jharsuguda**

Employees with 10 years of service



**Selvan Subramanian
Jharsuguda**



**Sharvesh Kumar
Jharsuguda**



**Priyendra Singh
Dahej**



**Arvind Kumar Soni
Kashipur**



**Manish Sharma
Noida**



**Prabhakar Kumar
Noida**



**Amit Singh
Barauni**



**Karunamoorthy
Radhakrishnan
Botswana**



**Rajesh Kumar
Botswana**



**Ramasubbu Vinoth Kumar
Esakkimuthu
Botswana**



**Dhakshinamoorthi
Krishnasamy
Botswana**



**Uvaraja Velusamy
Botswana**



**Mohanraj Palanisamy
Botswana**

Employees with 05 years of service



Sl. No	Name	Location
1	Abdul Khaliq	Bathinda
2	Ashok Kumar	Bathinda
3	Bhupinder Singh	Bathinda
4	Ganesh Prasad Vidyarthi	Bathinda
5	Heera Lal	Bathinda
6	Kalpesh Patel	Bathinda
7	Soma Sekhar Kondapaneni	Bathinda
8	Padala Jayaram	Bathinda PETCHEM
9	Anil Kumar Singh	Jharsuguda
10	Ashik Shoam Khan	Jharsuguda
11	Mohan Kushwaha	Jharsuguda
12	Neetesh Asati	Jharsuguda
13	Piyush Kumar	Jharsuguda
14	Rajib Lochan Sahoo	Jharsuguda
15	Surajit Debnath	Jharsuguda
16	Ashish Malik	Noida
17	Saurabh Sharma	Noida
18	Tony Tom	Noida
19	Vinit Kumar	Noida
20	Shaik Gousu Babu	Visakhapatnam
21	Siraparupu Sanyasi Naidu	Visakhapatnam

Newsletter Design
Uuique Print Services

Editorial Team
Samir Sachdeva, Vedika Agrawal



XXIII Foundation Day
Annual Newsletter - 2024
STEAG Energy Services (India) Pvt. Ltd.

Corporate Office

A-29, Sector-16, Noida - 201 301, India
Phone: +91 120 4625 - 000
Fax: +91 120 4625 - 100

Registered Office

507, Bhikaji Cama Bhawan
Bhikaji Cama Place
New Delhi - 110 006, India