



BUILDING THE NATION OF OUR DREAMS

# JINDAL STEEL & POWER

**BUSINESS SUSTAINABILITY REPORT** FY 2015-16



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# About the Report

Jindal Steel & Power Limited (JSPL) is an Indian business conglomerate with operations spread across India, the Middle East, Africa, and Australia. Its core areas are steel, power, infrastructure and mining. It has also a specialized machinery division for manufacturing equipment, steel foundry and pressure vessels.

This is JSPL's third business sustainability report, authored in conformance with the latest Generation 4 set of Global Reporting Initiative (GRI) guidelines on sustainability reporting. Based on Materiality Assessment conducted in-house, information on eleven aspects has been disclosed.

This year JSPL's business sustainability report is also mapped to the National Voluntary Guidelines issued by the Ministry of Corporate Affairs, Government of India.

Further, this report is also structured around the seventeen Sustainable Development Goals (SDGs) that were announced by the United Nations on 25 September 2015. This demonstrates JSPL's commitment to the United Nations to perform on the SDGs, and to our stakeholders towards greater transparency and improved sustainability performance.

JSPL is committed to annually reporting its performance on

business sustainability and sharing it with all its stakeholders. We welcome you to share your views, suggestions and feedback with us at [sustainability@jindalsteel.com](mailto:sustainability@jindalsteel.com).

### Data management approach

Assumptions and standard calculation methodologies for estimation and quantification of data have been used. For calculation of carbon emissions, emission factors provided by Intergovernmental Panel on Climate Change (IPCC), Central Electricity Authority (CEA) and Ministry of Power, Government of India have been used. Water, waste and electricity issues have been reported on an actual basis.

In order to provide a balanced perspective of performance in this report, we have discussed our key accomplishments, developments and initiatives during the reporting year.

Mozambique operations of the organization are not included in the scope of this report year due to its operation at reduced capacity of 1.2 MTPA during the year. Also mining operations were suspended in February 2016.

### Assurance

This sustainability report has been examined and assured by an external third party. The assurance statement is provided.

# Report Scope and Boundary

The report includes the following operations of JSPL (and its subsidiary Jindal Power Ltd.)



**INTEGRATED STEEL PLANT  
JINDAL STEEL & POWER LTD.**  
Angul, Odisha, India



**INTEGRATED STEEL PLANT  
JINDAL STEEL & POWER LTD.**  
Raigarh, Chhattisgarh, India



**PELLET PLANT  
JINDAL STEEL & POWER LTD.**  
Barbil, Odisha, India



**STEEL ROLLING MILL  
JINDAL STEEL & POWER LTD.**  
Patratu, Jharkhand, India



**CAPTIVE POWER PLANT  
JINDAL STEEL & POWER LTD.**  
Dongamahua, Chhattisgarh, India



**HEAVY MACHINERY UNIT  
JINDAL STEEL & POWER LTD.**  
Raipur, Chhattisgarh, India



**INTEGRATED STEEL PLANT  
JINDAL SHADEED IRON & STEEL LLC.**  
Sohar Industrial Port, Oman



**INDEPENDENT POWER PRODUCER (IPP)  
JINDAL POWER LTD.**  
Tamnar, Chhattisgarh, India



**IRON ORE MINE  
JINDAL STEEL & POWER LTD.**  
Tensa, Odisha, India



**COAL MINE  
JINDAL MINING SA (PTY) LTD.**  
Kiepersol, South Africa

# Chairman's Message



“ Steel, power, and infrastructure are the building blocks for India's growth. Equally important is the education of our youth, ensuring they have jobs, and that they are healthy. Only then is India truly prospering sustainably. This is why no matter what the circumstance, we at JSPL have never deterred from our chosen path of developing India across various economic and social strata.

JSPL's third Business Sustainability Report for FY 2015-16, for instance, explains the initiatives completed in a year fraught with extreme challenges. These initiatives ultimately strengthened the organization as well as enhanced the lives of our stakeholders more than ever before.

I invite you to read the report and welcome your comments and participation in our work at JSPL.

**Naveen Jindal**



# MD & Group CEO's Message



Dear Stakeholders,

I am delighted to present to you our third consecutive Business Sustainability Report for FY 2015-16. This is an important report that summarises the slew of positive changes we made during the year, by following the tenets of financial prudence, operational excellence and enhancing capacity utilization for the company, thereby creating long-term value for all our stakeholders.

In FY 2015-16, the steel and power sector in India faced multifarious external challenges. Yet in spite of tepid demand we reported a 26% increase in volume of steel sold – an all-time high turnover of plates, wire rods, and TMT. Our retail sales grew by over 42%, while our pellet sales witnessed a 59% growth. We also achieved the long cherished dream of exceeding a monthly delivery of 100,000MT for several product lines. We made a record amount of collections and reduced our inventories to the lowest level ever, enabling the company to achieve a substantial reduction in its working capital.

We also won a large number of awards such as TPM Excellence Award from JIPM, the Sultan Qaboos Award for Industrial Excellence, Midrex Award of Excellence and Limca Book of Records for the longest rail. Despite severe constraints from a weak steel market, challenging external policy environment, and limited raw materials JSPL's project teams in Angul, Raigarh, and Oman enhanced the progress of on-going projects to increase production capacity and capability. We are now strategically poised at the vanguard of emerging opportunities both in the domestic as well as overseas business, ready to capture the imminent upswing in the market in the future.

We were truly able to flourish despite the challenges, due to a milestone year of introspection and recalibration. JSPL reorganized itself into a federation of 18 independently managed businesses (SBUs) each led by its own CEO and Management Council. There was also an intensive year long exercise of aligning the company along the management philosophy of Theory of Constraints, via workshops and projects across our sites. Our entire human resource structure was overhauled to be more process oriented and efficient. Two new departments were created i.e. Energy Efficiency, and Compliance & Risk Management. These departments were staffed, the new teams were trained, and their work was integrated into JSPL's overall work plan. You will read more about these initiatives in this Business Sustainability Report.

I thank you for your strong support and belief in us, and at JSPL we look forward to growing together with you. Our success is defined by your well-being.

**Ravi Uppal**

# Chief Sustainability Officer's Message



Dear Stakeholders,

This has been a very special year. By pivoting steadily on its intrinsic strength, JSPL was able to recalibrate itself organizationally. The business model was turned around to have a more solid front end. Our raw material procurement strategy is more robust. And in this past year there was more progress made than ever before to ensure JSPL's holistic growth through extraordinary initiatives in our social commitment, energy efficiency, compliances, risk management, and talent development of employees.

In FY 2015-16 JSPL's business sustainability department worked across all functions and businesses of the company to take care of aspects that are important for the long term and not just the urgent ones. Remarkably, JSPL's business sustainability department acted as an incubator to create important new departments at JSPL - such as the Compliance & Risk Management department, the Energy Efficiency department - that are crucial for the company's business longevity. We continued to educate thousands of young students in our schools, vocational skills colleges, and universities. We invested in new technologies in our plants that would propel India's economic growth while also protecting our planet. We provided livelihood to families living in cities and farms. Using new innovative approaches we ensured that these communities and our employees are in good health, and that they avail of the health services and hospitals that we have built and manage. We also indeed built bridges, ships, factories, buildings, and unrelentingly provide electricity to millions of homes. Our work also included a large number of important initiatives such as strengthening employee talent as well as JSPL's authentic corporate brand identity, and also implementing our social commitment via self-sustaining models. We at JSPL have integrated business sustainability in everything we do.

An important consequence of this has been that JSPL stands stronger and more united as an organization today as we work to overcome unprecedented challenges. And the 3rd edition of JSPL's Business Sustainability Report tells this extraordinary story of resilience.

I thank you for your support dear stakeholders, and truly hope that this report further enhances your understanding of JSPL. I look forward to building the India of our dreams, with you.

**Miniya**



Coal Gasification Facility at Angul, Odisha

1.0

# Snapshot of JSPL

## 1.1 Introduction to JSPL

Jindal Steel and Power Limited (JSPL) is a major business conglomerate in India with a significant presence in steel, power, mining and infrastructure segments. With an annual turnover of US\$ 2.68 billion, it is part of the US\$ 18 billion diversified O.P. Jindal Group. JSPL is led by its Chairman Mr Naveen Jindal, the youngest son of Shri O.P. Jindal.

The company has the distinction of producing the world's longest rails of 121 metres, large sized parallel flange beams, high strength angle irons for transmission towers and high strength earthquake resistant TMT rebars. JSPL operates the largest coal-based sponge iron plant in the world with an installed capacity of 3.25 MTPA of steel at Raigarh in Chhattisgarh. The company has a total installed steelmaking capacity of 6.75 MTPA and aims to grow in a holistic manner and contribute substantially to India's long term growth story.

3.25 MTPA Integrated Steel Plant at Raigarh, Chhattisgarh

## 1.2 Business in Numbers JSPL at a glance

**US\$ 18 Bn**

JSPL is part of the illustrious US\$ 18 billion O. P. Jindal Group

**US\$ 2.68 Bn**

JSPL turnover as on 31st March, 2016

**17<sup>th</sup>**

Rank among World Class Steel Makers as per World Steel Dynamics, USA

**6.75 MTPA**

Installed steel-making capacity (India & Oman)

**5,058 MW**

Installed power generation capacity

**9 MTPA**

Pellet-making capacity

**₹ 3,633 Cr**

Operating EBITDA in FY 2015-16

**19%**

Operating margins in FY 2015-16

**21 countries**

Export presence

**₹ 47.32 Cr**

CSR expenditure in FY 2015-16 (Consolidated)

**7.7 Mn**

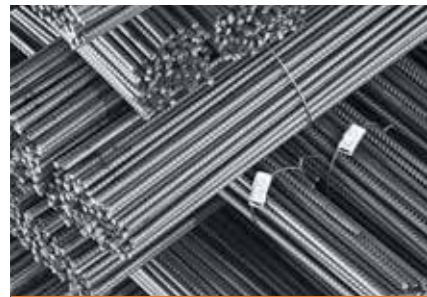
Saplings planted till date

**1 Lac families**

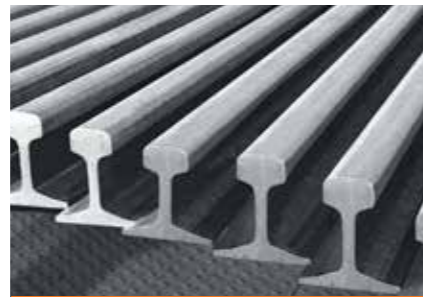
Anchor a socio-economic ecosystem of 100,000 families

## 1.3 Snapshot of Steel Products

### JSPL Product Range



TMT REBARS



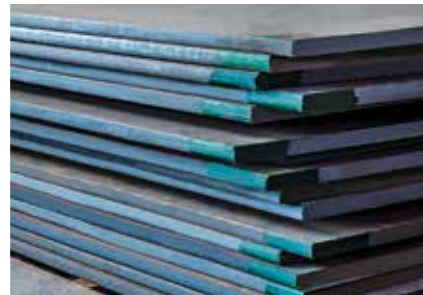
RAILS AND HEAD HARDENED RAILS



PARALLEL FLANGE BEAMS AND COLUMNS



STRUCTURAL STEEL



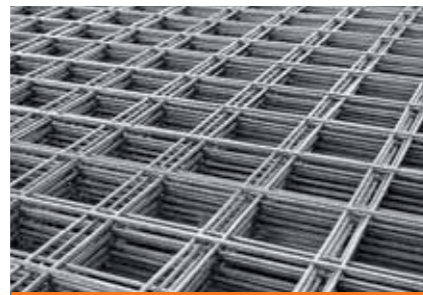
PLATES AND COILS



WIRE RODS



FABRICATED SECTIONS



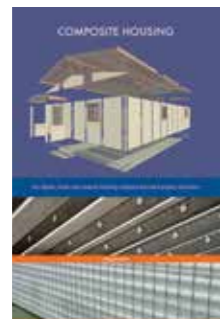
JINDAL QUICK BUILD SOLUTIONS



SPEED FLOOR



Our structural steel sections are empowering a new era of growth in India



Our lighter, faster and smarter housing solutions fast track project execution



Our heavy machinery division manufactures cranes, heat exchangers and bulk material handling equipment



Our tracks of hard metal will facilitate high speed and bullet trains



Our range of products find wide applications across industries and will leave behind a trail of magnificent plants



Our special grades of steel will power the ship building industry in India

## 1.4 Snapshot of Jindal Power Limited

We are inspired by the Government's Power for all initiative to help fulfil national priorities with our generation capacity and elevate the quality of life for millions.



Power has three critical attributes - Generation, Transmission and Distribution. The Government's initiation of the Ujwal DISCOM Assurance Yojana (UDAY) – a revival plan for DISCOM's with a view to improve operational efficiencies and enforce financial discipline, augurs well for the power sector. This initiative will enhance the country's distribution muscle and is envisaged to have a positive impact on the entire value chain of the Power sector in India.

Jindal Power Limited (JPL), is a wholly owned subsidiary of JSPL. It is India's first private sector entity to have set up a mega power plant (1000 MW capacity) at Tamnar, Chhattisgarh. We take pride in the fact that our plant has inspired almost 50,000 MW of power generation capacities in the private sector. The plant has received various prestigious awards for project management and operational efficiencies.

Buoyed by the success of its 1000 MW plant, JPL further expanded its presence in Tamnar with a 2400 MW (4X600 MW) thermal power plant. With the completion of 2400 MW expansion project in FY 2015-16, JPL became the largest power station complex in the state of Chhattisgarh — a 3400 MW facility at a single location.

A 6.9 km long cross-country conveyor belt (second longest in Asia) was installed to feed coal to the plant. Moreover, it reported PLFs, which are industry benchmarks. JPL has built a 258-km long 400-KV double circuit transmission line to connect to the National Grid. This has inspired many private players to enter the transmission business.

Today, we are contributing significantly to the growing needs of power in the country; and have an installed capacity of over 5000 MW, across the regulated and captive sector in India.

Jindal Power Limited (JPL) is among India's leading power companies across the energy spectrum: thermal, hydro and renewables. During FY 2015-16, JPL witnessed increased power purchase agreements (PPAs) as a result JPL has over 30% tie up of total capacity. The Company maintained its generation levels, fully aligned with the PPA commitments and merchant market demand through a

judicious coal-sourcing mix from coal linkage and e-auctions. JPL emerged as the best performer in Ministry of Power and Central Electricity Authority (CEA) project execution excellence study and won two National Awards- Gold Shield and Silver Shield for early completion of Thermal Power Projects. JPL's OP Jindal Super Thermal Power Project (STPP) Unit 2 (600 MW) won the 'Gold Shield' and Unit 1 (600 MW) won the 'Silver Shield' for the year 2013-14 in the category of 'Early completion of Thermal Power Projects'.

#### Key achievements, FY 2015 -16

- 400 MW of long-term access under the Tamil Nadu Electricity Board (TNEB) PPA got operational.
- 200 MW PPA with Kerala State Electricity Board (KSEB) advanced by six months from December 2016 to June 2016.
- 59.5 MW Medium Term Open Access with Tamil Nadu became operational.
- 200 MW PPA with KSEB from March 2017 to June 2017.
- Coal crushing system was commissioned for Stage II, which enabled smooth operations.

#### Hydroelectric projects under execution

- Etalin Hydroelectric Power Project (3097 MW), Dibang Valley District, Arunachal Pradesh.
- Anonpani Small Hydro Electric Project (22 MW), Dibang Valley District, Arunachal Pradesh.
- Attunli Hydro Electric Power Project (680 MW), Dibang Valley District, Arunachal Pradesh.
- Kamala Hydro Electric Power Project (1800 MW), Lower Subansiri District, Arunachal Pradesh.

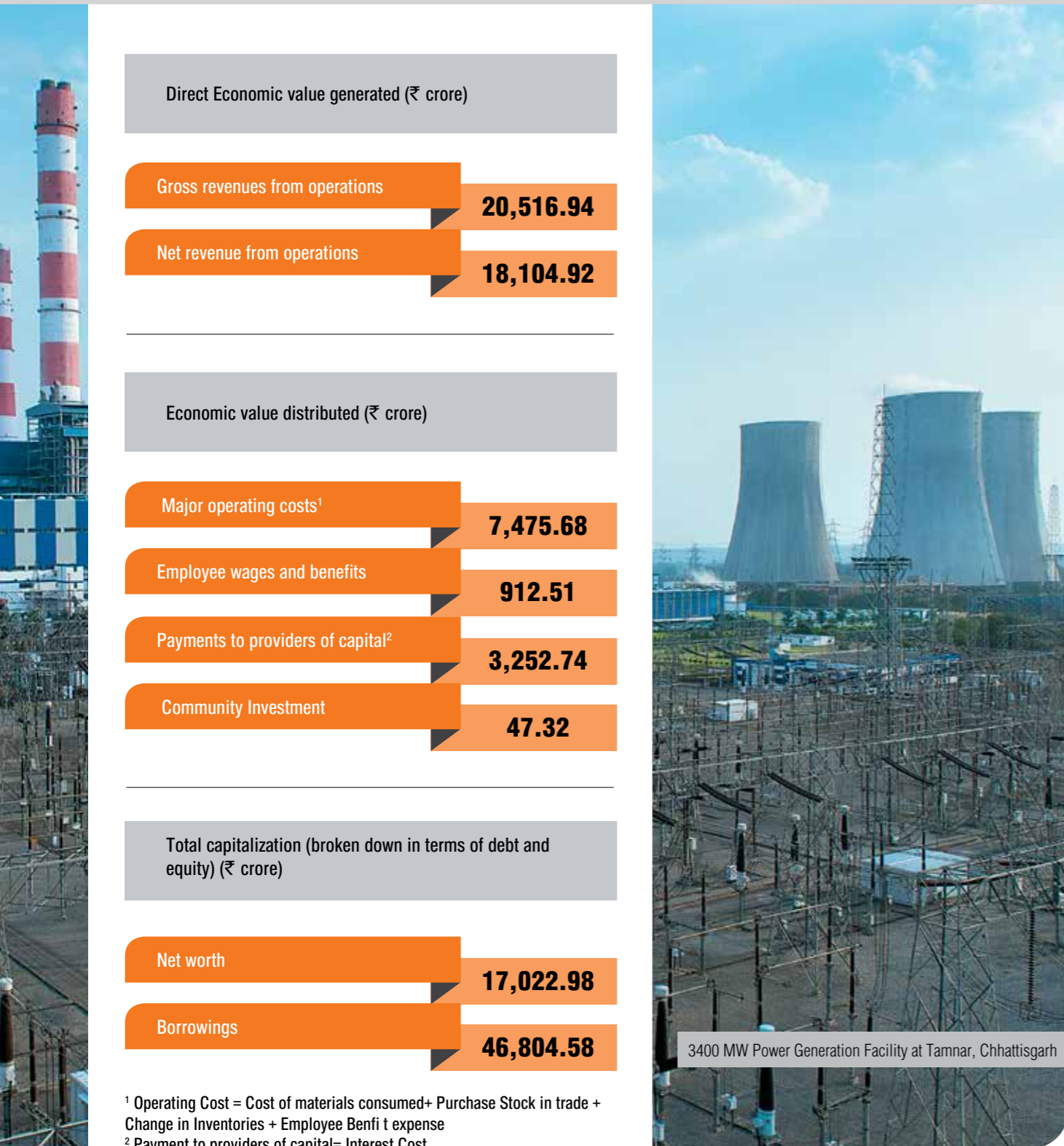
#### Overseas power ventures

- As part of global ventures, the Company is exploring the possibility of setting up a 350 MW (2x175MW) imported coal based power project at Senegal in Africa.
- We are developing a 150 MW power plant within the mining concession under entity 'Jindal Investimentos Lda' in Mozambique. The project has reached an advanced stage of development, where JPL is supporting the developer for the completion of development phase and thus, achieve financial closure.

#### Divestment of 1000 MW Power Unit

As part of monetisation plans, JSPL has been looking to generate cash flows from select divestments to be in a much stronger position to meet all its liabilities and emerge as a financially strong and sustainable company in 2016-2017.

## 1.5 Financial Snapshot (Consolidated)



## 1.6 Our Students at OP Jindal Schools

Total number of OP Jindal Schools	<b>7</b>
Total strength of students*	<b>9,669</b>
Total strength of students in 12th standard*	<b>554</b>
Pass percentage for students in 12th standard*	<b>99.09%</b>
National sports competitions*	<b>65</b>
KenKen mathematics puzzle international contest*	<b>27</b>
Students qualified in IIT Mains*	<b>59</b>

\* OP Jindal Schools at Taraimal and Kunjemura are not included.

Students of OP Jindal School, Raigarh



# JSPL's Business Sustainability Initiatives

## 2.1 Incubate New Departments

The year was challenging with plenty of issues that needed to be dealt with critical urgency. Yet alongside the 'urgent', the 'important' issues were addressed attentively - this reflects the maturity and vision of JSPL's leadership team. During the year 2015-16 JSPL's Business Sustainability team incubated 2 new departments or teams within JSPL. In a large business conglomerate in any part of the world, creating new departments and staffing them is never easy. The creation of these new teams had the sole objective of ensuring JSPL's holistic growth for the long term.

### a) Compliance & Risk Management team

The creation of this team had been initiated in early 2015, but it was only by September 2015 that the team, its leadership, and strategy, was fully in place. It was decided that one Compliance & Risk management Officer was to be recruited per site location. Each Compliance & Risk Management officer will be part of the site location's office of the Plant Head. In this way compliance and risk related issues can be discussed and panned out with utmost trust and confidentiality. JSPL's Business Sustainability team also decided that the various Compliance & Risk Management Officers will not be part of any common umbrella department, but will instead be managed by a coordinator. The observations from sites will feed into JSPL's highest level of executive governance, its Group Executive Committee.

JSPL's Chief Sustainability Officer and the Compliance & Risk Management coordinator together prepared various formats for conducting hard copy compliance checks across sites, overhauled an online compliance tool iComply so as to ensure transparency, and constituted a common risk assessment methodology for the company. Risk management at JSPL is hands-on and real and focuses on risk mitigation plans with timelines.

### b) Energy Conservation

Until 2014, only Raigarh and Tamnar sites had dedicated



JSPL, Raigarh won the Energy Efficiency Award-2015 (CREDA)

energy efficiency departments. JSPL's Business Sustainability department established the need for a group level Energy Conservation department because the challenges related to energy management at JSPL's various sites were inter-related to each other. The entire strategy and approach for energy efficiency had to be a pan-company effort.

For this, JSPL's Sustainability department conducted a series of awareness talks within JSPL on the recent compliance developments related to energy efficiency in India, including the Perform Achieve Target scheme and the imminent issuance of energy e-Certs.

The accredited energy auditor of Bureau of Energy Efficiency (BEE) was invited during the end of 2015 to conduct an independent audit, and provide JSPL with a roadmap of projects to implement. JSPL Group has 3 sites that have been nominated as Designated consumers by the BEE - Tamnar, Raigarh, Nalwa. Based on the audit, the energy targets announced on March 31, 2016 for the 3 Designated Consumer sites are as follows:

<b>Tamnar</b>	<b>2522 kcal/kWh</b>
<b>Raigarh</b>	<b>0.8426 mtoe/tcs</b>
<b>Nalwa</b>	<b>0.5978 mtoe/tcs</b>

Energy Efficiency managers at each site were recruited. After several rounds of discussions and consultation, a structured document called the Energy Efficiency Guidelines was created during FY 2015-16, which was rolled out later in 2016.

JSPL's Energy Efficiency Guidelines laid out the following:

- a) There must be at least one Energy Efficiency manager at

each site as a dedicated resource

- b) Employee's measurable contribution in energy efficiency improvement at site to be included in Key Result Areas (KRA) of their annual performance assessment. This must be applicable to all employees. KRAs of Head of technical departments (HODs) at the site and Plant head must include:
  1. Precise targets for energy efficiency,
  2. Identification of as many minimum investment energy efficiency improvement projects.
  3. Implementation status of energy efficiency projects.

- c) Separate cost center for 'Energy Efficiency' must be created across all sites and at the group level.

- d) All energy efficiency improvement measures (CAPEX & Non-CAPEX) must be implemented only after seeking approval through JSPL's digital Note For Approval (e-NFA) process.

- e) In every Note For Approval issued by the energy efficiency team, a specific hierarchy should be maintained.

- f) Energy efficiency managers at each site must maintain a log for all identified energy efficiency improvement measures.

- g) All locations in collaboration with HR must launch a scheme for

- i. Building awareness among employees through in-house energy efficiency trainings, discussion workshops, need based external training.

- ii. Promote participation of shop floor employees, towards identification of energy efficiency improvement measures.

- h) All sites must benchmark all its operational practices to at least 3 competitors who are displaying best practices.

- i) All energy managers must maintain a Mass & Energy balance (loss map) for all processes and site level on yearly basis.

- j) Based on opportunities identified through benchmarks, mass & energy balance and energy efficiency improvement measures all energy managers must establish energy

performance targets for all production process and sites. These targets must be revised on a yearly basis.

- k) All sites must have a Plant Energy Efficiency Committee. The committee must include Plant head, site production head, site finance head, site procurement head, and site energy efficiency manager. This committee must meet at least once in a month and minutes of the meeting should be shared with the Group Energy Efficiency Head.

- l) Energy efficiency & energy costs of all units will be reviewed on quarterly basis by Group MD & CEO, Group CFO, Head-Steel Business, Head- Power Business, Chief Technology Officer, Chief Sustainability Officer, All SBU Heads and Group Energy efficiency head via Telepresence.

## 2.2 Our Top Priorities

It has been an extraordinary year at JSPL. The company faced unprecedented challenges due to external circumstances, and yet we turned this in to an opportunity for us to emerge as a more efficient, process-oriented, and leaner organization. We remained focused on our priorities, and did not let short-term challenges sweep us off our chosen growth path. We instead invested in identifying the gaps in our ways of operation, and looked at what we can do better, and took tangible steps to do so. For instance, while on one hand a drop in steel prices globally combined with policy changes in India resulted in a challenging year for the company's finances, we on the other hand adopted the framework of 'Theory of Constraints' to restructure the company's operations in order to increase efficiency and adapt to new circumstances. There were also several strategic changes made to ensure safety of our employees, and the well-being of the local communities around our manufacturing units. Internally, we multi-skilled our employees and increased the scope of our social



commitment. Also two new departments i.e. Energy Conservation, Risk & Compliance Management, were created, staffed, and rolled out in the company by JSPL's business sustainability department. In this context, we would like to update you on the specific actions taken on the sustainability priorities that were set for 2015-16.

**a) Ensuring 100% Compliances**

Ensuring 100% compliances is the top most priority for JSPL. As a strong step towards progress on this priority as mentioned earlier in the report, in June 2015 JSPL established a well-endowed Compliance & Risk Management department. At all Indian sites compliance & risk management officers were recruited internally. Framework, structure, and training modules were rolled out for group-wide risk identification and mitigation. In conjunction with the office of JSPL's Company Secretary, Mr Ashish Gera was appointed as Coordinator for compliance & risk management at JSPL to closely monitor and further develop compliance management at JSPL. The department receives a strong endorsement from JSPL's top management.

**b) Ensuring Raw Material Security**

It has been a milestone year for JSPL's raw material procurement strategy. The company reorganised itself from its backward integrated business model. A detailed explanation of this is provided in the section 'JSPL's Sustainable Business Model' of this report. External sources for coal were identified and procured from. A new company Jindal transfreight was created to ensure smooth logistics.

**c) Establishing Sustainable Steel and Power Production Processes**

Steel manufacturing through DRI-EAF route is the most economical way of manufacturing steel, and is a popular

route especially in developing economies such as India and China. Yet the Net Sales Realisation (NSR) of Indian steel manufacturers in the domestic market has been low in FY 2015-16. One of the main reasons for this has been the dumping of steel by foreign companies in India. A report of the World Steel Association in 2015 confirmed that market conditions for the steel industry will continue to be difficult for a long time to come. Given this scenario, JSPL stepped up its search in 2015 for technological advancements of its production processes so as to improve energy efficiency and competitiveness of its products. Accordingly, for this purpose JSPL identified a technology called Flexi Modular Furnace in collaboration with Tenova Group, Italy. Commissioning of the modification has helped JSPL in reducing its energy foot print across the production chain by 0.151 Gcal/tcs.

Also, JSPL reported in its Business Sustainability Report 2014-15 that on January 18, 2015 thirty two students from Harvard University and MIT visited JSPL's coal gasification plant in Angul, and wrote out an in-depth case study about the lessons learnt by JSPL in building this plant. The book containing this case study has a dedicated chapter on India, and was published in February 2016. You will find a copy of the book chapter in the 'Case Study' section of this Business Sustainability report. JSPL is the first in the world to integrate steel production with coal gasification technology.

**d) Building an authentic corporate identity and brand**

JSPL's Business Sustainability Report 2013-14 had reported that a series of employee surveys, SMS campaigns, and workshops with employees and top management had been conducted by JSPL's Business Sustainability department in order to articulate JSPL's corporate identity and brand.

The results indicated that JSPL has in its very essence a breakthrough innovative spirit embedded by its founding father, the revered Mr. O.P. Jindal. The survey responses showed that this spirit clearly lives on within the organization in the ways employees think and in everything employees do. The very nature of the industry JSPL is in as well as the company's large size makes JSPL an important component in the growth story of every country JSPL is present in. The passion for building the Nation of our dreams drives JSPL on a daily basis. The company is also active on issues of national and global significance, and the survey responses also demonstrated that employees believed that as leaders in the industry and responsible corporate citizens we must continue to lead towards solutions for problems affecting the people of the world at large.

**Innovation** is intrinsically and deeply embedded in the DNA of the company, and so is the company's mission of **Nation Building**, along with a strong sense of **Social Commitment**. As JSPL grows rapidly and diversifies in products and geographic locations, this ethos will continue to drive JSPL.

**e) Attracting and nurturing leaders**

JSPL is led from the front by the young and dynamic leadership of its Chairman Mr Naveen Jindal. As of 31 March 2016, 20.87% of employees across the JSPL group are less than 30 years of age. There is an emphasis on trusting young professionals with leadership roles in the company. JSPL's MD & Group CEO, Mr Ravi Uppal nurtures young leaders on a rolling basis in the CEO's Office, providing mentorship and opportunities to learn from him. JSPL's Learning and Organizational Development function is led by Chief Learning Officer, Dr Prabhu Agarwal. He has the

mandate to nurture talent on a continuous basis through the following leadership development programmes at JSPL:.

**Voyage of discovery programme**

The Voyage of Discovery Programme is a unique set of interventions made in the development of JSPL's top talent employees. These employees participate in advanced management programmes at leading education institutions; they receive executive coaching, and are introduced to global best practices in their field. In FY 2015-16 26 JSPL senior employees were selected to be part of this programme.

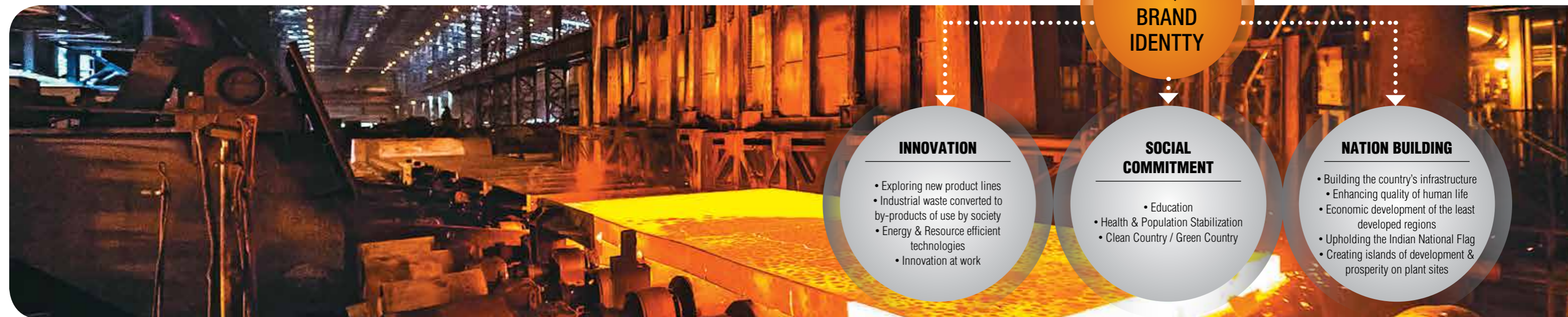
**LEAD programme**

The Leadership Exploration and Development (LEAD) programme has duration of 6-8 months to provide leadership development through business performance. The programme has two elements, an individual development module for mid-level leadership that includes i) leading self ii) leading others and iii) leading change.

The first aspect of LEAD includes 5 coaching sessions, 5 functional training workshops and peer-to-peer learning segments.

The second aspect of LEAD requires each participant to deliver exemplary performance through a pre-identified Breakthrough Project (BtP). The participants work on the BtP for 6 months. The theme of the BtPs range across cost optimization, process improvement, strategic initiatives, and innovations. Driven by the head of the site location, the BtPs are reviewed on a monthly basis. The BtP is incubated in the LEAD programme, and then implemented in the organization.

In 2015-16, 33 BTPs like Reduce DRI Variable Cost from existing by optimizing raw mix & key process variables, 350 MT diesel driven mobile screen plants to be operated by power were



incubated across the organisation under the programme.

**Trainee programmes**

The Jindal Lead Management Trainee (JLMT) programme is a fast-track career development initiative. It is designed to orient JLMTs to the various businesses of the company and includes 4 months of project work at JSPL's plant site in Raigarh, 3 months at the Jindal Power plant site in Tamnar, 3 months at JSPL's plant site in Angul, and 2 week-long classroom sessions on steel making and power production. Thereafter, JLMTs are placed at different key positions in the company. Individual mentorship is provided, and in addition JSPL's Chief Sustainability Officer mentors the JLMTs for the first 5 months after they join their roles at JSPL. In FY 2015-16 a batch of 18 JLMTs were recruited.

JSPL also has the Graduate Engineer Trainee programme (no recruitment in FY 15-16) for engineers straight out of university. JSPL also has a Management Trainee programme (6 trainees recruited in FY 15-16) for fresh graduates from business management institutes.

All year around there are on-going mandatory training activities that include behavioural, functional, as well as technical training. The target man-days of training is 3 days per employee.

Further, in FY 2015-16 109 employees attended the Employee Assessment Centre, an annual one-day assessment of each employee, which results in a detailed report on each employee's strengths and working areas.

**f) Maintaining robust internal management processes**

In FY 2016 JSPL was able to steer through ambiguity in the external environment by coordinating and working together across all businesses and locations. A 2 day strategy meeting of JSPL's Core Management Team took place in May 2015. In this meeting JSPL's 92 senior most managers participated.

All global and regional site locations of the company were

represented at the meeting. Through FY 2015-16 a marketing meet was conducted every month, given the extraordinary circumstances of the world's steel markets, challenging external policy environment and limited raw materials, the company embarked upon a year long exercise of aligning staff to the management philosophy of theory of constraints. There are more details on this in the section 'Process efficiency by 'Theory of Constraints' later in this report. This exercise required a series of brainstorming sessions across the company to align all employees. There were new management processes put in place such as frequent digital communication to all employees, town halls, and a series of top management meetings, so that the entire company remains aligned on the changes being rolled out. JSPL's Chief Financial officer led the initiative to digitize all major financial transactions in the company. The group's Chief Information Officer has created online platforms for financial requests, processes and monitoring.

**g) Motivating employees to provide leadership on issues critical to the state of the world**

Apart from CSR projects, employees at JSPL have piloted large-scale initiatives towards i) stabilizing India's population; ii) providing creative solutions for developing infrastructure for the most needy; iii) upholding India's National Flag and iv) starting and nurturing up educational institutions.

JSPL's Chairman Mr Naveen Jindal continues to lead the Flag Foundation that places India's National Flag in public spaces. As of March 31, 2016, the Flag Foundation of India has installed a total of 64 monumental flag poles of 100 feet and 207 feet height across India.

JSPL also leads in the area of providing quality, affordable education. It has 2 universities (OP Jindal Global University in Sonapat, OP Jindal University in Raigarh); 1 training school (Jindal Institute of Power Technology, Tamnar) for power

plant professionals; 5 O.P. Jindal Community Colleges in Odisha, Chhattisgarh and Jharkhand; 4 Industrial Training Institutes based on public-private partnership schemes with the Government of India; 7 OP Jindal Schools. JSPL has also provided 263 community teachers to over 100 vernacular medium schools in the villages near its operations in Odisha, Chhattisgarh and Jharkhand. Further, JSPL was invited for the second time consecutively to the World Economic Forum's Annual Meeting at Davos in 2016. The motto of the World Economic Forum is to improve the state of the world.

JSPL is a lifetime member of the Global Compact Network India and a life time member of the United Nations Global Compact. The Chief Sustainability Officer of JSPL, Dr Miniya Chatterji is also a part of the Steering Committee for Sustainability of the Global Compact Network India. Further, JSPL is a member of the World Steel Association. JSPL's CEO Mr Ravi Uppal is a Board Member and JSPL's Chief Sustainability Officer Dr Miniya Chatterji is on the Expert Committee for Sustainability, of the World Steel Association.

Given the company's interests in manufacturing steel, power, and infrastructure, JSPL is literally building Nations. The company continues to create economic value in every country where it operates and contributes to healthy ecosystems and strong communities.

**2.3 Overcoming Materiality Issues**

'Materiality issues' are those that are important to the company's stakeholders as well as to its core business. Each year at JSPL such materiality issues are mapped by its Business Sustainability department to ensure holistic and long-term growth of the company.

As background, in September 2014, JSPL's Business Sustainability team undertook an analysis of the company's materiality issues for the first time. To do this the team first identified JSPL's top 15 stakeholder groups who were directly or indirectly affected by JSPL's activities and those who may have interests in the operations of the company. After that a consensus driven effort led to the identification of a set of materiality issues. Each of these issues have a direct or indirect impact on JSPL's ability to create, preserve or erode economic, environmental and social value for itself, its stakeholders and society at large. These materiality issues often have a financial impact on the organization as well.

22 issues that were identified as material are reviewed by JSPL's Business Sustainability department every year, and progress made in solving these issues are discussed as disclosures that run through this report.

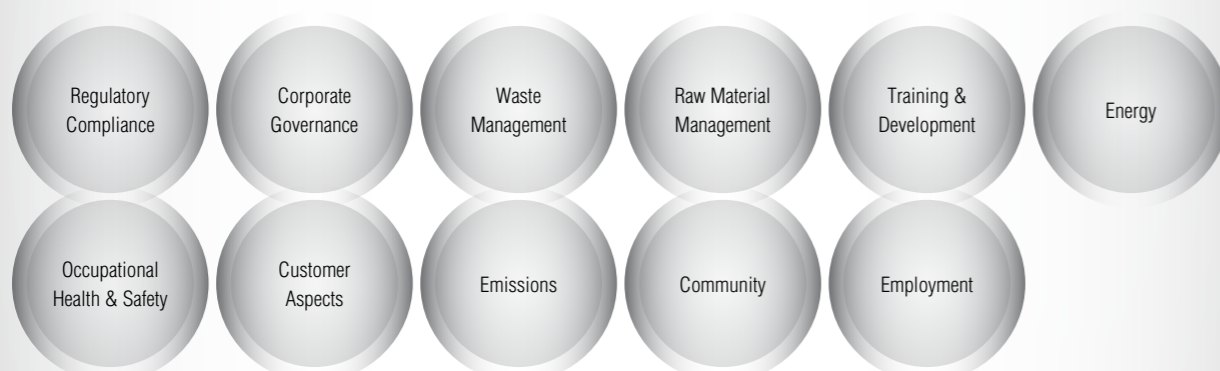
The 22 material issues are presented in the materiality chart below. Further, specific Global Reporting Initiative indicators that are relevant to each of the most critical 11 issues are also disclosed in this Business Sustainability report.

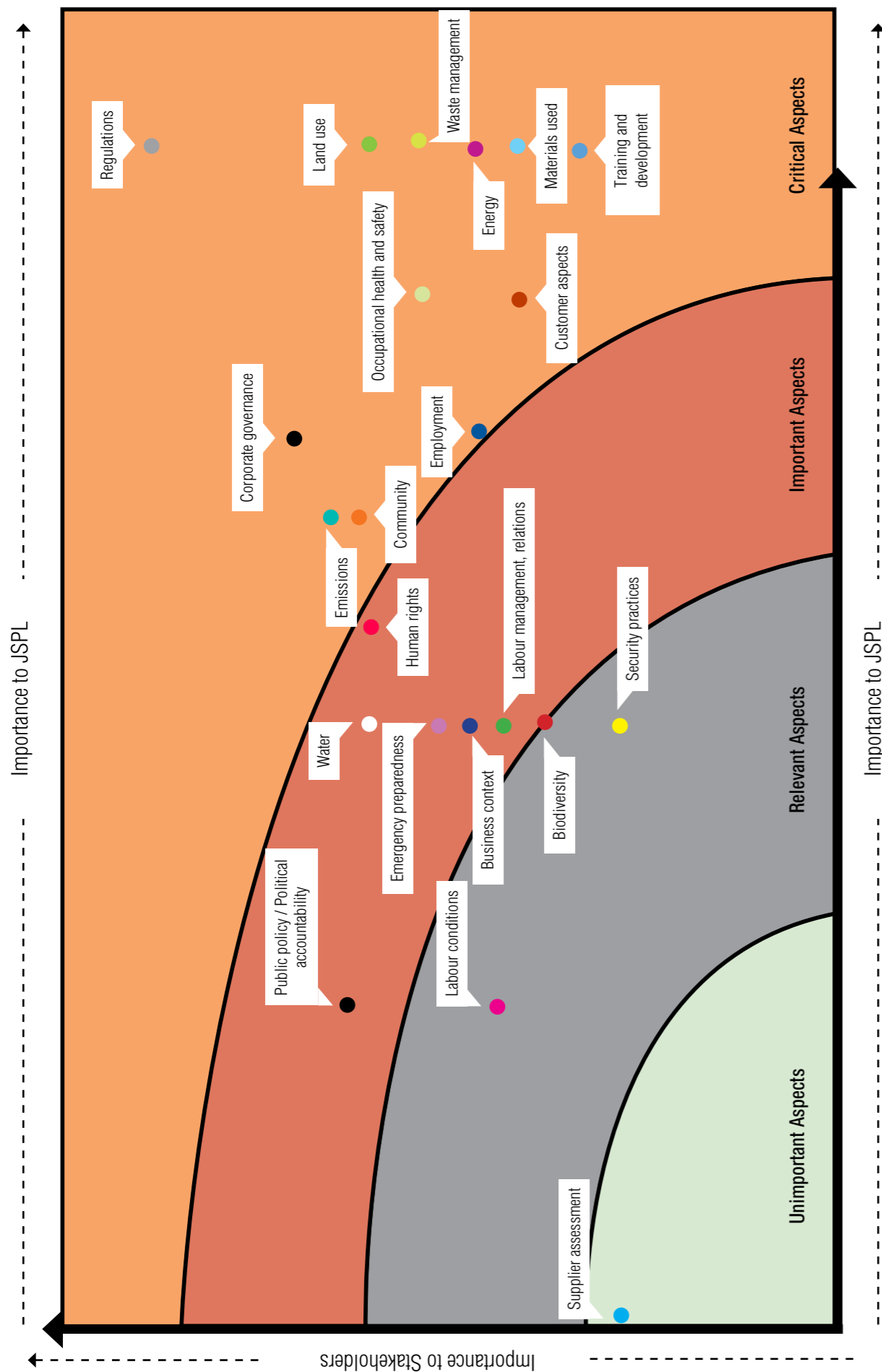
In 2015-16, JSPL has used this materiality analysis to build its business sustainability strategy, stakeholder communication, strategic planning, operational management, and capital investment decisions. Subsequently, key engagements have been developed by respective departments along with relevant stakeholders to overcome materiality issues. During FY 2015-16 we have taken the following steps to address JSPL's most critical materiality issues:

**a) Regulatory Compliances**

- Appointed Risk & Compliance Management officer at each of its sites
- Detailed process formats were developed in-house and later on implemented for tracking status of compliances

**Most Critical Materiality Issues for JSPL**





**b) Corporate Governance**

- Performance of group companies on following aspects viz. ethics, economic, environment, society and governance was reviewed by the board on regular intervals. Board committee for HSE-CSR and Governance & Business Ethics met 4 times in the reporting period.
- The company re-organised and re-engineered its business into five Business Segments (BS) with 18 Strategic Business Units (SBUs) within them, each accountable for its own performance. The Business Council of each SBU will periodically review the business performance and initiate measures to redress its respective concerns. The new organisational structure with a strengthened Group Executive Committee (GEC) facilitates plurality of governance; and will usher in agility in our operations and functions.
- During the year, the company also started a practice of conducting a fortnightly meeting of all its Energy and Environment managers in India via tele-presence for discussion on issues and practices followed by different managers across the group for reducing environmental impact of our operations.
- CSR managers meet was also organised at Barbil for discussion on best practices and challenges faced by them.

**c) Waste Management**

- JSPL has installed bio gas plants at Tamnar, Raigarh and Barbil for managing bio-degradable waste generated at our plant locations. The gas generated out of these plants is being utilised for preparing food at engineers mess and canteens.
- On November 25, 2015 JSPL constituted a business unit for construction materials which also include products that are manufactured from the waste material generated out of steel and power production process. Few examples are cement, bricks, paver blocks, light weight aggregate, and road stabilizer.

**d) Raw Material Management**

- JSPL's leadership put in place a business plan for ensuring its raw material security, ahead of the commencement of the reallocation process of coal blocks. A Coal Management Group was constituted within the company, whose objective was to procure coal both for steel and power business from the most appropriate and cost-effective external sources of coal.

**e) Training & Development**

- During the reporting period, 23,607 man days of training was imparted to regular employees
- The company also promotes higher education of its employees by offering them an opportunity to do M.Tech (Steel Technology) at IIT, Mumbai; or MBA at Jindal Global Business School, Sonapat. This year the company has sponsored 5 employees for M. Tech and 7 employees for the aforementioned MBA program.
- JPL team conducted the second chapter of MDP (People

Management - Grow, Lead and Succeed) from 26th to 29th October 2015. The training programme was conducted to enhance the desire for learning, besides catering to the objectives of developing competencies.

- In the reporting period, Company has also introduced a system (Process Based Organisation) to transform its employees into multi skilled resources which will also help our employees in achieving better growth and hence develop them professionally for larger roles.
- During the reporting period, Company has also introduced a mandatory e-learning training for all its employees on Environment Management and Occupational Health and Safety.

**f) Energy**

- Bureau of Energy Efficiency (BEE) has recommended to Ministry of Power for issuance of 36401 e-certs to the following production units of the group i.e. JSPL, Raigarh; and JPL, Tamnar (4X250MW) in PAT Cycle-1.
- During the reporting period JSPL Raipur got certified for ISO 50001 whereas Barbil and Tamnar units were already certified. DCPD unit is expected to get certified for ISO 50001 in FY 2016-17.

**g) Occupational Health & Safety**

- During the reporting period, the company implemented Global Safety Standards which were developed in 2014-15 across all its Indian production units.
- The company launched an e-learning module on occupational health and safety called 'Be a Safety star'
- The company provided an opportunity to employees for participating in a campaign called STEPATHLON in which a total of 270 employees participated
- The company took a unique initiative of linking the health of an employee to his/her yearly performance. As per this program, each employee is required to develop her/his wellness plan along with the company's medical officer, such that her/his performance on the wellness plan would have an impact on her/his overall performance rating for the year.

**h) Customer Aspects**

- For cement business, the company launched an electronic system for managing retail and institutional sales.
- 60 customers have been identified as 'Key Accounts'

**i) Community**

- For promotion of grassroot leaders and social innovators in India the company launched its first ever Rashtriya Swayam Siddh Samman awards at the national level. Via these awards, the exemplary work of 9 individuals and 10 organisations was recognised, and a cash prize of INR 1 lac was bestowed to each awardee.



3.25 MTPA Integrated Steel Plant, Raigarh, Chhattisgarh



1 MTPA Plate Mill, Raigarh, Chhattisgarh



Rail and Universal Beam mill, Raigarh, Chhattisgarh



Shri. Naveen Jindal, Chairman, JSPL along with Shri. Ravi Uppal, MD & Group CEO, JSPL flagging off India's longest ever Rails measuring 260 metre to the Dedicated Freight Corporation of India Ltd. (DFCCIL) in October 2015



6X135 MW Power Generation facility, Angul, Odisha



1.5 MTPA Steel Melting Shop, Angul, Odisha



Blast Furnace being established, Angul, Odisha



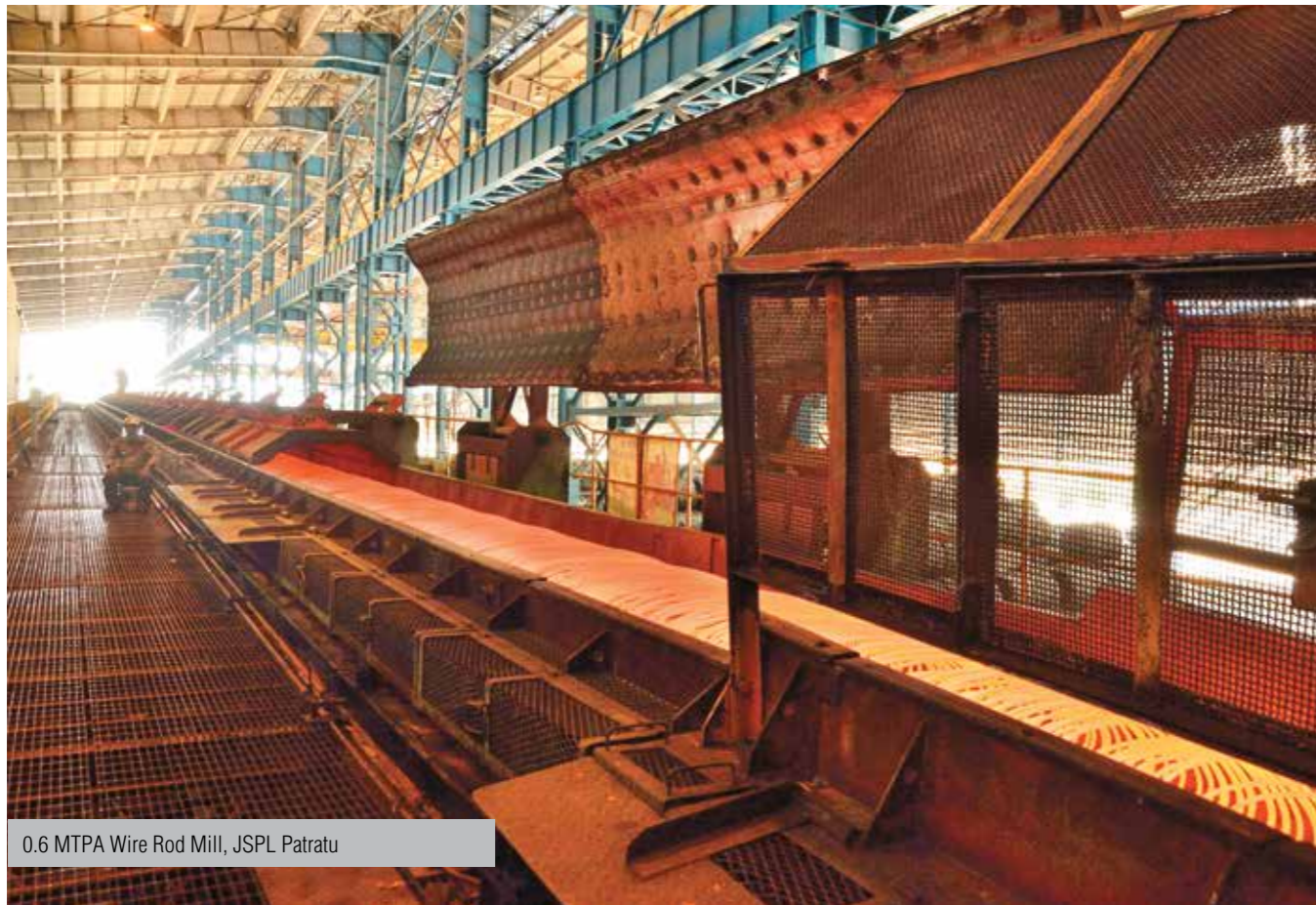
1.8 MTPA Syn Gas based DRI, Angul, Odisha



1 MTPA, Rebar Mill, Patratu, Jharkhand



9 MTPA Pellet Plant, Barbil, Odisha



0.6 MTPA Wire Rod Mill, JSPL Patratu



Heavy machinery division, Raipur, Chhattisgarh



3400 MW Power Plant at Tamnar, Chhattisgarh



Green cover at JPL, Tamnar, Chhattisgarh



Natural Draught Cooling towers at Tamnar, Chhattisgarh



Switchyard at 3400 MW Power Plant, Tamnar, Chhattisgarh





2 MTPA Steel Plant at Sohar, Oman



Continuous Miner Machine In Kiepersol Colliery, South Africa



Dedication of 1.4 MTPA Bar mill to Nation, Jindal Shaded Oman



Jindal Train - Chirodzi Coal Project, Mozambique

# 3.0

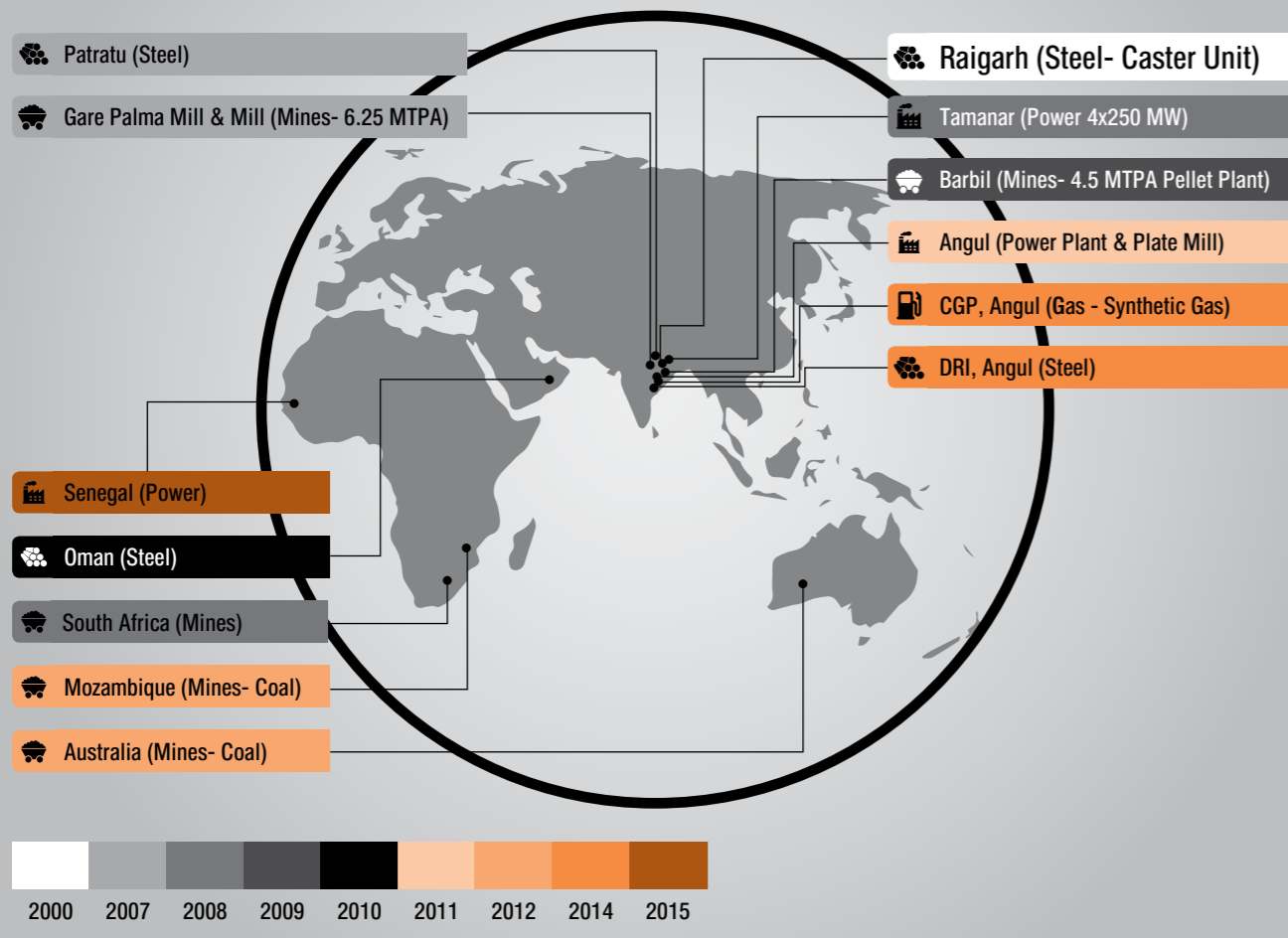
## JSPL's Sustainable Business Model

JSPL clocked in a 26% increase in volume of steel sold in FY 2015-16. This was an all time high turnover of plates, wire rods and TMT despite severe constraints from a very weak steel market, challenging external policy environment and limited raw materials. The company even exceeded the monthly deliv-

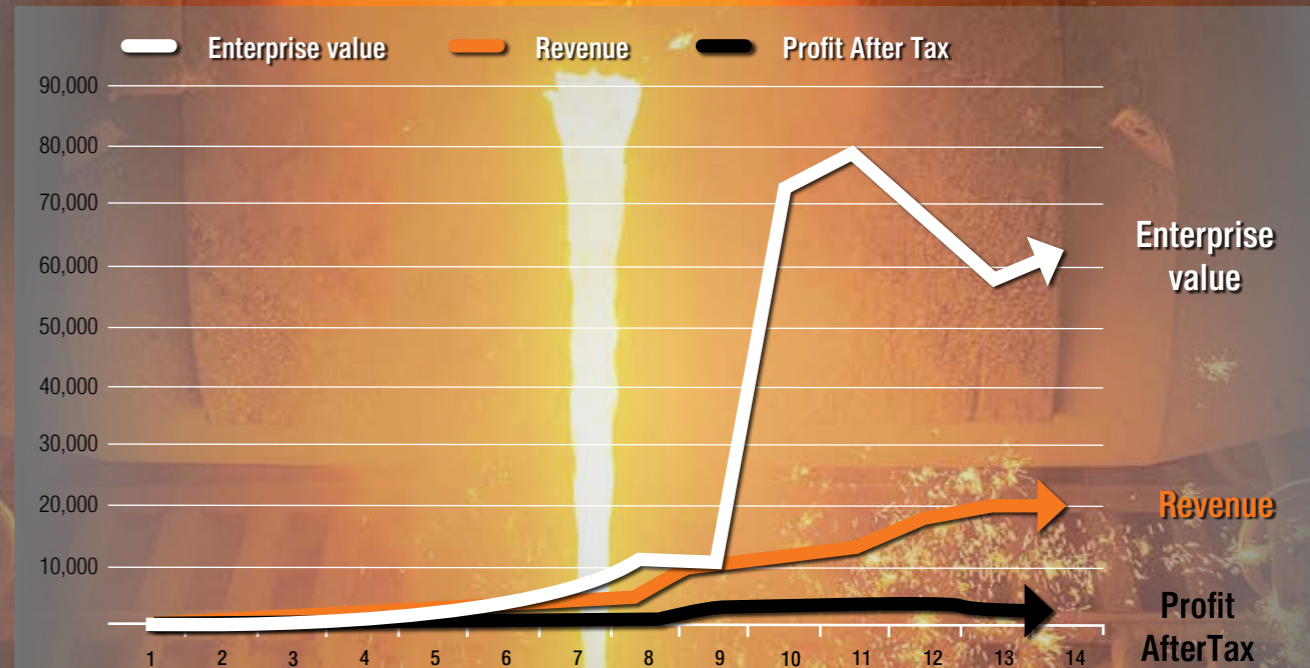
ery of 100,000 MT for several product lines, reduced inventory to the lowest level ever, and achieved a substantial reduction in the company's working capital. The year 2015-16 has been a true test of JSPL's business sustainability, that the company has emerged out of stronger and more efficient than ever before.

### 3.1 Resilience in JSPL's Trajectory

#### Timeline: JSPL's Geographic Footprint 2000 - 2014



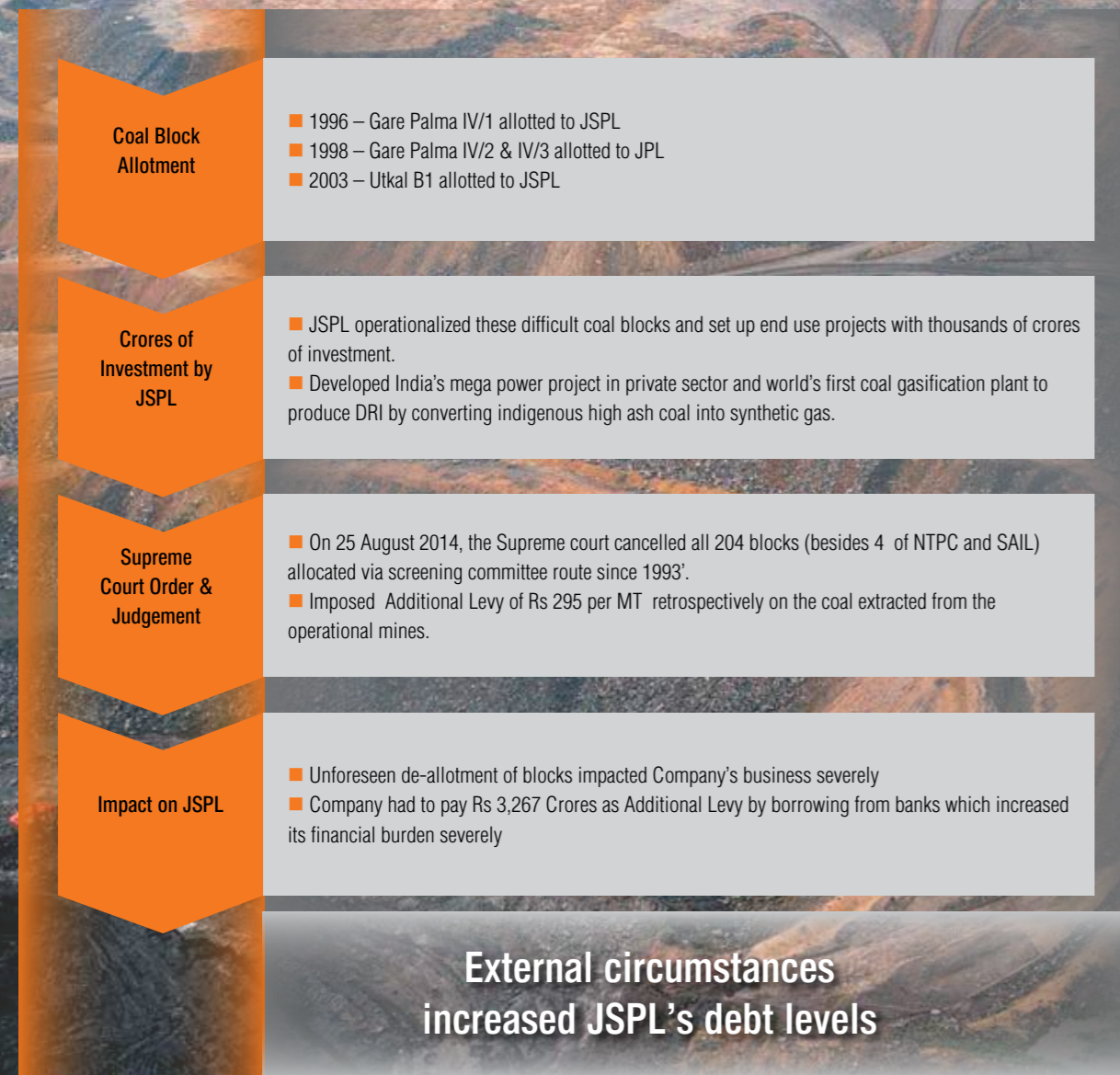
#### JSPL's Spectacular Growth Trajectory 2000 - 2014



## On 25 August 2014....

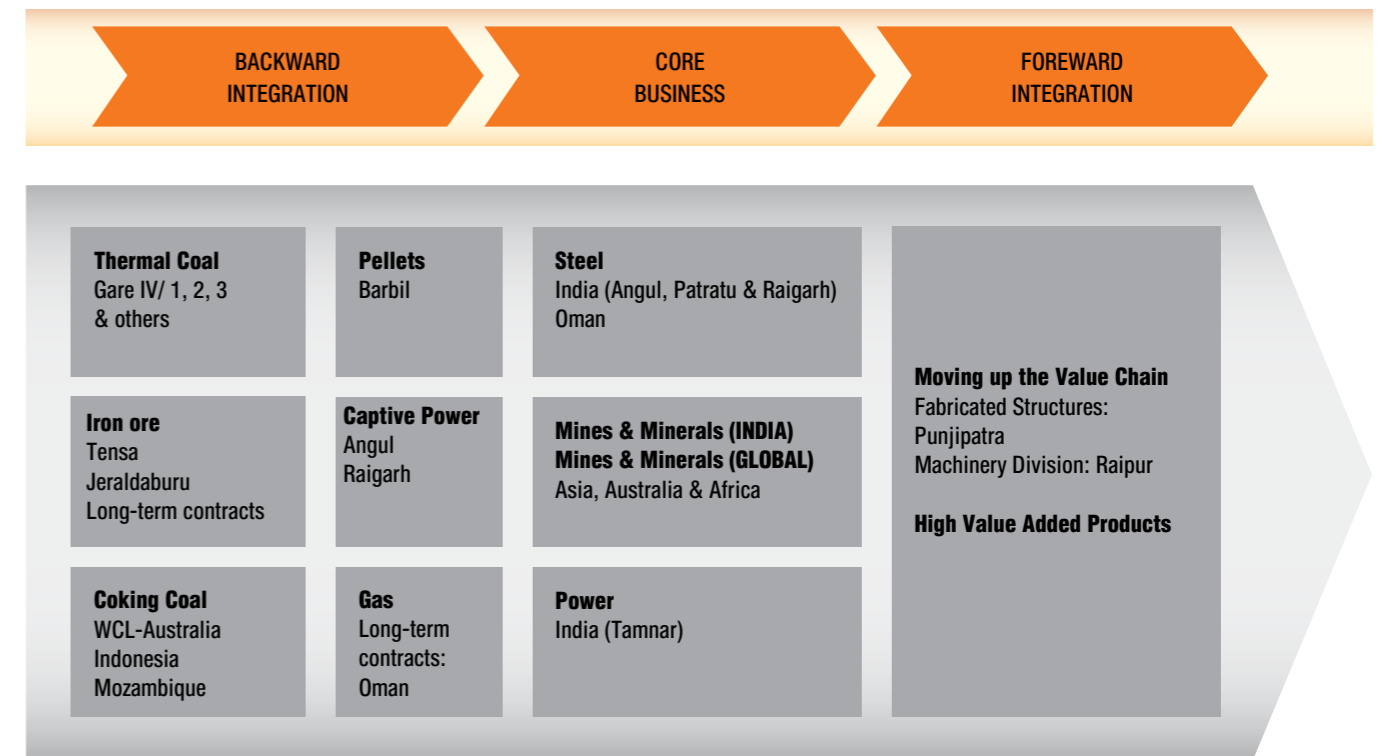
The Supreme Court of India cancelled allocation of all 204 coal blocks (except 4 of NTPC and SAIL) in India which were allotted by the Government of India since 1993

## Coal Blocks De-allocation and Impact



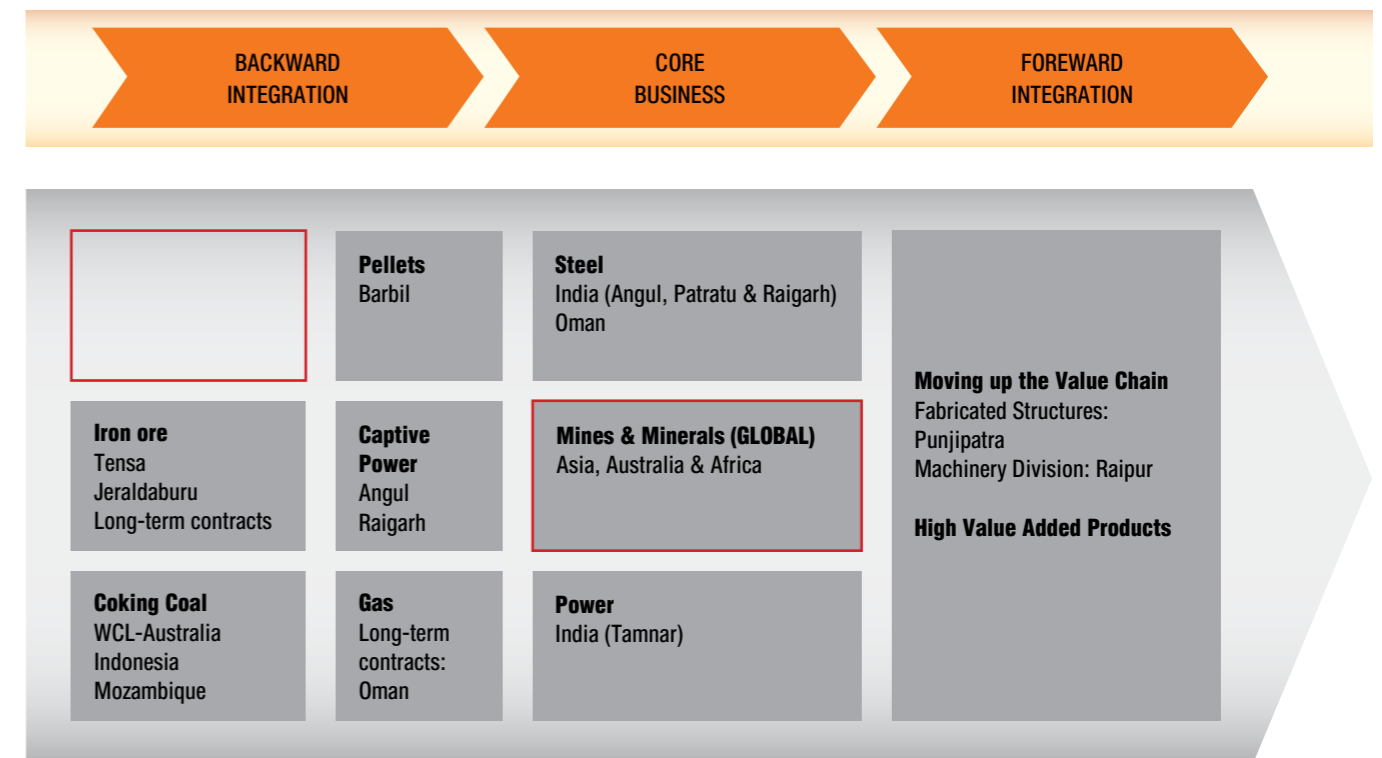
## Our Business Model Changed

2014

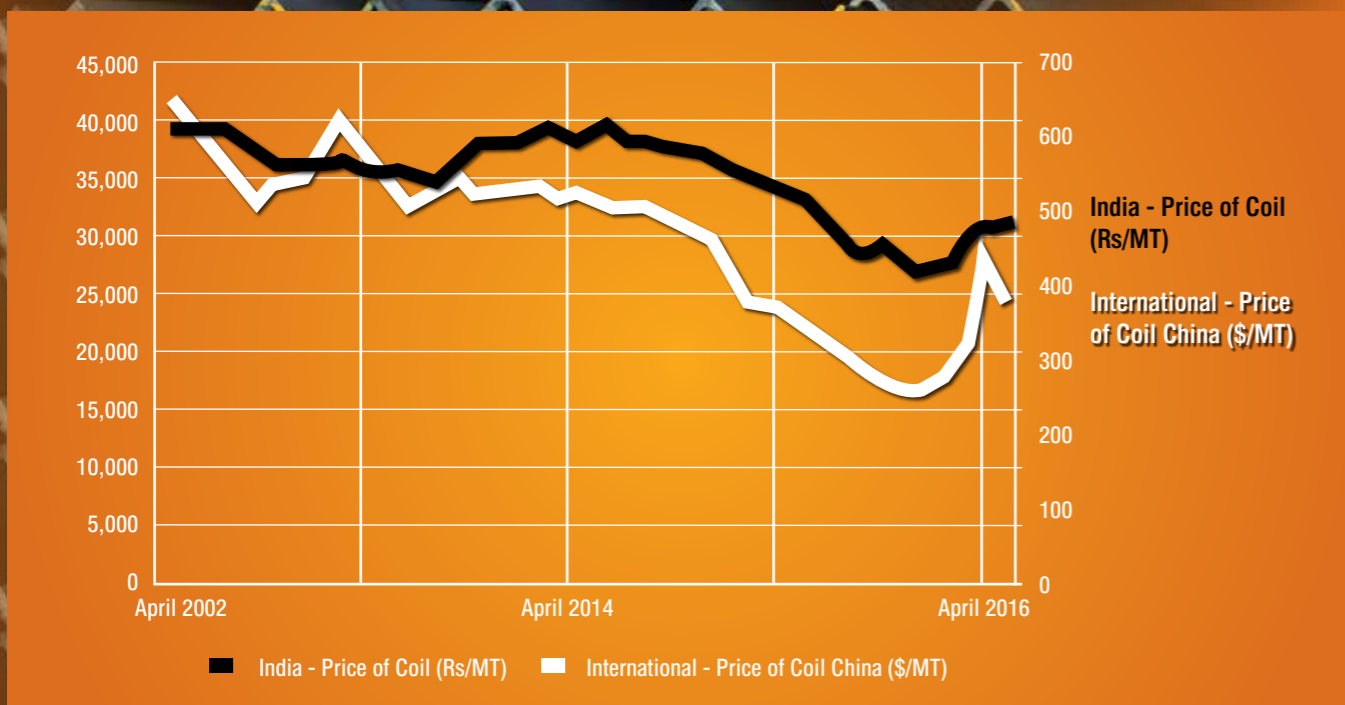


## Our Business Model Changed

2015



## Price of Steel 2012 - 2016

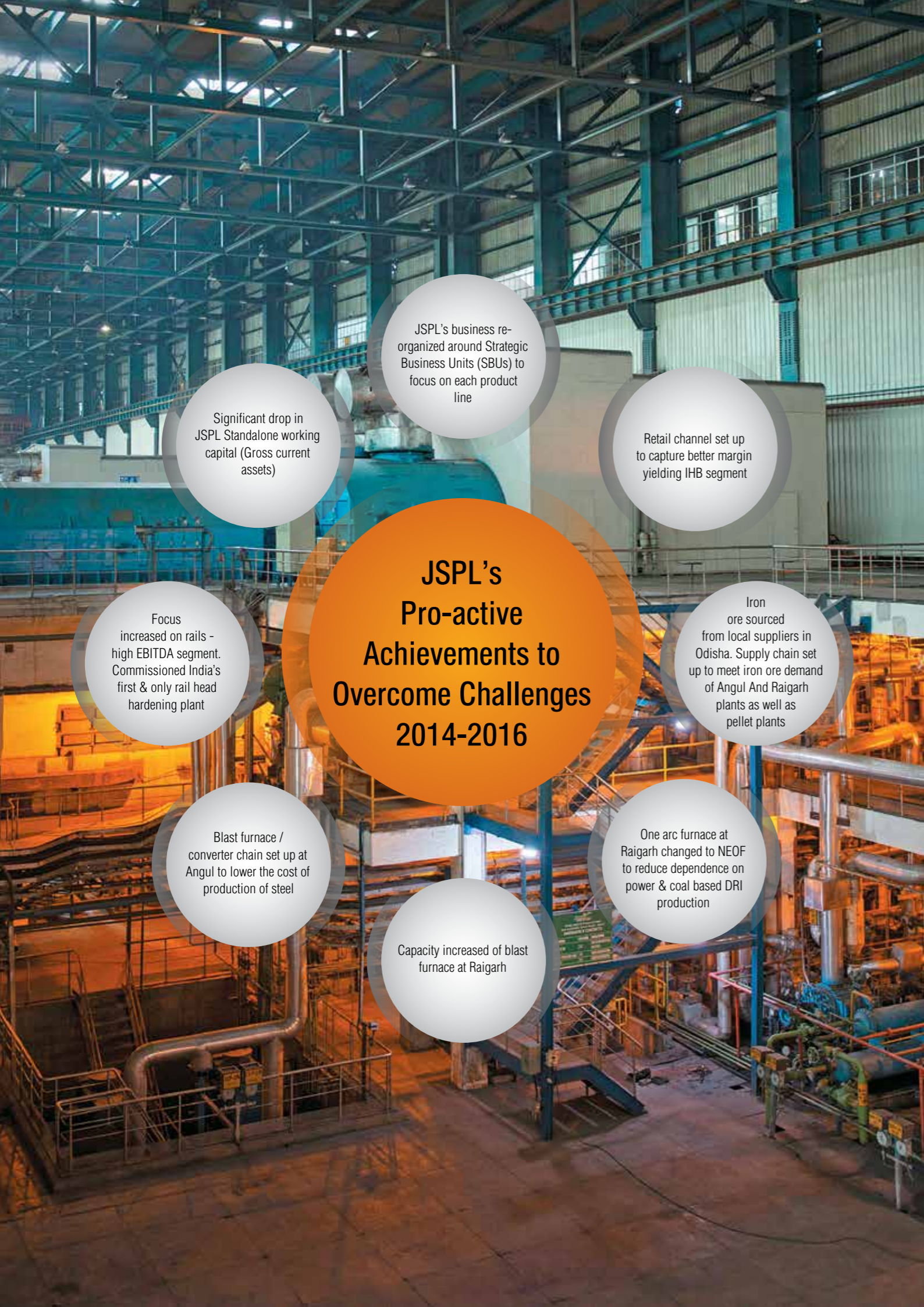


### But Debt Rose Because of Capacity Expansion

- 1 Production capacity built up
- 2 Demand for steel in the markets did not pick up to the level anticipated
- 3 Disruption in thermal coal supply for iron making & power plant due to cancelation of Gare Palma coal blocks
- 4 Cancellation of Utkal B1 coal block base on which JSPL's Angul plant was conceived



**But intrinsically we continued to grow...**



**JSPL's Pro-active Achievements to Overcome Challenges 2014-2016**

JSPL's business re-organized around Strategic Business Units (SBUs) to focus on each product line

Significant drop in JSPL Standalone working capital (Gross current assets)

Retail channel set up to capture better margin yielding IHB segment

Focus increased on rails - high EBITDA segment. Commissioned India's first & only rail head hardening plant

Iron ore sourced from local suppliers in Odisha. Supply chain set up to meet iron ore demand of Angul And Raigarh plants as well as pellet plants

Blast furnace / converter chain set up at Angul to lower the cost of production of steel

One arc furnace at Raigarh changed to NEOF to reduce dependence on power & coal based DRI production

Capacity increased of blast furnace at Raigarh

**Despite Challenges More than a JSPL is added to JSPL**

	IN FY-2014	IN FY-2016	
<b>Steel- India</b>	3 MTPA	4.75 MTPA	~1.6x
<b>Power</b>	1,000 MW	3,400 MW	3.4x
<b>Oman</b>	0 MTPA	2 MTPA	Add
<b>Pellet</b>	4.5 MTPA	9 MTPA	~2x

All capex completed – scale of organisation doubled



2MTPA Steel Plant at Sohar, Oman

## Projects at JSPL set up at least project cost



1.0 MTPA Re bar mill at Patratu, Jharkhand

Source: Company



Aerial view of iron ore mine at Tensa, Odisha

## 3.2 Robust Raw Material Procurement

### a) Iron Ore

In May, 2014 the Supreme Court of India orders for temporary closure of nearly half of the iron ore mines in top iron ore producing state Odisha which resulted in closure of mines contributing up to 30 million tonnes of iron ore requirement. This order also resulted in temporary closure of mine owned by Sarda Mines Private Limited, one of JSPL's major suppliers of iron ore with whom JSPL had a long term agreement for providing iron ore fines for its pellet plant operation. The pellets manufactured at this pellet plants are being utilised for steel making process in Raigarh and Angul. This development led us to introduce changes in our supply chain for iron ore procurement. In order to ensure uninterrupted production, we have also engaged with nearby operating miners as well as traders in nearby geographies through short term contracts.

However we continue to look for opportunities in securing long term contracts with other iron ore miners.

Transportation of purchased iron ore is achieved through Rail and Road mode of transport. In order to ensure efficiency in our logistics we have also purchased 50 Hyva trucks for transportation of iron ore fines which also helped us to significantly overcome dependence on external transporters.

Further, strategically JSPL has reduced its dependency on the mines where the transport rates are monopolized. At some places JSPL has facilitated widening the roads to facilitate quick handling of trucks. JSPL has also taken permission from the State Government to avoid weighment en-route (Lahanda weigh bridge) for faster movement of the trucks. Since the movement of heavy vehicles / trucks is restricted during day time (8AM TO 8PM).

JSPL has also engaged four water tankers to sprinkle water on the transport road for suppression of the dust, so that local people will not be affected. JSPL has also instructed all truck owner and



Coal mine at Tete province, Mozambique

transporters to cover the trucks with tarpaulin while transporting the iron ore fines.

There were a few more challenges for iron ore fine procurement, such as the need to ensure maximum quantity procurement and cost reduction. To overcome these challenges JSPL focused on road transport instead of rail transport for cost reduction. Also, JSPL developed new vendors for procurement of larger quantity at cost effective prices. Further, manual unloading system at JSPL's production site was developed for trucks which are not tippers.

### b) Coal

In JSPL's Business Sustainability Report 2014-15 we had reported that, on 24 September 2014, the Supreme Court of India declared that the coal blocks allocated by the Government of India since 1993 were done in an arbitrary way. As a result of the Supreme Court directive, 215 out of 218 coal blocks (including JSPL's coal blocks) that had been allocated since 1993 were de-

allocated and auctioned/allotted in a phased manner through a competitive bidding process.

After the deallocation of coal blocks, coal supply became a challenge for the steel and power industry; however JSPL fulfilled its coal requirements by procuring coal through Fuel supply agreement with Coal India Limited, Forward auction, Special forward auction and e-auction conducted by Coal India limited and Imported coal.

The transportation of coal in JPL Tamnar is mostly done through roads whereas in Angul and Raigarh coal is transported both by rail and road.

By using a judicious mix of coal sourcing JSPL has been able to fulfill its operational requirements, however the quality of coal is a major concern since it has led to high fuel costs and may result in higher environmental impact. We are very conscious of reducing our fuel costs and environmental impact and have therefore set ourselves targets for making our operations and logistics more efficient.

For improvement of our logistic efficiency, JSPL has strengthened road infrastructure in the areas connected to various mines of Coal India Limited from where JSPL generally procures coal. This helped us in reducing turnaround time for our trucks and also helped in improving accessibility for the local communities living in surrounding areas.

Another salient feature in FY 2015-16 was that the inventory management for raw material was mostly done taking into account the season. For instance, during summers, inventory managed was low while during the rains a minimum of 30 days inventory was maintained. This helped in reducing outflow of cash and managing well financial constraints.

### 3.3 Product Portfolio Diversification

During FY 2015-16 JSPL focused on consolidating a highly diversified portfolio of products. Some of JSPL's most significant products are as follows:

#### a) Jindal Panther TMT rebars

JSPL produces Jindal Panther™ TMT Rebars at its most modern rebar mill 1 MTPA capacity located in Patratu, Jharkhand. The company produces TMT rebars with the latest on-line high yield quenching and self-tempering (HYQST) technology. The modern mill equipped with morgan enhanced temperature control system (METS) produces TMT rebars in 6mm to 40 mm diameter suitable for high strength applications.

The production of TMT rebars involve a combination of plastic deformation of steel in austenitic stage followed by quenching and further tempering. The process controls at each critical operation ensures uniform properties in each rebar and provides the TMT rebars with a soft ferrite and pearlite fine grained core, a strong and tough tempered martensite layer imparting it with high ductility as well as strength, thus making it ideal for high rises, dams, bridges, individual houses and any critical structures where high yield strength is required without compromising on the elongation properties.

The TMT rebars are conforming to the latest BIS-1786: 2008 specifications and are available in Fe 500D, Fe 550D & 600 grade in normal, EQR & CRS quality, where Fe 500D grade is highly suitable for seismic prone areas.

The company is committed to provide complete customer satisfaction with respect to quality, delivery and services. Feedback from the customers acts as inputs for continuous improvement on products and services.

#### Cut and bend bars

Recognising the need for a customised solution, the company has developed the concept of ready-to-use steel through its innovative product, Cut and bend bars. The ready to build

customised TMT bar solution customises the lengths of the rebars and bends them at required angles in accordance with the given project requirements. This fast and efficient service caters to every kind of reinforcement required, redefines concepts of time and inventory management, and reduces material wastage.

#### Welded wire mesh

This is a processed steel product that consists of rebars welded together to form a grid pattern. Its use reduces construction time considerably as it eliminates activities like cutting, marking and spacing of bars and binding of wires to the bars. It provides an ideal and convenient solution with practical and functional advantages.

#### b) Rails & head hardened rails

##### Long rails

Keeping in view the importance of the significantly growing rail sector in India and the nearby markets, JSPL has pioneered the manufacturing of 121 meter long track rails and a facility to factory weld these rails in welded lengths of up to 480 meters. The world's longest track rails are a testimony to JSPL's manufacturing capabilities where continuous innovation is a practice rather than an exception. Long rails from JSPL help in achieving a drastic reduction in the welded joints, providing enhanced safety, cost reduction and travel comfort. The company's products are subjected to stringent quality norms and therefore match all international standards. JSPL is also a preferred supplier for crane rails which find widespread usage in electric overhead travelling (EOT) cranes as well as for gantry crane operations.

##### Flash butt welded rail panels

These rails are in lengths ranging from 13 meter to 121 meter. A modern flash butt welding plant equipped to produce up to 484 meter long flash butt welded rail panels is also available. The company has the facility for transporting such long rails to the construction sites. The manufacturing plant is equipped with state-of-the-art facilities that aid continuous on-line inspection and quality control, helping to adhere to specifications laid down by the Indian Railways and other international organisations. The rails are rolled in different sections ranging from IRS-52, UIC-54 & UIC-60 conforming to Indian Rail specifications, IRS T-12 as well as various other international railway specifications.

#### c) Parallel flange beams & columns

JSPL has pioneered the production of medium and heavy hot rolled parallel flange beams and column sections in India. These sections are cost effective through savings in steel consumption and provide ultimate design flexibility to the structural designers. The company has collaborated with JFE Engineering Corporation, Japan (formerly known as NKK Corporation), to introduce this innovative product in India. It leads technical innovation and advancement by offering H-beams that are unmatched in quality, performance and cost effectiveness. Manufactured through the universal rolling method, these beams



have standard nominal depth, with different flange and web thicknesses. This helps customers to choose from variety of options in terms of unit weights and sectional properties.

Produced as per various Indian & International standards, these sections are superior in terms of strength, efficiency, higher axial and bending load bearing capacities, workability and economy vis-à-vis conventional tapered flange beams. These parallel flange beams and columns enable complex fabrications in high volumes due to inherent functional advantages. When used under bending load, steel savings of up to 10-25% are achieved, as beams of lower sectional weight can be used.

The company today rolls 47 different sizes/series and over 160 different variants (unit-weights) of structural steel including beams columns, channels and angles conforming to Indian and international BS / UB / UC / NPB / WPB / IPE / HE series.

#### d) Structural steels (Angles & Channels)

##### Angles

JSPL is manufacturer of hot rolled equal leg angles which are available in variety of grades and sizes, making it ideal for structural applications, general fabrication, machining and repairs. Angles are one of the most widely used products in the construction industry. It offers characteristic features of being a high-quality low-cost material, such as:

- Wide dimensional range from ISA 50x50 to ISA 250x250 mm
- Excellent surface finish
- Close dimensional tolerances
- Formable & machinable

##### Channels

One of the hot rolled structural shapes which JSPL offers is the

tapered flange channel which is available in a wide range of sizes and thicknesses. The shape provides superior structural support, making it an ideal product for frames and braces used for machinery, enclosures, vehicle, building and structural support applications.

JSPL Channel offers the following characteristics which make it suitable for use in various industrial segments and as support structure-

- Mild to High tensile strength
- Wide dimensional range from ISMC 75x40 to 400x100 mm as per IS808 & various international standards.

#### e) Plates & Coils

JSPL is equipped with India's first state-of-the-art plate mill that started producing plates and coils of 5 meter and 3 meter width respectively, for the first time in the private sector. The plate-cum-coil mill (steckle mill) of 1 MTPA capacity located at Raigarh, Chhattisgarh produces plates ranging from 8 mm to 120 mm in thickness in width of 1500 mm to 3500 mm and coils in thickness range of 8 mm to 25 mm in width of 1500 mm to 2500 mm.

The mill is equipped with walking beam type of reheating furnace where slabs are re-heated at a temperature of 1250 degree Celsius and rolled in a mill with a 2 hi-reversing type roughing stand and a 4 hi-reversing type finishing stand. To ensure excellent surface quality, high pressure de-scalers are provided at the entry and exit points. An auto level 2 widths and thickness controlling system coupled with heavy leveller assures close dimensional tolerances and an increased level of flatness control. Right from the slab charging and plate production to the conclusive stage, fully equipped inspection facilities are in place.

The plate mill at Angul, Odisha of 1.2 MTPA capacity produces



plates in the thickness range of 5-150 mm with a width of up to 5000 mm. The mill is equipped with latest equipment and technology like MULPIC cooling, online ultrasonic testing, trimming shear, slitting unit to produce plates of high strength and excellent surface finish.

The plates and coils are of premium quality in terms of dimensional adherence and internal soundness owing to its clean raw material, sound steel refining facilities and an efficient rolling mill. These comply to IS 2062 specifications up to E450 grades besides a wide range of international standards and steel grades as per EN, DIN, JIS, ASTM and so on.

#### f) Wire Rods

In line with the company's philosophy to expand its product range to offer a complete product basket to the customer, JSPL offers wire rods in 5.2 mm to 22 mm diameters from its plant at Patratu, Jharkhand.

The 0.6 MTPA capacity wire rod mill at Patratu is equipped with the latest technology from Morgan Construction Company, USA (now known as Siemens). This mill is operational with advanced rolling equipment such as reducing and sizing mill (RSM), high speed shear, pinch rolls and laying heads along with controlled temperature rolling and controlled cooling to meet the processing requirements of various grades of carbon and alloy steel. This results in improved mechanical properties due to finer and more uniform grain size suitable for rapid spheroidised annealing or high-yield strength with optimal scale weight and type.

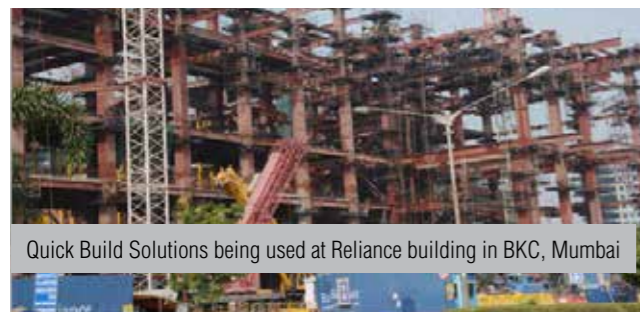
The wire rods come with the promise of high quality and dimensional precision.

The Wire rod mill at Patratu, Jharkhand produces low carbon, medium carbon, high carbon and other special grades that include cold heading quality (CHQ), electrode quality, high carbon wire rods for spring steel, spoke wire, pre-stressed concrete, tyre bead and ACSR.

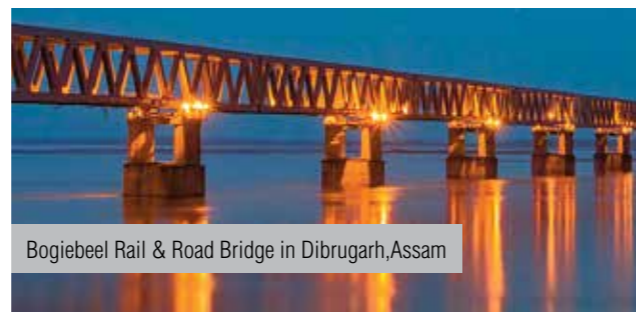
## Key Projects using Quick Build Solutions



Dharamshala Cricket stadium



Quick Build Solutions being used at Reliance building in BKC, Mumbai



Bogiebeel Rail & Road Bridge in Dibrugarh, Assam



Vijayawada Airport plan



Floor being built by using Speedfloor

#### g) Fabricated Sections

The company has successfully added fabricated sections to its growing basket of quality products by offering:

- H-type beams
- I-type beams
- Box sections
- Star columns

It is the only integrated steel producer who is also a large scale producer of fabricated sections with an annual capacity of over 150000 MT at three locations to cater to general market.

Manufacturing of these sections is completely as per user's specification. The fabricated sections meet the quality standards demanded by the industry. Plates for these sectors come from the company's own plate mill and are thoroughly inspected through various quality checks fully backed by mill certificates.

#### h) Jindal quick build solutions

JSPL has forayed into the Construction Solutions Business to harness the potential for need of lighter, faster, easier and affordable method of construction. In this age of quick turnover of projects, customers look forward to a "Single Window Solution" from start to finish. JSPL has built expertise in Structural Steel fabrication and Project Management to construct steel buildings. JSPL is the first and only steel producer in India producing as well as fabricating E 550 Steel plates. In addition to this, the company has introduced several smart and innovative construction solutions – like Speed floor, Cut & Bend, etc. – to harness the need for faster construction. As the category is growing exponentially with the infrastructure and real-estate projects gathering momentum, the company is evaluating options to innovate and introduce a portfolio of new age construction solutions.

Apart from the commoditised products, to ensure a cost effective and efficient construction solution, JSPL through continuous innovation offers engineering based Customised Construction

Solution to its entire clientele. These Solutions, using 550 MPA Steel Plates or 450 MPA Hot Rolled Sections (UB) ensures an optimum steel consumption to build a building or structure, over presently used E350 grade. Thus, it reduces project gestation period and overall cost, while scoring additional green points for building validation. Another innovative product is Speed floor, which is a unique flooring solution that replaces presently prevailed prop system, thus reducing time in making a floor to as low as 3 days.

Among the additional value-added services offered to the client most prominent are – Cut & Bend TMT rebar (produces zero scrap), Shop fabricated Steel Structures using higher grade (reduces steel tonnage and foundation cost) & Weld Mesh TMT rebar (ready to use reducing dependency on labour).

Our in-house Design and Engineering team uses the latest softwares ETABS, STAAD PRO, TEKLA, SKETCHUP to optimally design and detail – High Rise Steel buildings, Bridges, Multi-level car parking, Airports, Stadiums, etc. Such design solutions helps an engineer to visualise the complete structure and thus reduces the gestation time for the Project.

JSPL can fabricate all kind of steel structures in its fabrication plants having a total capacity of 2,40,000 MT/year using the latest welding technology following a strict Quality Systems. Our Hold and Witness Quality Assurance Plan helps a customer to carry out his own inspection at stipulated intervals and ensures complete customer satisfaction. In addition, JSPL also provides project management services to ensure 'Just in time' delivery and also offers erection supervision services at construction site.

#### i) Speed floor

The company has come up with innovative techniques to eliminate the out dated conventional flooring system with a suspended concrete flooring system known as "Jindal Speed floor".

The Speedfloor is a lightweight suspended concrete floor system



Billet Stacked at JSPL's Raigarh Steel Plant

that is quick and easy to install. An extensive range of joist depths and topping thicknesses that satisfies loading and fire requirements, offers contractors and end users an efficient and cost effective product.

Steel used for making the joist is of grade 350 which has minimum yield strength of 350 mega pascal (MPa) and a minimum tensile stress of 380 MPa as well as a minimum coating of 275 is maintained. Joists are available in five different depths as follows:

- H-type beams
- I-type beams
- Box sections
- Star columns

#### j) Jindal Panther Cement

JSPL produces Jindal Panther™ Cement at its 0.7MTPA capacity plant located at Raigarh, Chhattisgarh which operates the most modern Vertical roller mill supplied by 'Loesche Germany', through a fully computerized process control room.

The company has the license to produce 4 types of cement:

- Portland Slag Cement (PSC) confirming to IS: 455:1989
- Portland Pozzolana Cement (PPC) confirming to IS: 1489:1991 Part -I
- Ordinary Portland cement (OPC) 53 grade confirming to IS: 12269:1987
- Ordinary Portland cement (OPC) 43 grade confirming to IS: 8112:1989

#### k) Power

Driven by JSPL's vision and ideologies, Jindal Power Limited (JPL), a subsidiary of Jindal Steel & Power Limited, is a leading power company in India across the energy spectrum: thermal, hydro and renewable. JPL has been contributing significantly to the growing needs of power in the country and its installed capacity is 3400 MW as of 31st March, 2016. JPL commissioned the first unit of its 4x250 MW thermal power plant in the Raigarh district

of Chhattisgarh in 2007, becoming the first private player in the country to set up a mega Independent Power Plant (IPP).

Since its inception the plant is integrated with a dam to feed water to the plant and a 258-km long 400-KV double circuit transmission line to pump the power into the National Grid.

JPL aims to emerge as a significant player in the power industry based on technical and managerial capabilities thereby contributing towards nation building.

#### l) Minerals

JSPL produces economical and efficient steel and power through backward and forward integration. It has mining lease of coal and iron ore at various locations within India and abroad. Owning captive mines has ensured the company of uninterrupted supply of high quality raw material. This has reduced the dependency on third party thereby resulting in cost and time saving.

To mitigate the negative impact of mining on the environment the company has been carefully preparing its mining plans. Air and water quality, noise and other environmental parameters are monitored regularly and maintained well within permissible limits. CSR activities around mining areas are undertaken to address the socio-economic needs of the local communities.

#### m) Semi-finished products

The company's steel making facility at Raigarh, Chhattisgarh has a capacity to produce 3.25 MTPA of crude steel and a similar quantity of semi-finished steel which is primarily used for captive use at its 0.75 MTPA capacity rail and universal beam mill (RUBM), 1 MTPA capacity plate and coil mill and 0.6 MTPA capacity medium and light structural mill (MLSM).

#### Semi-finished steel production (casting) facilities:

- 2 units 4 strand bloom-cum-beam, blank-cum-round caster (1 MTPA capacity)- These are one-of-its-kind in India and can cast beam blanks in size 480 x 420 x 120 mm, 355 x 280 x 90 mm for rolling of structural sections, blooms in sizes 285 x 390 mm, 280 x

320 mm or 250 x 250 mm for rolling of structural sections and rails and rounds in 140, 160, 200, 220, 255, 280, 305, 320 and 350 mm diameter for production of seamless pipes. While cast beam, blanks and blooms are for both captive use and sale, cast rounds are produced for outside sale.

- 6 strand billet-cum-round caster (0.75 MTPA capacity)- It can cast billets in sizes 130 mm x 130 mm, 150 x 150 mm and 200 x 200 mm for rolling of structural products or rounds in diameter 140, 160, 180 and 200 mm for production of seamless pipes, all for sale.

- 6 strand billet-cum-round caster (0.75 MTPA capacity)- It can cast billets in sizes 130 mm x 130 mm, 150 x 150 mm, 165mm x 165mm, bloom 250 x 250mm for rolling of structural products or rounds in diameter 140, 160, 180 and 200 mm for production of

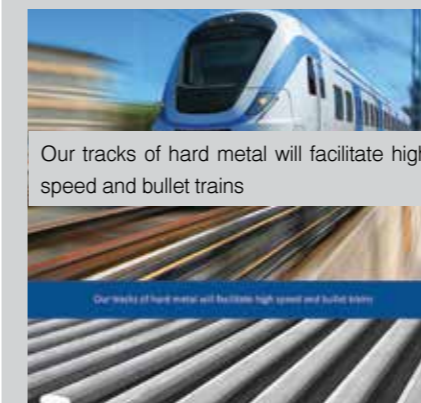
seamless pipes.

- Single strand slab caster (1 MTPA capacity)- It can cast slabs in thickness of 215, 250, and 280 mm and in widths ranging from 1500 mm to 2600 mm, for captive use in the company's plate mill and for commercial sale.

- Semi-finished products from the company can be delivered in a wide range of carbon steel and alloy steel grades with ultra low gas and sulphur contents. They come assured with high internal soundness and dimensional uniformity.

- Besides captive use, semi-finished products from the company have carved an impressive name for themselves in the Indian and international seamless pipe industry as well as various leading integrated mills and rolling facilities in Europe, South East Asia, West Asia and the Middle East.

**We are investing in new capabilities, technologies and innovation to create bespoke, value-accretive products that enjoy high demand in domestic and international markets. Our initiatives also help strengthen the country's export sector. Our manufacturing mettle in India and Oman, benefits the nation and the world.**



Our tracks of hard metal will facilitate high speed and bullet trains

#### Dispatched India's longest ever 260 metre rails

We are India's first and only private sector steelmaker manufacturing Rails. We produced the world's longest single piece Rail of 121 metre length.

During FY2015-16, we dispatched India's longest ever rails, measuring 260 metres to the Dedicated Freight Corridor Corporation of India Limited (DFCCIL). The 260-metre-long rails will be used for the construction of eastern corridor of the landmark 350 kilometre dedicated freight railway network in India.



CONSTRUCTION MATERIALS & SOLUTIONS  
# 100 GRADE STEEL FOR THE FIRST TIME IN INDIA  
FROM JINDAL STEEL & POWER LIMITED

We are among the few global steelmakers, who have the capabilities to produce special head hardened rails for high speed and bullet trains. We are strategically positioned to participate in the expansion of railway network in India and globally.

#### Construction of Noida's G+33 High-rise Steel Building

We have partnered with the Bhasin Group for the first high-rise steel building in Noida ¾ the Festival City at MIST Avenue. The 33 storied world-class commercial complex, spread over nine lakh square feet, will be built by harnessing international cutting-edge technology, using JSPL's E550 MPa Fabricated Structural Steel columns and beams.



#### High strength steel beam

JSPL's Rail and Universal Beam Mill (RUBM) in Raigarh successfully developed Hot Rolled Parallel Flange IS:12778 E450 grade – high strength steel beams with minimum Yield Strength (YS) of 450 MPa. This remarkable development have opened new avenues for our Construction Solutions Business and is a unique proposition for high-rise residential as well as office buildings. Recent applications include the Flipkart Campus project in Bangalore where JSPL partnered with BL Kashyap & Sons Ltd, and have used the hot rolled steel beam of E450 grade.

# 4.0

## JSPL's Sustainable Management Processes

### 4.1 Ethics and Values

JSPL has a well-defined policy called 'Group Code of Conduct' (GCoC), embodied in a handbook given to each new employee. As on every year, in FY 2015-16 the GCoC was reviewed. E-learning modules too are available on the employee intranet to help employees stay up with the codes. During the year, employees completed certification and declarations pertaining to compliance with the GCoC. Every employee is required to give 3 declarations pertaining to conflicts of interest in ownership of property, employment of a relative at JSPL and business relations with JSPL. It is mandatory for all employees to certify at least once in 2 years.



Operations in Steel Plant, Raigarh, Chhattisgarh

JSPL has also established all policies required by the National Voluntary Guidelines stipulated by the Ministry of Corporate Affairs.

### JSPL's Corporate Policies Mapped to the NVGs

National Voluntary Guidelines Principle	JSPL Corporate Policies
<b>PRINCIPLE 1</b> Businesses should conduct and govern themselves with Ethics, Transparency and Accountability	a. Code of Conduct for Board of Directors and Senior Management of Jindal Steel & Power Limited
	b. Code of Corporate Disclosure Practice for Prevention of Insider Trading
	c. Code of Internal Procedures and Conduct for Prevention of Insider Trading in Shares of The Company
	d. Group Whistle Blower Policy
	e. Group Code of Business Conduct
<b>PRINCIPLE 2</b> Businesses should provide goods and services that are safe and contribute to sustainability throughout their life cycle	a. Environment Policy
	b. Quality Policy
	c. Total Productivity Management Policy
	d. Sustainability embedded in Life Cycle of Products.
<b>PRINCIPLE 3</b> Businesses should promote the well-being of all employees	a. Code of Conduct for Board of Directors and Senior Management of Jindal Steel & Power Limited
	b. Employee Well Being Policy
	c. Group Whistle Blower Policy
	d. Group Code of Business Conduct
	e. Safety & Occupational Health Policy
	f. Environment Policy
<b>PRINCIPLE 4</b> Businesses should respect the interests of, and be responsive towards all stakeholders, especially those who are disadvantaged, vulnerable and marginalized	a. Group Code of Business Conduct
	b. CSR Policy
	c. Stakeholder Mapping and Stakeholder Engagement Policy
<b>PRINCIPLE 5</b> Businesses should respect and promote human rights	a. Group Code of Business Conduct
	b. Human Rights Policy
	c. Group Whistle Blower Policy
	d. Safety & Occupational Health Policy
<b>PRINCIPLE 6</b> Businesses should respect, protect, and make efforts to restore the environment	a. Code of Conduct for Board of Directors and Senior Management of Jindal Steel & Power Limited
	b. Environment Policy
	c. Energy Policy
	d. Group Code of Business Conduct
<b>PRINCIPLE 7</b> Businesses, when engaged in influencing public and regulatory policy, should do so in a responsible manner	a. Policy Advocacy
<b>PRINCIPLE 8</b> Businesses should support inclusive growth and equitable development	a. CSR Policy
<b>PRINCIPLE 9</b> Businesses should engage with and provide value to their customers and consumers in a responsible manner	a. Quality Policy
	b. Group Code of Business Conduct



6X135 MW power plant at Angul, Odisha

Further there is a procedure outlined for employees to make proactive declarations of any conflict of interest with the company. The 'Speak-Up' Forum organized several times in the year for employees helps raise an alert on any ethical concern noticed anywhere within the company.

JSPL has a Group Chief Ethics Officer who is actively engaged in ensuring that all policies are implemented. Further, on 1 October 2015 a Group Ethics Committee was also constituted that supports the Group Ethics Officer by periodically reviewing any complaints or issues related to ethics in the company, reporting the cases if any to the Board Committee, and ensuring that the cases are appropriately resolved.

## 4.2 Good Governance at JSPL

Corporate governance at JSPL is oriented towards greater accountability, inclusivity, equity, responsibility and transparency in the company within the following framework:

- Engaging a diverse and highly experienced Board of Directors with expertise in industry, finance, management and law
- Deploying well-defined governance structures that establish checks and balances and delegate decision-making to appropriate levels

- Adopting transparent and robust systems, processes, policies and procedures
- Making high levels of disclosures for dissemination of corporate, financial and operational information to all stakeholders

Having strong systems and processes to ensure full and timely compliance with legal and regulatory requirements. This framework is implemented through a combination of strategic governance structure and an operational governance structure, which as described below:

- 1. Strategic governance structure:** This is composed of a high-level Group Executive Committee (GEC), Core Management Team (CMT) and a Senior Management Committee (SMC), all with individual and collective roles and responsibilities.
- 2. Operational governance structure:** This is composed of a high-level Management Committees (MANCO) for each business segment and Unit Committees (UNICO) at each location. Continuous meetings and deliberations at these levels ensure timely and appropriate decision-making and helps drive collective change in an efficient and effective manner.
- 3. Board of Directors** This apex governing body frames and drives corporate governance policies. Its role includes creating value for the company's stakeholders while remaining committed to its vision, mission and values.

## Board of Directors



**MRS. SAVITRI JINDAL**  
CHAIRPERSON EMERITUS



**MR. NAVEEN JINDAL**  
CHAIRMAN



**MS. SHALLU JINDAL**  
DIRECTOR



**MR. RAVI UPPAL**  
MANAGING DIRECTOR & GROUP CEO



**MR. SUDERSHAN KUMAR GARG**  
INDEPENDENT DIRECTOR



**MR. HAIGREVE KHAITAN**  
INDEPENDENT DIRECTOR



**MR. HARDIP SINGH WIRK**  
INDEPENDENT DIRECTOR



**MR. RAM VINAY SHAHI**  
INDEPENDENT DIRECTOR



**MR. ARUN KUMAR PURWAR**  
INDEPENDENT DIRECTOR



**MR. ARUN KUMAR**  
INDEPENDENT DIRECTOR



**MR. DINESH KUMAR SARAOGI**  
WHOLETIME DIRECTOR



**MR. RAJEEV BHADURIA**  
WHOLETIME DIRECTOR



**MR. SHALIL MUKUND AWALE**  
NOMINEE DIRECTOR - IDBI BANK LTD.



Young employees getting trained on shop floor at Patratu, Jharkhand

The Board meets periodically to discuss and decide company/business policies and strategy apart from other regular business matters. Board Meetings are usually held at the Corporate Office of the company in New Delhi. 6 Board Meetings were held during financial year 2015-16.

## JSPL's Board Committees

1)	Audit Committee
2)	Nomination and Remuneration Committee
3)	Stakeholders Relationship Committee
4)	Health, Safety, Environment and CSR Committee (HSE-CSR)
5)	Governance and Business Ethics Committee
6)	Investment Committee
7)	Risk Management Committee
8)	Corporate Management Committee

JSPL has 8 Board Committees each of which play a vital role in strengthening corporate governance practices and focus on issues. They meet on a quarterly basis, review their specific mandate, and ensure expeditious resolution of matters. Committees at the Board level make recommendations to the Board on various matters when required. All observations, recommendations and decisions of the committees are placed before the Board for information or for approval.

Especially relevant to sustainability is the HSE-CSR Committee. This committee oversees the implementation of quality, occupational health, environment and CSR policies. It provides direction and monitors progress in those areas other than reviewing operational performance, safety and environmental risks and compliance to health, safety, and environment laws. The committee makes recommendations on CSR budgeting and spending and recommends activities in a given business context. It is chaired by an independent director and has one independent director and two executive directors. JSPL's Chief Executive Officer, Chief Sustainability Officer, and senior officers from different departments participate in this Committee. During the reporting period, the committee met 4 times.

## Snapshot of JSPL's ISO Certifications (As of March 31, 2016)

Location	ISO 9001	ISO 14001	OSHAS 18001	ISO 50001
Angul, Odisha, India	✓	✓	✓	Under process
Barbil, Odisha, India	✓	✓	✓	✓
DCPP, Chhattisgarh, India	✓	✓	✓	Under process
Sohar, Oman	✓	✓	✓	Under process
Patratu, JharWkhand, India	✓	✓	✓	Under process
Raigarh, Chhattisgarh, India	✓	✓	✓	Under process
Raipur, Chhattisgarh, India	✓	✓	✓	✓
Tamnar, Chhattisgarh, India	✓	✓	✓	✓
Tensa, Odisha, India	✓	✓	✓	Under process



MD & Group CEO, JSPL addressing the employees in Senior management committee at Sonapat

### 4.3 Risk Mitigation and Compliance Management

JSPL's Business Sustainability team created a 'Risk and Compliance Officers' team in 2015. These officers were recruited at each of JSPL's operating sites, and placed within the office of the Plant Head. These officers are responsible for identifying, reporting and, most importantly, mitigating risks at their sites. They are expected also to ensure 100% compliance with applicable rules, laws, legislations and guidelines and manage the "iComply" platform for their respective location(s).

Also a risk management policy was designed to promote stable business growth and a pro-active approach in reporting, evaluating and resolving risks associated with the business. It has three key objectives:

1. To encourage/improve informed business decisions keeping risks in mind and without exposing the Group to avoidable hazards
2. To enable coordinated identification, prioritisation and

management of risks without adding undue administrative burden

3. To enable compliance with appropriate regulations, wherever applicable, through the adoption of best practices. At JSPL an indicative list of 25 risks are reviewed constantly. This list would change depending on timelines for mitigation, but at all times they would reside in one of the following 5 buckets:

- i. Strategic and portfolio risks
- ii. Customer and operational risks
- iii. Finance and investment risks
- iv. Brand and reputation risks
- v. Regulatory and compliance related risks

JSPL's online compliance system iComply was strengthened during 2015-16. As part of this system, about 400 statutes and acts for the group have been catalogued. Each has been assigned to an 'owner' amongst JSPL employees whose responsibility is to ensure adherence under the supervision of an 'approver'. Automated monitoring and tracking of compliances ensures that nothing escapes notice and delays, if any, are met with appropriate escalation and timely closure. In addition, the reporting mechanism helps in tracking the percentage of

compliance achieved. JSPL's iComply reduces chances of human error and ignorance.

### 4.4 JSPL Partners with all Stakeholders

One of the major achievements for JSPL's sustainability department during FY 2015-16 has been to roll out a more structured way of stakeholder management. 15 key stakeholder types for the company were identified, appropriate employees within the company were made custodians for each stakeholder, and engagement plans were drawn out for various stakeholders depending upon a prioritization of needs.

An example of JSPL's achievements in building a more structured approach towards our stakeholders is the continuous review by JSPL's sustainability department of the company's membership to various industry associations. There is a constant check on engagement levels of the company with the industry associations, with a firm belief that we will not spread ourselves thin but instead we will build deep relationships with a few industry associations. Consequently JSPL has been able to trim the company's memberships to 19 industry associations in 2015, from 22 in 2014, and 41 in 2013. Engagements with these 19 industry associations are meaningful and collaborative. While JSPL's stakeholder engagement plan for different stakeholders has a varied and tailored approach, yet overall there are also common norms that run across the company's

relationship with all stakeholders. These norms in our stakeholder relationship are as follows:

- Treat Stakeholder as Partners
- Be transparent
- Keep stakeholders Involved throughout the Project Lifecycle
- Monitor Stakeholder Engagement from time to time
- Maintain an ongoing two-way dialog process always

Frequent meetings and visits through regular meeting, giving quality time and listening to the need and expectations, since inception of project and till date has been a regular affair. Be it the community or the suppliers/vendors, or customers we build a long term relationship. We analyse the mutual needs and expectations and also the limitations.

For example few activities showcasing the relationship with local communities around our plant include:

- Giving respect to the community needs/demands, activities are planned and executed through participation of Village Panchayat and committees.
- Reaching out to the households in their good and unhappy times such as attending marriages, bereavements, local festivals etc.
- Inviting the community members to special functions of the company such as Foundation day celebration, Vishwakarma Puja etc.
- Helping the community members to access the benefits of Govt. schemes such as Disability certificate, Aids and Appliances, Disability Pension, Trainings etc.



Chief Financial officer of the company engaging with analyst at Analyst meet organised by JSPL.

A snapshot of relationships with the company's key stakeholders can be represented in JSPL's stakeholder engagement framework below:

## JSPL's Stakeholder Engagement Framework

Stakeholder	Way of Communication	Achievements	Mode of Engagement
<b>Government and Regulatory Authorities</b>	<ul style="list-style-type: none"> <li>Representations on policy issues through industry associations</li> <li>Regular presentation and sharing</li> <li>Financial Transparency</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory compliances</li> <li>Strong Governance</li> <li>Tax Revenues</li> <li>Resource Efficiency</li> <li>Transparency in disclosures</li> <li>Community development</li> </ul>	<ul style="list-style-type: none"> <li>Letters to concerned institutions</li> <li>Meeting through Forums</li> </ul>
<b>Customers</b>	<ul style="list-style-type: none"> <li>Feedbacks</li> <li>Personal visits/ contacts</li> <li>One to one meetings</li> <li>Dealers meet</li> </ul>	<ul style="list-style-type: none"> <li>Goodwill / Credibility/ Reliability</li> <li>Product and service quality</li> <li>Timely delivery</li> <li>Pricing/ Brand building</li> </ul>	<ul style="list-style-type: none"> <li>Annual Customer Satisfaction Surveys</li> <li>One-on-One Meetings with customers.</li> <li>Exhibitions</li> <li>Dealer meets</li> <li>Key Account Management</li> </ul>
<b>Suppliers/ Vendors</b>	<ul style="list-style-type: none"> <li>Regular contacts</li> </ul>	<ul style="list-style-type: none"> <li>In time delivery/ competitive price</li> </ul>	<ul style="list-style-type: none"> <li>Annual Vendor Meet</li> <li>One to One Meetings</li> <li>Supplier Audits</li> </ul>
<b>Employees (A detailed approach is given the part "e" below)</b>	<ul style="list-style-type: none"> <li>Training/ Induction / Workshops</li> <li>E-learning modules/ Suggestion schemes</li> <li>Grievance Redressal system</li> </ul>	<ul style="list-style-type: none"> <li>Developing more</li> <li>Personal development</li> <li>Conflict resolution</li> </ul>	<ul style="list-style-type: none"> <li>Emails</li> <li>Interactions</li> <li>Employee Satisfaction Survey</li> </ul>
<b>Community</b>	<ul style="list-style-type: none"> <li>Community need assessment activities undertaken in collaboration with independent parties/ NGO's</li> <li>Formation and regular meetings of village institutions</li> <li>Public hearings</li> <li>Assessment of direct and indirect impacts of organizations social investments on communities</li> </ul>	<ul style="list-style-type: none"> <li>Community development programs based on the community need</li> <li>Strengthens livelihood opportunities</li> <li>Improvement of social infrastructure to healthy living environments</li> <li>Dignity of life through economic &amp; social empowerment</li> </ul>	<ul style="list-style-type: none"> <li>Need assessment surveys</li> <li>Field Visits,</li> <li>Pamphlets, Interactions / Workshops / Seminars etc.</li> <li>Impact assessment studies</li> </ul>
<b>Media</b>	<ul style="list-style-type: none"> <li>One to one media interactions</li> <li>Press releases/ press conference</li> <li>Advertisements / Promotions</li> <li>Media tour</li> <li>Online Publications</li> <li>Social Media</li> </ul>	<ul style="list-style-type: none"> <li>Transparency and appropriate disclosure to stakeholders</li> <li>Disseminating accolades to media / information sharing</li> <li>Brand building</li> <li>Site and Plant visit/ feedbacks/ success stories</li> <li>Responsible corporate citizenship</li> <li>Transparency</li> <li>Influence</li> <li>Measuring success</li> </ul>	<ul style="list-style-type: none"> <li>Press Releases</li> <li>Media Page on Company website</li> <li>Interviews and Press conferences</li> </ul>
<b>NGO's</b>	<ul style="list-style-type: none"> <li>Partnership with NGO's for implementation of CSR programs</li> <li>Discussions on community issues with NGO's</li> </ul>	<ul style="list-style-type: none"> <li>Financial support / aid from Govt. for community development</li> <li>Responsible corporate citizenship</li> </ul>	<ul style="list-style-type: none"> <li>Regular Interactions</li> </ul>
<b>Investors</b>	<ul style="list-style-type: none"> <li>Update them about recent development inside organization.</li> </ul>	<ul style="list-style-type: none"> <li>Daily basis along with quarterly updates to all investors,</li> </ul>	<ul style="list-style-type: none"> <li>One-on-One</li> <li>Investor Conferences</li> <li>Roadshows</li> <li>Interactions Wwith analysts</li> <li>Dedicated E-Mail ID</li> <li>Dedicated Investor Page on Company website</li> </ul>
<b>Industry Associations</b>	<ul style="list-style-type: none"> <li>Public Platforms/ Interactions</li> </ul>	<ul style="list-style-type: none"> <li>Voice concerns, support like-minded community, access resources, industry information and education opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>Public Platforms/ Interactions</li> </ul>



## JSPL's Membership to Industry Associations

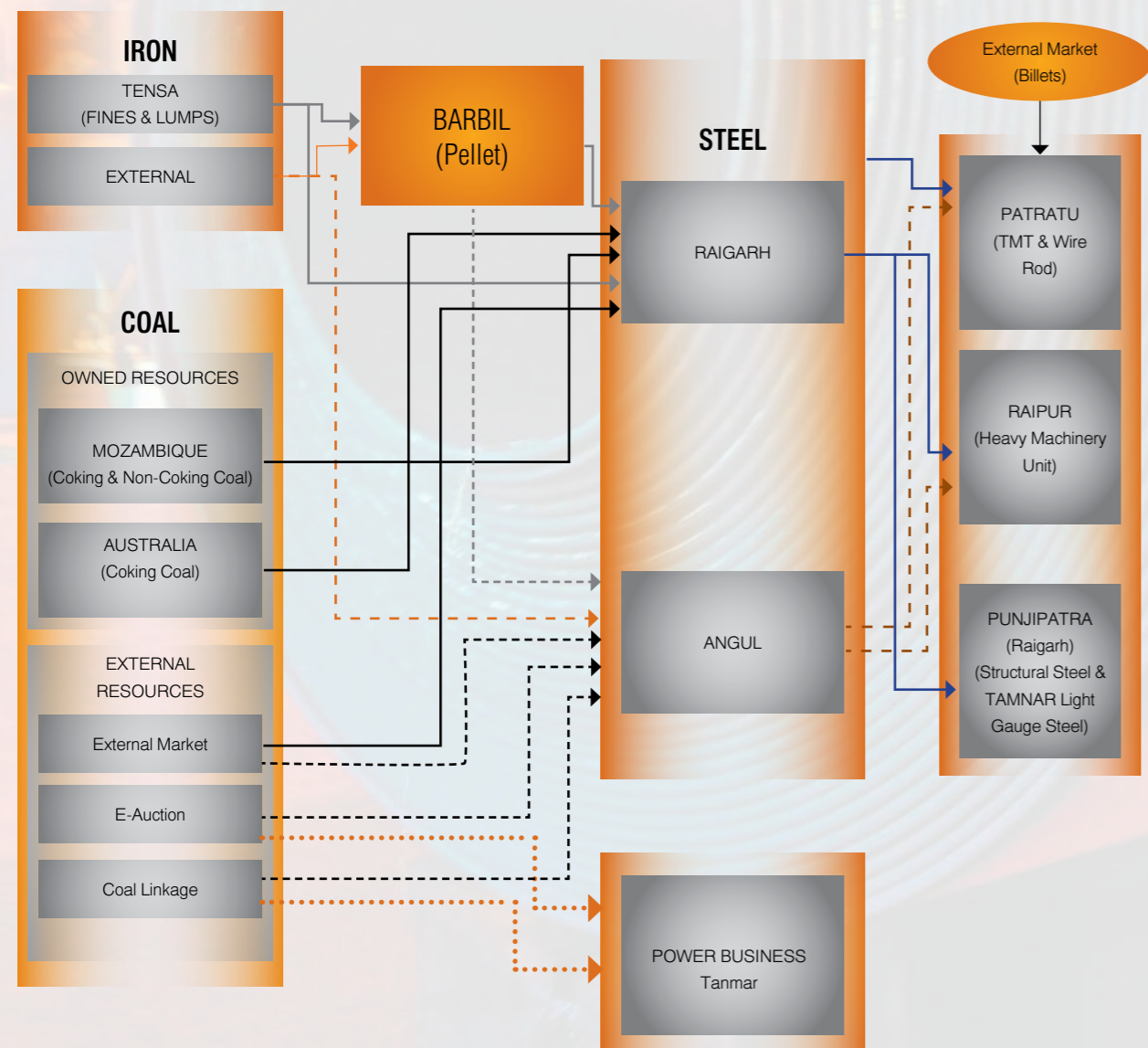
S.No.	Name of Organization
1	Association for Iron and Steel Technology (AIST) – India Member Chapter
2	All India Management Association
3	Alloy Steel Producers Association of India
4	Associated Chambers of Commerce of India (ASSOCHAM)
5	Association of Power Producers
6	BRICS Chamber
7	Confederation of Indian Industries (CII)
8	Coal Consumers' Association of India.
9	Coal Producers Association
10	Federation of Indian Chambers of Commerce and Industry
11	Federation of Indian Mineral Industries
12	Indian Iron and Steel Sector Skill Council
13	Indian Steel Association
14	Sponge Iron Manufacturers Association (SIMA)
15	Steel Research and Technology Mission of India
16	Global Compact Network India
17	United Nations Global Compact
18	World Economic Forum
19	World Steel Association



# 5.0

## JSPL's Sustainable Production Process

### JSPL's Business Model for Raw Material Procurement FY 2015-16



### JSPL's Raw Material Consumption FY 2015-16

Material	Consumption (in MT)	Material	Consumption (in MT)
LIMESTONE	1071484	Bentonite	22902
DOLOMITE	504936	Clinker	223195
IRON ORE	7631865	Gypsum	22271
HBI	2380		

Wire Rod stacking at JSPL, Patratu

### JSPL's Product Volumes

Product (in MT)	Unit of Measurement	FY 2015-16
FINISHED STEEL PRODUCTS*	Tonnes	2510000
SEMI-STEEL PRODUCTS**	Tonnes	4542000
PELLETS	Tonnes	4589000
POWER***	Million kWh	16411
CASTING (RAIPUR)	Tonnes	1,931
MACHINING (RAIPUR)	Tonnes	14,088
IRON ORE MINED (TENZA)	Tonnes	622000

\*Indian Operations    \*\*Indian & Oman Operations    \*\*\* JSPL and JPL

## 5.1 Business Re-organization

On December 16, 2015, JSPL re-organized its business into 18 Strategic Business Units (SBUs) to improve efficiency, strengthen plural leadership, institutionalise a culture of responsibility and accountability, and promote a flat structure for business management.

The 18 SBUs belong to 5 business clusters, and the head of these clusters are also part of the Group Executive Committee (GEC) that is responsible for deciding upon Strategic and Operational direction of JSPL Group. Each SBU has its own business council which would periodically review the business performance and also initiate measures to redress the problems faced by the concerned SBUs. Typically, the SBU council would have Heads of Segment, Location, SBU, Production and Financial Controller as its members. SBUs have been given full responsibility for the profit & loss (P&L), New product development and strategic planning of their respective businesses.

The 18 SBUs within the 5 business clusters are as follows:-

1. Iron and Steel (Semi)
2. Plate and Coils
3. RUBM & MLSM
4. TMT, Cut & Bend, Welded Mesh
5. Wire Rod
6. Fabricated Structures
7. Machinery Division
8. Power Generations & Trading (IPP + CPP)
9. Hydro & Renewables
10. Overseas Venture
11. Coal
12. Non – Coal
13. Pellet Plants
14. Construction Material
15. Construction Solution
16. Australia + Indonesia
17. South Africa, Botswana & Mozambique
18. Oman

## 5.2 Process Efficiency by Theory of Constraints

JSPL's business process efficiency turnaround during 2015-16 was anchored in the Theory of Constraints (ToC). ToC focuses on identifying, focusing, and improving a few parts in the production process that are assessed as not adequately performing at the desired levels. The TOC is a thinking process that enables people to invent simple solutions to complex problems. It consists of five steps:

**1. Identify the system's constraint** Identify the operation that is limiting the productivity of the system. This may be a physical or policy constraint

### 2. Decide how to leverage the system's constraints

Exploit the constraint to achieve the best possible outcome from the constraint. Remove limitations that limit/check the flow, and reduce non-productive time, so that the constraint is used in the most effective way possible.

### 3. Subordinate/synchronize everything else to the above decision.

Subordinate other activities to the constraint: link the output of other operations to suit the constraint. Smooth work flow and avoid build-up of work-in process inventory. Avoid making the constraint wait for work

**4. Elevate the system's constraint** In situations where the system constraint still does not have sufficient output invest in new equipment or increase staff numbers to increase output

**5. If in the previous steps a constraint has been broken then goes back to Step 1** If anything has changed in the previous steps or a constraint has been broken, go back to step one i.e. Assess to see if another operation or policy has become

the system constraint.

All through FY 2015-16 at JSPL, the roll out of ToC was implemented via several consultations, workshops, and projects on site and at the corporate level. The plans enabled each part of the company's operations to know not only what it must start doing to increase efficiency of the whole organization, but also what each part must stop doing that is not contributing to efficiency. JSPL's objective in deploying the management philosophy of Theory of Constraints (TOC) was to achieve a quantum jump in performance efficiency, increase gross contribution, and improve working capital.

A dedicated 'Theory of Constraints' teams were established on plant sites. These teams had the mandate to conduct a data backed study of where the weakest link in the production efficiency on their site operations lies, then propose a solution to improve efficiency of that link. The two teams would increase sales through:

- Identification of a decisive competitive edge for each

customer segment

- Build the operations to deliver the competitive edge
- Build sale processes to capitalize on the competitive edge built
- Alongside increase output of the plants while decreasing inventory and receivable

Several consultative workshops were organized on the Theory of Constraints across the company, so as to procure the buy-in from every one towards the specific steps required to implement change. Key management personnel were also to be provided with the book Eliyahu M. Goldratt, The Goal: A Process of Ongoing Improvement. The company's management was of the view that people only resist change when they do not see the value in the change for their own selves. The consultative workshops were therefore crucial to communicate to employees that the changes will be a win for all stakeholders, so as to plan together and turn any resistance to enthusiastic change.





New oxygen furnace at Raigarh, Chhattisgarh

The results of this yearlong exercise provided solutions for different sectors at JSPL. The solutions can be summarised as follows:

**a) TMT**

- Competitive edge was developed to provide distributors a Return on Investment (ROI) of at least double the industry norm.
- Capitalize on it to motivate distributors to increase retailers in the market.
- Deploy a long term Loyalty Program with market influencers such as Masons and Contractors to increase market pull.

**b) Wire rods**

- Competitive edge was developed that guaranteed daily availability from stock yards to customers, so that they can operate with much less raw material inventory than with other suppliers.

**c) MLSM**

- A planning tool was developed and implemented to reduce

idle and set up time.

**d) RUBM**

- The current process was evaluated to reduce cycle time and opportunity areas were identified for increasing output by 50%. New processes would bring down the cycle time from 111 minutes to 71 minutes. In other words, the production would go up from 13 units to 20 units a day.
- The time taken for the process from Welding to USFD was analysed, and the variations around the processing times, primary causes of variations and inter-dependencies of various operations (what can run in parallel and which ones are completely sequential) were studied. A simulator was developed to illustrate the whole process..

**e) Structural Steel Division Punjipatra**

- A prioritization plan of projects and execution was set up, along with allocation of maximum constrained resources starting with top priority project.
- A system of controlled release of Drawings & RM was established, and DUs that were work in progress for more

than 30 days were monitored.

- A Dynamic Buffer management (DBM) was deployed to reduce inventory and increase availability receivables.

**f) Machinery Division Raipur**

- Inventory management was improved.
- On Time In Full delivery of products was improved with drastic reduction in production lead times.
- Operational expense was reduced.
- The product portfolio was developed with a strong external order focus

### 5.3 Energy Efficiency

The company strongly believes in the principle that improving material and energy efficiency will result in increasing sustenance of the products in the market for a longer period of time and also improve market penetration.

A report of the World Steel Association in 2015 confirmed that market conditions for the steel industry will continue to be difficult for a long time to come. Given this scenario, JSPL stepped up its

search in 2015 for technological advancements of its production processes so as to improve energy efficiency and competitiveness of its products. Accordingly, for this purpose JSPL identified a technology called Flexi Modular Furnace in collaboration with Tenova Group, Italy.

This technology is being developed especially for JSPL and will be used by JSPL for the first time in the world.

The creation and implementation of this technology took 6 months to complete. The Flexi Modular Furnace technology (NOF) retrofits JSPL's existing Electric Arc Furnace (EAF). It uses a charge mix of hot metal and sponge iron in the ratio of 85:15. It has hydraulically operated PLC controlled tilters for controlled but continuous hot metal feeding into the furnace along with 4 supersonic oxygen lances of capacity 3000 m3/hr mounted on the side walls of the furnace.

Commissioning of the modification has helped JSPL in reducing its Energy foot print across the production chain by 0.151 Gcal/tcs as compared to the energy footprint without NOF.

Also manufacturing cost of the product has been reduced by 6-7% (Approx.). In addition to these benefits, there are few other benefits which are related to lesser hazardous waste generation including SMS Slag, Refractory lining; lesser flux usage.

Three of JSPL's plants i.e. Raigarh, JPL- Tamnar, Nalwa Steel have been classified as Designated Consumers by Bureau of Energy Efficiency (Government of India, Ministry of Power). In the last cycle of Perform, Achieve and Trade Scheme these 3 plants have been recommended by Bureau of Energy Efficiency for issuance of 62903 E-Certs for achieving better energy efficiency in our production process as compared to notified target for us in PAT cycle 1.

Some examples of measures that were implemented to improve production efficiency during FY2015-16 are as follows:

- a)** Modification of Electric Arc Furnace (EAF) to New Oxygen Furnace (NOF) at Raigarh which reduced power consumption by EAF to zero.
- b)** Impeller trimming of pumps like cooling water pump, Make up water pump, DMCW pumps, Compressed air station cooling water pumps at Angul. In total impeller of 23 pumps have been trimmed which resulted in saving of 633 KW power consumption at Angul.
- c)** Equipment operation rationalisation exercise taken up at Angul which resulted in stoppage of 3 Pumps, 2 Fans and 1 Compressor which resulted in saving of 859.5 KW power consumption at Angul. Though this exercise is still in progress for identification of avenues where we can stop the equipment.
- d)** Replacement of cooling tower fans in Power plant at Raigarh with Energy Efficient Fans.
- e)** Suction Duct modification for 7 FD Fans in Power plant at Raigarh



Green belt - Integrated steel plant, Raigarh, Chhattisgarh

## 5.4 Environment Management

JSPL has developed Environment Management Divisions at every location. The division comprises of trained and experienced technical staffs which manage the environment related aspects of JSPL's units and projects. JSPL's initiatives to minimize environmental impacts of products, manufacturing, and operations are governed by its Environmental Policy. All production units of the company in India are ISO: 14001 certified. The company consumes raw materials such as coal, iron

ore, oils in manufacturing of Power & Steel. The company understands the materiality of these materials for its business as well as stakeholders therefore undertakes a continuous drive for improving its consumption efficiency. Effluent, waste, water & emissions are regulated as per guidelines of Ministry of Environment, Forest & Climate Change (MoEF & CC), Central Pollution Control Board, State Pollution Control Board. The performance against targets is evaluated periodically and future actions are planned. The management reviews parameters related to every month/week in the Business Review Meetings along with other business parameters.



Clarifier at Raigarh, Chhattisgarh

#### 5.4.1 Air

Most significant emissions to air besides CO<sub>2</sub> are particulate matter (including fine particulates such as PM<sub>10</sub>), sulphur dioxide (SO<sub>2</sub>) and oxides of nitrogen (NO<sub>x</sub>). Continuous measurement and modelling around our steelmaking facilities helps us to understand our contribution to airborne levels of these pollutants.

#### Key initiatives for monitoring, controlling and mitigation of air pollution:

1. Installed new bag filter at Lime kiln and SMS III at Raigarh Steel Plant
2. Installed two bag filters at Coal Crusher, Tamnar
3. Installed Continuous Stack Emission Monitoring Systems at steel plants of Raigarh and Angul; and connectivity with the Central Pollution Control Board and respective State Pollution Control Board servers for the transmission of real-time monitored data
4. Planted 87,700 saplings in the vicinity of the Company's

operating region in FY 2015-16

5. Conducted environment awareness programmes across all locations on the occasions of World Environment Day and the National Pollution Prevention Day, by distributing saplings to nearby villagers and driving them for plantation activities. At the company level (JSPL and JPL) during FY 2015-16, JSPL group's GHG Scope 1 emissions for the year are estimated at 26215 thousand tonnes of CO<sub>2</sub> and Scope 2 emissions at 366.30 thousand tonnes of CO<sub>2</sub>. GHG Scope 1 emissions for JPL, Tamnar operations specifically are 8973.91 thousand tonnes of CO<sub>2</sub>.

#### 5.4.2 Water

JSPL attempts to reuse and recycle water in a variety of ways like scrubbing of flue gases, slag granulation, slag cooling, dust suppression and horticulture. It is reused in rolling mills too (after oil is skimmed out). The company adopts concept of zero

discharge for effluents. Rainwater harvesting structures have been constructed for ground water recharge across all units. Also, surplus rainwater collected in open pits, is used as make up water.

#### Key initiatives towards Environment Management in FY 2015-16:

1. Installed a Tertiary Effluent Treatment Plant of capacity 350 m<sup>3</sup>/hr at Coal Gasification Plant, Angul to further treat the effluent from the Bio-ETP of CGP to the quality of DM water, reducing the plant's fresh water demand
2. Installed a waste water quality analyser at ETP and connected with CPCB at the captive power plant, Dongamahua, Chhattisgarh
3. Installed a 200 KLD sewage treatment plant at Tensa, Odisha
4. Provided proper drainage system with check dams at backfilled areas in iron ore mines at Tensa
5. Built nine rainwater harvesting structure for the catchment area of Jindal Township, which directly contributes towards the ground water recharging, at Angul
6. Commissioned 150 KLD New Sewage Treatment Plant near JIPT at the power plant, Tamnar
7. Installed 2000 KLD New Sewage Treatment Plant at Savitri Nagar, Tamnar

8. Installed Effluent Quality Monitoring System (EQMS) at Tamnar Power Plant; online data transmitted to CPCB Delhi server as well as CECB server.

Our priority is to remain fully compliant with the conditions of our environmental permits and with any other legal requirements. We aim to minimise our environmental impact wherever practicable and cost-effective, to do so a substantial proportion of our capital investment in recent years has been on initiatives to improve our energy efficiency and reduce our emissions of carbon dioxide or achieve other environmental benefits. For managing the emissions through operations, we have installed air emission protection equipment such as Electrostatic Precipitator (ESP), scrubber systems, cyclones, bag-houses, and waste heat recovery systems. JSPL has also invested in setting up modern environmental laboratories equipped with sophisticated instruments at most of their production units for conducting quality assessment of environmental parameters (air quality, water quality, noise etc.) as well as emissions and discharges (stack emissions and effluents). Standard Operating Procedures (SOP's) are in practice as part of the ISO 14000 benchmarks. These ensure monitoring of energy consumption & conservation, waste generation and disposal, air & GHG emission, as well as noise.



Water treatment Plant, Raigarh, Chhattisgarh

### 5.4.3 Waste

At the first United Nations Earth Summit in 1992, environmentally sound management of wastes was identified as one of the major concerns in maintaining the quality of the Earth's environment. At the World Summit on Sustainable Development in 2002, governments reaffirmed the importance of solid-waste management. They called for priority attention to be given to prevention, minimization, reuse and recycling of waste. A sustainable future for the human race must include the effective reuse and recycling of waste streams. The concept of waste as a resource is not new to the modern world. Since the dawn of civilization, the recycling or reuse of originally discarded materials has been practised.

During FY 2015-16, Hazardous waste was produced in the form of used oil, used oil filters, oil contaminated cotton, oily sludge and PGP TAR and sludge were produced. All these wastes were either reused internally or sent to authorized recyclers. The quantity of this wastes generated during the year, includes 181.22 Kl of used oil, 438 numbers of used oil filters, 500 kgs of used hose pipes, 3399.9 tonnes of ETP sludge/PGP tar and 3880 Kgs of oil contaminated cotton. A small amount of wastes is also stored at sites within the permissible limits. Besides, there was 71.54 tonnes of batteries, 30.52 tonnes of bio-medical waste were generated, and 16.020 tonnes of e waste from Indian operations was disposed during the year. These wastes were disposed off as per respective applicable regulations.

Solid waste management in the steel industry is aimed to extract the maximum practical benefits from waste products and to generate the minimum amount of waste to preserve our planet. To achieve this goal "4Rs" i.e. reduce, reuse, recycle and restoring the materials are being considered as strategies of solid waste management. Proper reuse and recycling the entire solid waste generated in steel manufacturing process can meet the demand of a potential resource for fulfilling growing shortages of energy and materials.

In view of rising input costs, scarcity of raw materials solid waste management has gained importance in steel industry. Reusing and recycling products avoids or reduces waste and saves primary resources. By using materials that have a greater potential for reuse and recycling, it is more likely that the value of these products at their

end-of-life will be realized in future applications.

The benefits of recycling are well understood and include:

- Reducing waste, i.e. diverting waste from landfill
- Saving primary resources, i.e. substituting primary production
- Saving energy and associated greenhouse gas emissions through less energy intensive reprocessing.

The major non-hazardous waste generated from JSPL's Indian operation includes tailing produced during the extraction and beneficiation processes, slag & sludge during mineral processing, ash from power plants. JSPL has been successful in recycling or reusing over 85.44% of the non-hazardous waste generated.

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Huge investments have been made at JSPL for managing solid waste generated out of the production process. Few such examples are setting up of sinter plant at Raigarh for agglomeration of all fines and usable wastes, Setting up of brick plant at Raigarh, Angul and Patratu for utilizing fly ash and slag. Recently company has commissioned a Light Weight Aggregate Plant at Angul, Slag Atomisation Plant (SAP) and slag crusher plant at Raigarh.

#### Bio-degradable Waste

- Bio Gas generation plants installed at Tamnar, Barbil and Raigarh. A Paper recycling unit has also been installed at Angul plant.

## 5.5 Achieving Operational Excellence

JSPL is on the path of developing leaner and cost-optimized operations. This is significant as the company's business operations are spread across four continents, Asia, Middle-East, Africa and Australia. The company leverages technology wherever possible in its processes to reduce costs and increase



Aerial shot of JSPL's cement plant, Raigarh

## Report Card of JSPL's Waste Management Performance

Non Hazardous waste material	Unit of Measurement	Generation	Utilization	Utilisation Percentage (%)
Slag	Tonnes	219898	219898	100
Internal scrap	Tonnes	37108.27	38121.57	103
Fly Ash	Tonnes	5145261.664	3113185.95	61
Bottom Ash	Tonnes	610104.916	610104.916	100
Clear Tar	Tonnes	16831.23	19835.2	118
Gasification oil	Tonnes	10705.77	11965.09	112
Sulphur	Tonnes	542.47	150.62	28
Liquid Ammonia	Tonnes	6336.57	6894.38	109
Crude Phenol	Tonnes	2394.45	2483.08	104
Benzol	Tonnes	4696.435	5596.32	119
Phenolic Pitch	Tonnes	309.979	295.5	95
Municipal Solid Waste	Tonnes	618	325.175	53
Over Burden	Tonnes	6313670.72	6313670.72	100
Scales	Tonnes	12879.42	17054.17	132
Knock out Sand	Tonnes	2285	2285	100
Electrode Flux	Tonnes	1990	1990	100
Char (DRI)	Tonnes	210276	210276	100
Bag filter Dust (DRI)	Tonnes	87262	18727	21
Accretion (DRI)	Tonnes	30663	9074	30
ABC Dust (DRI)	Tonnes	20693	7124	34
Slag (SAF)	Tonnes	37999	38279	101
Bag Filter dust (SAF)	Tonnes	3253	0	0
Slag (Blast Furnace)	Tonnes	935412	935412	100
Dust Catcher Dust (Blast Furnace)	Tonnes	13745	11809	86
Dust from GCP (Blast Furnace)	Tonnes	10969	3095	28
Stock House dust (Blast Furnace)	Tonnes	3814	60	2
SMS Slag	Tonnes	984608	984608	100
EAF/LRF BF Dust	Tonnes	26074	11483	44
SMS Caster Scales	Tonnes	6635	6635	100
PGP Ash	Tonnes	59458	59458	100
Mill Scale	Tonnes	23286	23286	100

efficiency. For example, tele-presence facilities, which were launched last financial year, have been scaled up to include Delhi, Gurgaon, Raigarh, Angul, Tamnar, Patratu and Barbil. This

has helped JSPL drastically cut business travel costs, enhance employee productivity and curtail carbon footprint. Energy managers have been appointed across all locations in India. The

## Details of Solid Waste Management at JSPL

Sl. No.	Name of the unit	Type of solid waste generated	Method of collection	Method of disposal
1	Power Plant/ Process Boiler	Fly Ash	Collected pneumatically in ash silos	Used in Brick Making, Light weight aggregates, Cement Making, backfilling mine voids, filling of low lying areas and unutilized is disposed in Ash Pond through High Concentration Slurry Disposal (HCSD) System.
2	Coal Gasification Plant (CGP)	Sludge	Collected in specially designed Containers	Disposed to Treatment, Storage, and Disposal Facilities (TSDF).
		Ash	Collected in ash silos	Disposed to Ash pond
3	Steel Melting Shop) SMS	Electric Arc Furnace (EAF) Slag	Collected in designated slag pot	Used in slag processing unit for making granules.
		Ladle Arc Furnace (LAF) Slag	Collected in designated slag pot	Used in slag processing unit for making granules.
		Combustion chamber dust		Used in Sinter making
		Bag filter dust	-	Used in Sinter making
4	Direct Reduced Iron(DRI)	Iron ore & DRI fines	stored in storage yard	Used in sinter & Pellet Plant
		Char	Stored in storage yard	Used in Captive Power Plant (CPP) & rest are sold
		Bag filter dust	Silo	Used in sinter Making
		Accretion	Silo	Used in SAF
		ABC Dust	Silo	Used in sinter Making
5	Blast Furnace	Slag	Storage Yard	Used in cement manufacturing
		Dust catcher's dust	-	Used in Sinter making
		Slurry from ETP	-	Used in Sinter Making
		Stock house Dust	-	Used in Sinter Making
		Cast house Dust	-	Used in Sinter Making
		Dust from GCP	-	Used in Sinter Making

managers work towards improving efficiencies and reducing the specific energy consumption of plants.

Among the steps for energy conservation were:

### Tamnar

1. The application of Energy Efficiency Coating on Hydraulic path of three (03) Circulating Water Pumps was carried out. The application of Energy efficient coating resulted in total saving of 408 MWh (0.408 MU)
2. In Ash Handling Plant, throttling loss has been reduced by trimming of Guard Pond Pump Impeller. This modification has brought an annual savings of 56.00 MWH (0.056 MU).
3. DM Make-up pump running hours has been optimised by giving start logic modification & Hotwell make up through gravity. This modification has resulted in saving of 17.32 MWH (0.017 MU).
4. Installation of VFD in Potable water Pump .The savings from VFD Installation is 81.62 MWH (0.082 MU)
5. In many areas of the plant premises, previously installed conventional light were replaced with 2500 Nos. LED Bulbs. These modifications have brought up a saving of 1119.60 MWh (1.12 MU)
6. GRP Fan blades of 15 cells of Induced Draft Cooling Tower

were replaced with FRP blades. The savings from CT Fan Blade modification is 809 MWH (0.809MU).

7. 19,715 MWH (19.72 MUs) power was saved by proper implementation and monitoring of modifications and improvements which were carried out in the previous financial year like stopping one out of four CW Pumps per phase, which was prevalent for major part of the entire year.
8. Units generated from installed Solar PV panel - 25041.90 kWh (0.025 MU).
9. Auxiliary energy consumption of plant has been reduced by 21.38 MUs during the year under report.

### Raigarh

1. Modification of FD fan suction duct for remaining 7 fans in 2x25 MW power plant. Electrical power saving of 361152 kWh/year
2. Modification of EAF-1 to new oxygen furnace (NOF). Energy Saving :0.15 GCal/TCS
3. Replacement of conventional C.T. fan of 2x25 MW power plant by Energy efficient fan. Energy Saving: 48312 kWh/year
4. Installation of LV VF drives in AFBC -3 ID fans of PP-2. Energy Saving:744000 kWh/Year
5. Installation of Timer for total 588 nos. 400W Shed & Flood Lights in Eight Different Bays in MLSM. Energy Saving:744000



- kWh/Year Furnace Charging Hydraulic Automatic Pump Stoppage in MLSM. Energy Saving:74160 kWh/Year
6. Automatic Start/Stop of Dilution Fan in MLSM. Energy Saving: 32400 kWh/Year

### Angul

1. Electrical power saving of 2,715 MWh/year is achieved by keeping one additional pump out of operation
2. Trimming down of make-up water pump. Electric power saving of 1,200MWh/year is achieved.
3. Modification of Primary Cooling Circuit Pump – P2& P3 (510& 125 kW) at SMS has been implemented effectively on all 6 pumps. Electrical power saving of 2142MWh/year
4. Power Plant & Steel Plant have separate Raw Water Pumps (315 & 180 kW) : As per present condition, only power plant RW Pump has been kept in operation (meeting the requirement of both the plants) with lesser power consumption (from 285 to 230 kW) due to reduction in line pressure by taking a branch and valves installation in interconnected lines resulting power saving of 945MWh/year
5. Modification of Power Plant & Process Boiler DMCW Pump (110 & 30 kW) by trimmed-down the impellers resulting power saving of 1255 MWh/year
6. Process Boiler Compressor (2x132 kW): As centralized Compressors (3x1700 kW) runs continuously to fulfill the requirements of entire Plant and requirement of Process Boiler is considerably less,hence a branch line from main supply header has been taken and operation of less efficient Compressors at Process Boiler is stopped. Power saving of 1256 MWh/year is achieved by keeping spare of the Compressors.
7. 1-Stage impeller removed out of 6, from condensate extraction pump (315 kW) in power plant for optimization of supply pressure. Modification is effectively implemented in all the pumps. Power saving of 1008MWh/year is achieved by the modification.

8. RMHS Compressor (450 kW): As centralized Compressors run continuously for entire Plant, so a branch line has been taken from main supply header and operation of the compressor is stopped. Power saving of 1360 MWh/ year is achieved by keeping spare of the compressor.

9. Intake Water Pump House (6 x 2.2 MW): As per original design, power consumption of motors was higher than the rated capacity, so trimmed-down the Impellers for optimal operation of pumps. Power saving of 588 MWh/ year is achieved by the modification.
10. Compressed Air Station-1: CT Pumps (75 kW) were running in throttled valve condition. Hence, trimmed down the impeller to run pumps in full valve condition and increase flow. Effectively implemented in two pumps. Electrical power saving of 571MWh/ year is achieved by the pump modification.
11. Replacement of cooling tower fan (4 no's) with energy efficient FRP blades in power plant resulted power saving of 724.9 MWh/ year.

### Barbil

1. Reduction of contract demand from 50 MW to 15 MW with OPTCL/NESCO resulting into saving of ` 78,00,000/- per month.

### Patratu

1. Energy management system has been implemented by installing KWH meters to reduce the unnecessary end usage of electricity.  
Average per day KWH consumption before implementation **10724 kWh**  
Average per day KWH consumption after implementation **6415 kWh**
2. 3000 no's of 36w tube light had been replaced by 9w LED Lamp

### System Improvement & Process Optimization

#### Raigarh

1. Long Rail Welding facility at RUBM which is now welding 3 nos. of 87 Mtr Rails into 260 Mtr panels. JSPL has now started dispatch of 260m long rails to DFCC.
2. Upgradation of Plate Mill for improvement in productivity and quality of plates and coils. The upgraded mill was commissioned on 12th Jan'16.

#### New Projects taken up

3. Head hardened rails for high speed applications and Metro rails as well as for exports (This project has been commissioned in the month of April 2016).
4. Installation of new reheating furnace in Rail and Universal Beam Mill to increase throughput and 100% utilization of BF Gas. The Project is under progress.

#### Angul

1. Islanding (House Load Operation) Scheme implemented in 2 Units of 6 X 135 MW Captive Power Plant resulted minimisation of blackout, production loss & disturbances.
2. Oxygen Plant: a) By re-configuring the production parameters, Gaseous Nitrogen Production increased to 140% of the rated capacity at same power consumption. Electrical power saving of 2500 MWh/month is achieved for additional nitrogen production. b) By reducing the pressure (by 35 kg/cm<sup>2</sup> to 20 kg/cm<sup>2</sup>) of liquid oxygen back up stand by pump, electrical power saving of 1240 MWh/year is achieved including saving from boil off loss.
3. Studied and optimized fuel (Propane) consumption by reorganizing operation timing of torch cutting machines in Billet Caster at SMS. Propane saving of 100 Ton/year is achieved by reduction in operation timing.
4. Utilization of condensate, generated after heat recovery at DRI, in dearator of process boiler. Reduction in DM water consumption by 1500 Ton/day and electrical power saving 462

MWh/year is achieved.

5. Utilization of unutilized LP steam in the place of electrical vaporizer for supply of propane at storage area of Central Utility resulted power saving of 122MWh/year.
6. Solar Daylight installed in ED-Office to utilized renewable (solar) energy to light-up office for 8 – 10 hrs per day during day time to save electrical power.
7. Optimization in Ferro-alloy consumption in Steel melting shop.
8. Increasing Plate mill utilization by adapting 3 and 4 batch rolling.
9. Optimization of Lime and Deoxidizer consumption and implementing best technological Practices

#### Barbil

1. APFC (Automatic Power Factor Correction) has been installed at Pellet Plant 2 for the improvement of power factor hence reduction of power loss.
2. LED lights installed at Executive Hostel and other areas of colony to save energy
3. Monitoring of individual area wise and building wise energy consumption for effective energy conservation

#### Patratu

1. Transparent sheets are being used as ceiling at BRM and WRM to utilize day light.
2. Capacitor banks are being used at BRM and WRM to increase the power factor for minimizing the energy wastage.

#### Raipur

1. Steel Melting carried out during night shifts since power consumption rates are less during the night.
2. Replacement of sodium vapour lamps with LED lights in residential areas.
3. Third Party Energy Audit carried out to ensure all systems put in place for energy conservations are duly effective and functional.



Slab casting at JSPL's Integrated steel plant, Angul

## JSPL's Energy Consumption for FY 2015-16

Indian operations		FY 2015-16
<b>TOTAL COKING COAL</b>	Quantity (tonnes)	1,135,046.74
	Energy (TJ)	30,806.07
<b>TOTAL NON-COKING COAL</b>	Quantity (tonnes)	16650381.48
	Energy (TJ)	217416.84
<b>TOTAL COKE</b>	Quantity (tonnes)	242136
	Energy (TJ)	6139.56
<b>TOTAL FO / HSD / LDO</b>	Quantity (KL)	170834
	Energy (TJ)	6814.53
<b>OTHERS</b>	Quantity (MT)	6910.33
	Scope 1 Total (TJ)	264614.42

### 5.6 Managing JSPL's Internal Social Footprint

JSPL is a truly diverse organization with operations in three continents, bringing together employees from diverse cultures and nationalities. It aims to create an environment of mutual trust and collaboration by implementing systems that bring in the right talent, deepen employee engagement and increase employee utilisation and productivity.

A few years ago, JSPL defined the company's core values as POSSIBL:

- P: People passion,
- O: Ownership,
- S: Sense of belonging,
- S: Sustainability,
- I: Integrity,
- B: Business excellence
- L: Loyalty.

HR policies are in place for the smooth functioning of people processes and procedures in areas like recruitment, leave, succession planning, career development, rewards and recognition, learning and development, medical and accidental benefits, employee separation, retirement benefits, travel, welfare and recreation.

3.33% of JSPL's workforce at the Group level is currently women. JSPL's efforts are not just to increase the number of women employees at JSPL, but also to ensure men and women at JSPL both get equal access to leadership and resources, opportunities to leadership positions, that there is no wage disparity whatsoever, and that the aspirations of men and women at JSPL match their exact roles in the organization. There is also an emphasis on preserving each men and women employees' individual

authenticity within the organization.

JSPL is retaining its women employees by providing a flexible, comfortable and secure work environment. Some of our key strategic employees, such as President Finance, and Chief Sustainability Officer, are women. JSPL is also increasing the visibility of these women leaders who are role models for other women in the company. There is a committee on internal complaints related to sexual harassment, and workshops on prevention of sexual harassment at the workplace are regularly conducted.

In FY 2015-16, 20.8% of JSPL's employees in India and 21.57% of JSPL's employees in Oman were below the age of 30. Almost 41.5% of JSPL group's new recruits in FY 2015-16 were also below 30. JSPL is a young company, led by its Chairman Mr Naveen Jindal who himself is one of India's youngest business leaders and is part of the community of Young Global Leaders of the World Economic Forum.





## Workforce break-up by type (as on March 31, 2016)

Country	CG Level	Supervisory Level	Workers (Permanent)	Trainees	Retainer	Allied	Contractual	Total	Specially Abled
India	4521	2097	1358	54	53	5374	16491	29948	7
Oman	288	159	275	13	2	0	242	979	0
South Africa	42	20	151	3	3	-	-	219	1

## Permanent Employee break up by gender (as on March 31, 2016)

Country	Male	Female	Total
India	7805	278	8083
Oman	721	16	737
South Africa	182	37	219
Total	8708	331	9039

## Permanent Employee break up by age (as on March 31, 2016)

Country	Less than 30	Between 30 to 50	Greater than 50	Total
India	1683	5,765	635	8083
Oman	159	538	40	737
South Africa	45	154	20	219
Total	1887	6457	695	9039

## New joiner break-up by gender and age (2015-16)

Country	Male	Female	<30	30-50	>50	Total
India	180	25	103	82	20	205
Oman	129	1	42	80	8	130
South Africa	24	4	6	19	3	28
Total	333	30	151	181	31	363



## Attrition break-up by gender and age (2015-16)

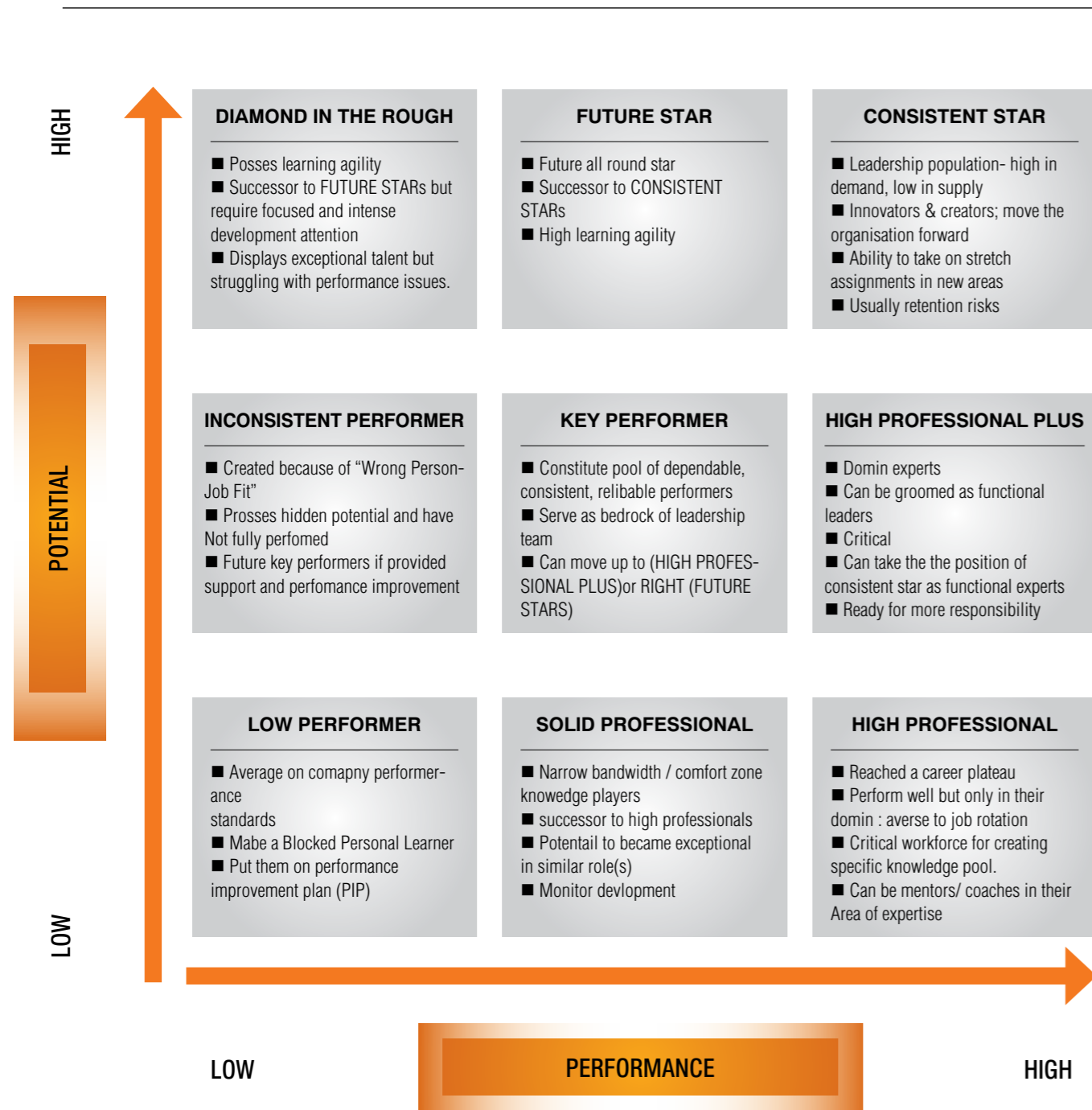
Country	Male	Female	<30	30-50	>50	Total
India	945	79	293	577	154	1024
Oman	35	2	15	16	6	37
South Africa	35	5	9	24	7	40
Total	1015	86	317	617	167	1101

Asubsequentfocushasalsobeen to ensure mentorship and support to the young employees of JSPL. The MD & Group CEO of JSPL Mr. Ravi Uppal leads this process by including a team of young managers in the CEO's office, appointed on a rotational basis. These young managers support him by coordinating JSPL's separate businesses and functions and are thereafter placed at key leadership positions in the company. Mentorship in this way has been an important value and practice at JSPL, led by the company's CEO as a role model.

In 2015 JSPL embarked upon an initiative called Process Based organization (PBO), whereby every employee was trained on two or three skills in addition to the employee's core competency. This multiskilling programme was boosted with a detailed assessment of every team on every site.

JSPL's sustainability depends on a culture of meritocracy. This is why a fair and transparent methodology of assessment is crucial, rolled out on the basis JSPL's Performance – Potential Matrix below:

## Meritocracy at JSPL: Employee Assessment Matrix

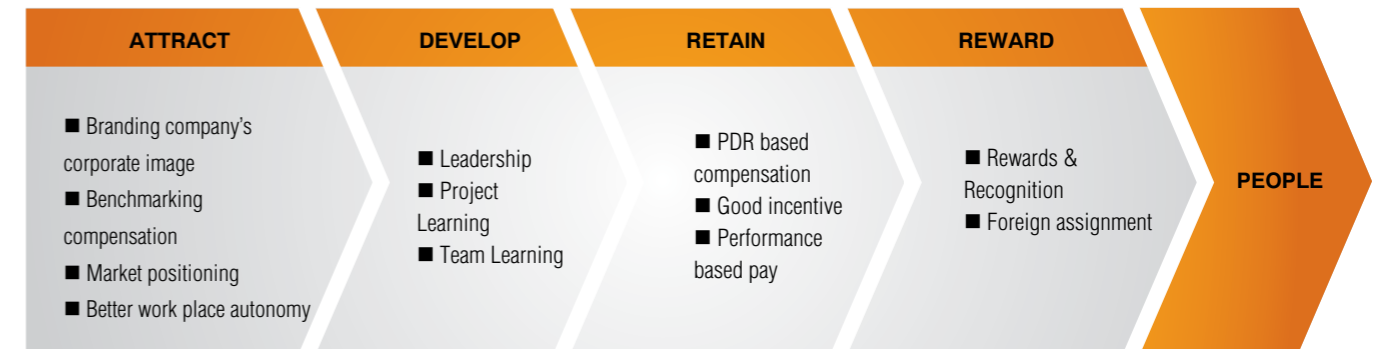


### Capacity building

Employee engagement involves individual and organizational development in response to a changing and complex operating environment. It includes the creation and maintenance of a supportive, people oriented organization culture. The following

approach - Attract/Develop/Retain/Reward (ADR) has been undertaken to attract, develop and retain people with the aptitude and abilities to meet current and future organizational needs. Our ADRR Model lays emphasis on capability building, which helps in driving meaningful business results:

## JSPL's Approach to Employee Capacity Building



Every year, based on training needs identified by an annual Performance Development Review (PDR) process during the months of March-April, training programmes for each employee are planned. During FY 15-16, 318861 Manhours of training imparted to workforce,

For regular manpower employee-days-per annum of training is 2.92. JSPL's training policy recommends an internal-external trainer ratio of at least 1:4. All trainings at JSPL are managed by JSPL's Learning & Development department, led by the Chief Learning Officer.

## Human Resource Training (Manhours)

Description	Unit	FY 2015-16
CG LEVEL (ALL EXECUTIVE LEVEL FROM CG4 TO CG1)	Manhours	129307
SUPERVISORY LEVEL	Manhours	38223
WORKMEN LEVEL (PERMANENT)	Manhours	13444
TRAINEES	Manhours	4788
RETAINERS	Manhours	13
CONTRACTUAL EMPLOYEES (ALLIED+CONTACT O&M +JOB CONTRACT)	Manhours	130005
OTHERS	Manhours	3081
<b>TOTAL</b>	Manhours	<b>318861</b>



Fire and safety facility at JSPL pellet plant, Barbil

### b. Collective Bargaining

Jindal Steel & Power Factory Workers Union has been in place since 1994 at Raigarh for protecting the rights of workers. 100% of non-supervisory permanent employees at Raigarh are members of this union. There is also the Jindal Steel & Power Mazdoor Sangha, JSPL Industrial Workers Union, Jindal Steel & Power Labour Union and Jindal Mazdoor Sabha at Angul, Odisha. All arrangements with respect to collective bargaining and trade unions are as per applicable laws of the land.

## 5.7 Occupational Health and Safety

JSPL firmly believes that providing safe workplace to employees, contractors and other stakeholders is not only a legal requirement but also its moral responsibility. The company is committed to put every possible effort to ensure the health and safety of workers. It has aspirations to be one of the safest workplaces in the world through developing world class safety culture across its operations.

A team of highly qualified, experienced and skilled professionals have been deputed to provide required support to the management on occupational health, safety and fire related matters. The Company ensures latest inbuilt safety technologies in all new projects and expansions to safe guard its operations. State of the art fire prevention and extinguishing equipments are in place at all its operations across the group.

The company's operations conform to International Occupational Health & Management Standard OHSAS 18001 and certified by world renowned external agencies.

The company has initiated number of proactive measures on

occupational health and safety with an objective of minimizing work related injuries and diseases. These initiatives include but not limited to:

- **Global Safety Standards** The Company has developed world class global safety standards at corporate level which forms common framework for health & safety management systems across the group.

- **Safety Training** More than 536 thousand man-hours (>67 thousand man-days) were invested on safety training.

- **Employees' Safety Certification** The Company has developed an online e-Learning module "Be A Safety Star" for all employees to ensure adequate awareness on their responsibility and accountability towards health & safety of themselves and others. Successful employees are certified as "Safety Star" of company.

- **Safety Audits/Inspections** More than 46 hundred safety inspections and audits (including internal and external) were carried out.

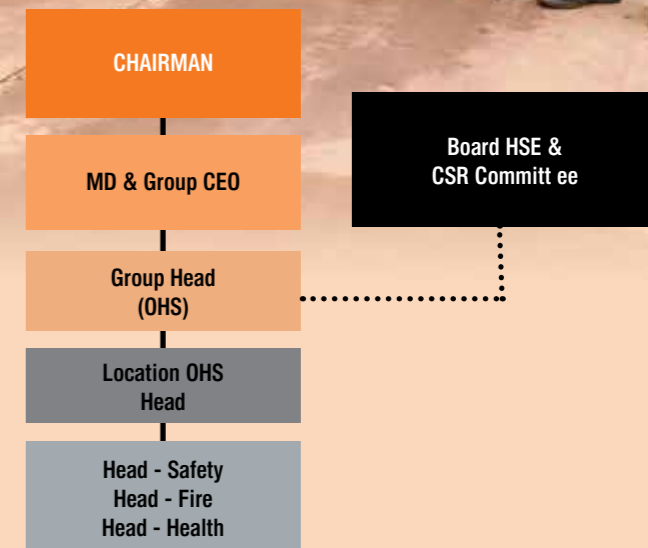
- **Rehearsals on Emergency Preparedness** Total 75 mock drills were carried out on various emergency scenarios to ensure that emergency teams are kept ready and up to date to ensure any potential emergency situation.

- **Safety Touch** A new initiative was started for Safety Officers and Line Managers for the benefit of shop floor workers to give them quick on-the-job training by interacting one to one. It has helped in developing a sense of belongingness toward safety among workers.

- **Safety Log Book for Senior Leaders** All senior leaders have been advised to spend considerable time periodically on shop floor, record safety observations and follow up with concerned for compliance. This activity is helping the organization to involve senior leaders in safety activities with fruitful participation.



Fire and safety team in JSPL's Pellet manufacturing plant, Barbil



## Safety Performance of Indian Operations

	Raigarh	Angul	DCPP	Tensa	Cumulative
NO. OF LOST TIME INJURIES	2	9	0	0	11.00
NO. OF FATALITIES	0	3	1	1	5.00
MAN DAYS LOST	281	18525	6000	6000	30806
FREQUENCY RATE	0.09	0.29	0.36	0.73	0.18
SEVERITY RATE	13.04	452.78	2185.61	4405.05	347.30

# Rashtriya Swayam Siddh Samman

## About Rashtriya Swayamsiddh Samman

Under the leadership of Mrs Shalu Jindal, JSPL Foundation instituted the Rashtriya Swayamsiddh Samman Awards, wherein the Foundation honoured 9 individuals, 10 organisations and 10 special category awardees that are leading social change on the ground in the broad areas covering Rural Development, Agriculture Development, Healthcare, Education & Vocational Skills, Women Empowerment, Public/ Social Service, Environment, Entrepreneurship, Innovation & Technology and Livelihood.

The award felicitated these change-makers for their exemplary courage, commitment and confidence that have enabled them to overcome adversities and create a unique identity of their own. The award was an effort to salute such people and provide them with a national platform, so that others too can take inspiration from them.

United Nations Global Compact Network India (UN-GCNI), the Indian arm of United Nations Global Compact (UN-GC) was the knowledge and process partner for the Awards to undertake process consultation to finalise the Awardees with the help of regional and national Jury members.

## Process & Methodology

A set of parameters were identified after brainstorming and

consultations among experts from businesses, civil societies and academia. Based on the identified parameters, three sets of questionnaires were firm up to solicit responses from Individuals, Organisations and Nominators.

After finalisation of questionnaires and initial process, a press conference was organised to share information and generate awareness about the Awards across among individuals and organisations, working at grassroots to apply for the awards. A total of 358 entries were received and only 203 applicants were advanced to the regional Jury after identifying most eligible entries applying robust parameters. The regional Jury members evaluated the work of applicants' based on 6 critical parameters and marked them on a scale of 1 to 5 (1 being lowest and 5 being highest). Applicants with top average scores were then shortlisted for consideration at national level. A total of 51 (East-12, West-11, North-15, South- 12) applicants shortlisted were placed before the national Jury members. These shortlisted applicants were placed before the eminent national Jury members that met in New Delhi on 27th November, 2015. The national Jury members discussed each application and finally selected 19 applicants (9 from individual category and 10 from organisational category) as winners. National Jury members also decided to choose 6 consolation prizes and 4 inspirational achievements by civil society organisations and grassroots innovators.



Chairman, JSPL and President, JSPL Foundation with Awardees of Rashtriya Swayam Siddh Samman at Kamani Auditorium, Delhi



Chairperson Emeritus, JSPL and President JSPL Foundation Giving award to winners of Rashtriya Swayam Siddh Samman at Kamani Auditorium, Delhi



Chairman, JSPL and President, JSPL Foundation Giving award to winners of Rashtriya Swayam Siddh Samman at Kamani Auditorium, Delhi

## Building a Sustainable World

### 7.1 Introduction

In JSPL CSR extends much beyond the boundaries of business, contributing proactively and arduously in nation building by being socially, economically and environmentally responsible. While designing and implementation of the CSR programs, it is ensured that they are contextualized and culturally sensitive. Functional linkages with district and state government are forged to enable a process of complementary / supplementary effort in the pursuit of holistic development of the people living in the periphery communities. Efforts are made to leverage resources in terms of knowledge and expertise that are available with different like-minded organizations to multiply the social efforts

and outputs.

The top leadership of the company is passionate about CSR initiatives and believes in its potential for making sustainable impact on the society, trickling it till the last end of communities through continuous, proactive, and positive engagements.

The brief descriptions of each Units or Specific CSR interventions are captured with an emphasis on flagship programs in this section of business sustainability report.

### 7.2 Around JSPL's Operations

During FY 2015-16, JSPL's CSR programme focussed on 3 specific themes: Education; Health, nutrition and sanitation; Development in infrastructure



#### JSPL's CSR outreach

##### JSPL-Raigarh

The CSR program area constitutes 33 villages including periphery villages located near Raigarh steel plant and Structural Steel Division, Punjipathra catering to a population of around 60,000 people out of which 34% belongs to SC and ST community.

##### JSPL - Angul

JSPL Angul is located at Nisha Village, Chendipada block, an industrial belt. The district has arid climate and experience extreme weather conditions. The farmers practice rain-fed cultivation. Operational Area: 2 blocks: Banarpal & Chendipada & Special interventions in 321 villages (controlling anemia in adolescent Girls).

##### JSPL - Tensa

The Tensa TRB mine of JSPL is located in the Dengula Gram Panchayat of Koida Block in Sundargarh. Tensa region is in the south westerly tip of Sundargarh and borders the Keonhar

district which is predominantly a tribal population. JSPL has implemented a wide range of initiatives and initiatives such as education, health, livelihood and skill building.

##### JSPL - Patratu

Social development activities as part of CSR Initiatives are in 15 villages of 7 panchayats within the vicinity of JSPL Patratu Plant.

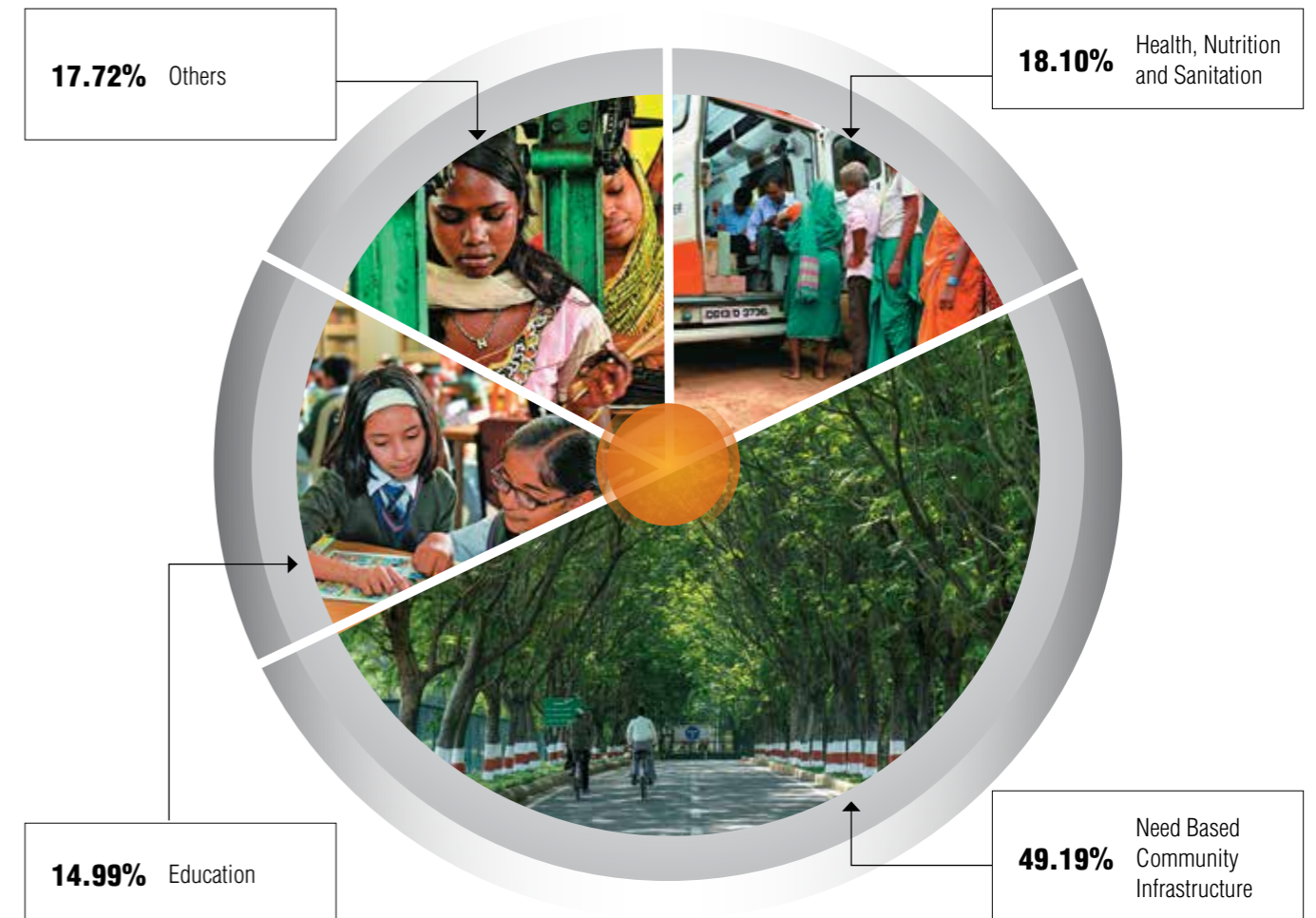
##### JPL- Tamnar

Jindal Power Limited (JPL), a subsidiary of Jindal Steel & Power Ltd. (JSPL), a part of O.P. Jindal Group, has been contributing significantly to the growing needs of power in the Country. The plant is located near village Tamnar in Raigarh district of Chhattisgarh.

##### JSPL-Barbil

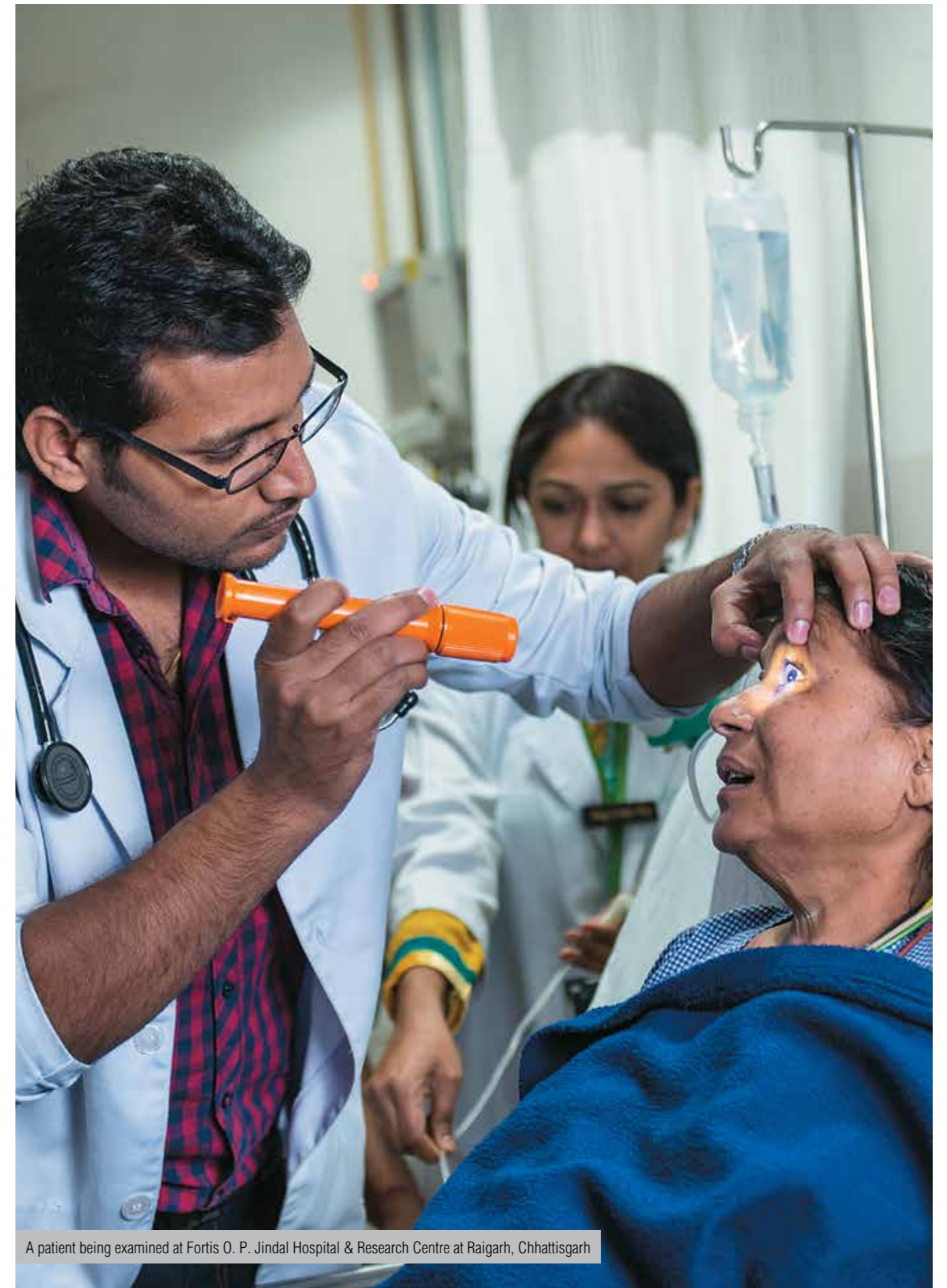
Located in the Joda block of the Keonjhar district, JSPL Barbil CSR programs cover 23 villages. The four major operational areas are Aseinkala, Birkala, Deojhar and Kandra.

### CSR Activities Expenditure at JSPL's Indian operations FY 2015-16



A disclosure on JSPL’s CSR projects at each of the company’s operating sites is listed out as below:

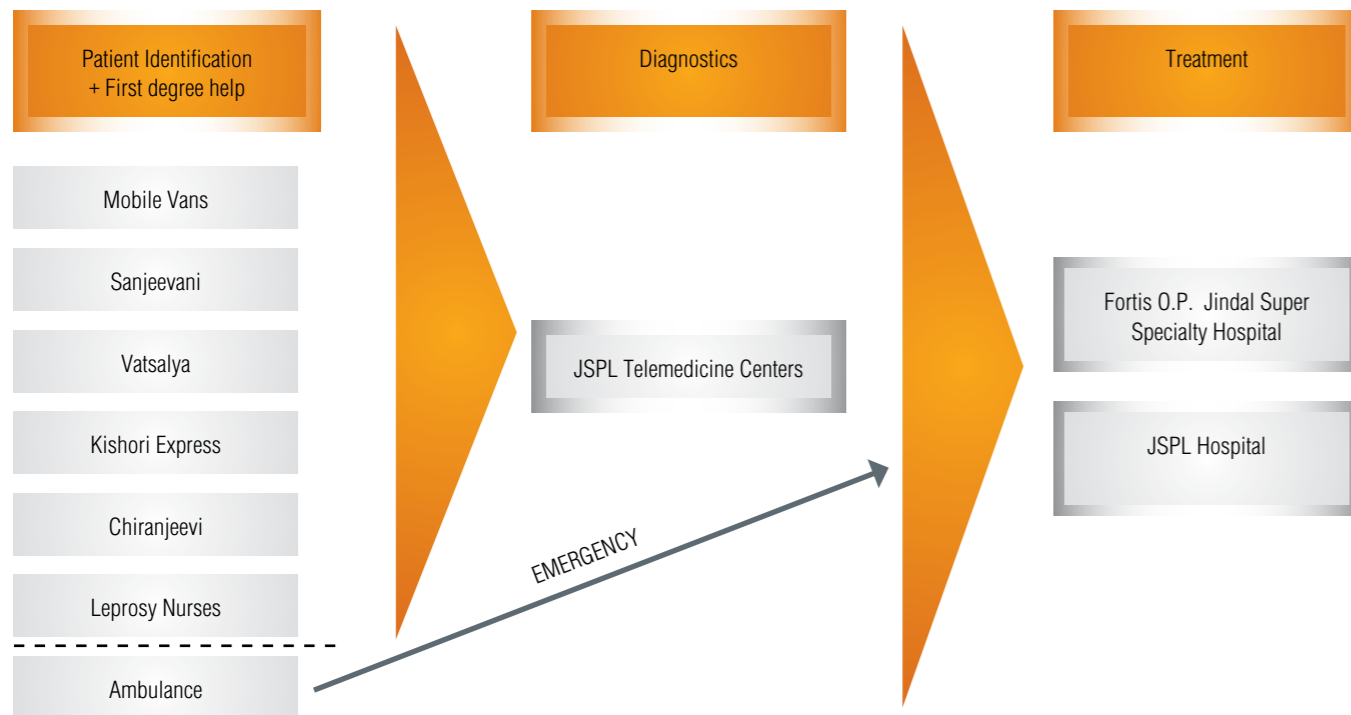
Location	Health, Nutrition and Sanitation	Education	Need based community Infrastructure Development	Others
<b>Tamnar</b>	<ol style="list-style-type: none"> <li>Vatsalya</li> <li>Tele Medicine Centre</li> <li>Health Camps</li> <li>Sanjeevani Health Centre</li> <li>Combatting Malnutrition Community Plantation</li> <li>Construction of toilets</li> <li>Water bodies renovation</li> <li>Khel Wadi at Government Schools</li> </ol>	<ol style="list-style-type: none"> <li>Community teachers support to vernacular medium schools</li> <li>Uthaan - Skill Development</li> <li>Merit cum Means Scholarships</li> <li>Teacher training</li> <li>Balwadi</li> </ol>	<ol style="list-style-type: none"> <li>Construction of Roads</li> <li>Construction of Hospital</li> <li>Community building construction</li> <li>Other Rural Infrastructure</li> </ol>	<ol style="list-style-type: none"> <li>Promotion of Agriculture based livelihood programs like Wadi, Sri</li> <li>Non-Farm based SHGs like Mushroom Cultivation, Handicrafts</li> <li>Sports promotion</li> <li>Animal Husbandry Camp</li> </ol>
<b>Raigarh</b>	<ol style="list-style-type: none"> <li>Asha- The Hope</li> <li>Health Camps</li> <li>Leprosy Camps</li> <li>Tele Medicine Centre</li> <li>Referrals to Super Speciality hospitals</li> <li>Ground Water Recharging</li> <li>Renovation of Drinking water facilities</li> </ol>	<ol style="list-style-type: none"> <li>Women Literacy Mission</li> <li>Community teachers support to Government Schools</li> <li>Scholarship</li> <li>School Infrastructure building</li> <li>Setting up computer centres</li> </ol>	<ol style="list-style-type: none"> <li>Construction of Roads</li> <li>Installation of CCTVs</li> <li>Construction of community buildings</li> </ol>	<ol style="list-style-type: none"> <li>Promotion of Sports</li> <li>Non-Farm based micro enterprises promotion.</li> </ol>
<b>Angul</b>	<ol style="list-style-type: none"> <li>Kishori Express</li> <li>Tele Medicine Centre</li> <li>Health Camps</li> <li>Community Plantation</li> <li>Toilets Construction</li> </ol>	<ol style="list-style-type: none"> <li>Jindal Vidya Peeth</li> <li>Aarambh- Pre School</li> <li>Scholarships</li> <li>Community teachers support to government schools</li> </ol>	<ol style="list-style-type: none"> <li>Water Shed Development</li> <li>Community Infrastructure building</li> <li>Roads Construction</li> </ol>	<ol style="list-style-type: none"> <li>Sports Promotion</li> <li>Non-Farm Microenterprises promotion</li> <li>Farm Based Micro enterprises promotion</li> </ol>
<b>Barbil</b>	<ol style="list-style-type: none"> <li>Health Camps</li> <li>Tele Medicine Centre</li> <li>Kishori Express</li> <li>Community Plantation</li> <li>Toilets Construction</li> </ol>	<ol style="list-style-type: none"> <li>Building up of School Infrastructure</li> <li>Scholarships</li> <li>Community teachers support</li> <li>Teacher Training</li> </ol>	<ol style="list-style-type: none"> <li>Rural Electrification</li> <li>Rural Infrastructure construction</li> </ol>	<ol style="list-style-type: none"> <li>Sports Promotion</li> </ol>
<b>Patratu</b>	<ol style="list-style-type: none"> <li>Tele Medicine Centre</li> <li>Health Camps</li> <li>Combatting Malnutrition</li> <li>Bio-gas Management</li> <li>Toilets Construction</li> </ol>	<ol style="list-style-type: none"> <li>Scholarships</li> <li>Building up of School Infrastructure</li> </ol>	<ol style="list-style-type: none"> <li>Construction of Roads</li> <li>Construction of other Rural Infrastructure</li> </ol>	<ol style="list-style-type: none"> <li>Sports Promotion</li> <li>Non-Farm Microenterprises promotion</li> </ol>



A patient being examined at Fortis O. P. Jindal Hospital & Research Centre at Raigarh, Chhattisgarh

7.2.1 Health, nutrition and sanitation

JSPL's strategy to improve health of local communities



**Raigarh**

**ASHA the hope centre:**

Since August 2009, around 2200 'specially abled' children have been provided with various rehabilitation services such as physiotherapy for mobility improvement, special education to mentally retarded children for cognitive, social and psychological development, special education for speech and hearing impaired children and creating skill up-gradation opportunities. Since 2015, around 301 person with Disabilities (PWD) were also covered

through CBR (community based rehabilitation services). In order to enhance the quality collaborations have been forged with national and international organizations such as Motivation India, Mobility India, Sense International and National Handicap Finance Development Corporation (NHFDC) which has helped the PWDs to get quality rehabilitation services. The collaborations have also helped the PWDs in getting the quality fitments and assistive devices at a subsidized rate.

■ **Open Defecation Free (ODF)** is a flagship program under

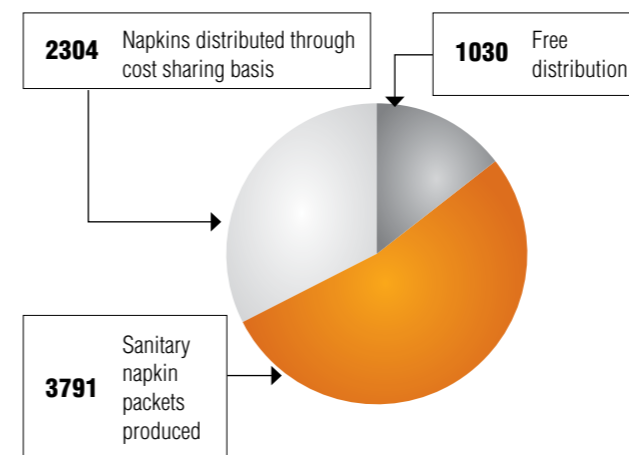
**Community Health Beneficiary data of 2015-16**

	Services	New cases	Follow up cases
1	Physiotherapy & Occupational Therapy Services for locomotor disability	122	228
2	Special Education for Hearing , Speech Disability & Intellectual disability	98	592
3	Vocational & Livelihood skill development	73	346
4	Assistive and adaptive devices support	51	--
5	Mainstreaming of special children in Normal school	16	--
6	Rehabilitation of Persons affected with Leprosy	142	--
	<b>Total</b>	502	1166
7	Persons with disabilities served by Commu. Based Rehabilitation Services	317	
	<b>Grand Total</b>	819	



Swachh Bharat Abhiyaan and JSPL as a major corporate house in the state has joined hands with Raigarh District Administration to make Raigarh block ODF. The focus of the program was to change the attitude and usage of toilets more than only building toilets. Partnership was forged with Dist. Administration and technical agency 'Knowledge Links Pvt. Ltd.' to initiate behavioral change communication initiatives and processes which brought visible changes in the health practices of the people. In this process, triggering was done in 88 villages and till date 08 villages have been declared complete ODF.

■ **Menstrual hygiene** is major concern in the peripheral communities due to various reasons which Govt. of CG is trying to address through the flagship program of National Health



Mission namely Adolescent Reproductive and Sexual Health (ARSH) component. This Govt. initiative is being supplemented through our CSR efforts in Raigarh district by setting up a low cost sanitary napkin manufacturing unit not only to ensure access to low cost napkins among the adolescent girls and young women, but also to ensure employment opportunity to poor village women to almost 1000 adolescent girls and young women.

■ **Leprosy** Prevalence Rate (PR) of Raigarh district is 7.49 is one of the highest in India. JSPL joined with the Govt. of Chhattisgarh in its MDT (Multi Drug Therapy) program by launching IEC (Information, Education and Communication) campaign to reduce social stigma, ostracization and various forms of neglect and discrimination in the communities. Regular dressing and medical care support was given to 142 leprosy patients. Self-care kits were provided to the patients and replenished regularly. Support was sought from The Leprosy Mission (TLM), Champa for reconstructive surgery and MCR (Micro Cellular Rubber) shoes to address deformities caused due to leprosy.

**Angul**

■ **Anaemia control program for adolescent girls through Kishori Express** (Customized vehicle inbuilt for anemia testing through haemometer, counseling, awareness & life-skill education), during the year, has reached 12539 Adolescent girls in 400 AWCs, 165 High school & ME schools in 2 blocks (Banarpal & Chendipada).

Since 2011, 81291 pricks to over 23,000 adolescent girls have been conducted. In 2015-16 4 girls were identified as severely anaemic as compared to 95 girls at Chhendipada block.

■ **Drinking water & health care projects-** Since inception 124 bore wells with hand pumps have been installed benefitting villagers. The project has been handed over to concerned Sarpanch in collaboration with RWS&S, Block Development Officer and District Admin.

**Barbil**

■ In adolescent health care through special project -Kishori Express, to monitor and detect anemia at a tender age were taken up. A total of 1691 adolescent girls administered and educated on the causes of hemoglobin deficiency and its measures. Also the adolescent girls were provided with protein supplements, educated and built awareness on menstrual hygiene.

■ 3642 patients attended and treated through Telemedicine (e-Health) center established at Basudevpur CHC. Attended 8125 patients through Rural Swasthaya Kendra (Community Dispensary) at Deojhar GP office.

**Patratu:**

■ **Mobile Health Camps:** Every month village health camps are ensured through Mobile Health Camps. Patients were provided free treatment and medicines by Doctor and paramedic staffs periodically to reach out to 4849 patients through 235 camps.

■ **E-Health Centre:** E-Health Centre equipped with cloud technology is operated as referral units for patients detected critical or in requirement of speciality services during mobile health camps. Speciality health services are provided by Fortis Hospital, Raigarh. Total cases registered & treated till now is 6748 cases

■ **Execution of Water Tank Pipeline Project:** Overhead tank with pipeline was installed in Rasda village after development of process mapping and handed over to community to meet

their need of safe drinking water. Today it is being successfully operated & maintained by 'Shiv Shakti Pani Samiti' headed by women and now the community owns the ownership. Total beneficiaries: 80 households (200 lives approx.)

■ **Cataract Operation Camp:** Free Screening and Cataract operation esp. for old aged people from operational area was organised in partnership with Niramaya Hospital, Ranchi. During the initial screening 45 patients were identified. Blankets were also distributed among beneficiaries. A total 23 patients operated at Niramaya Hospital, Ranchi

**Tamnar**

■ **Vatsalaya Project:** Vatsalaya Program, the flagship healthcare project is being implemented in 38 villages Raigarh, Chhattisgarh since October, 2010. The objective of the project is to control MMR & IMR and thereby ensure safe motherhood and early childcare. Besides Ante Natal/ Post Natal Care services, Child care immunization, increased institutional deliveries, nutrition supplement to address malnutrition, Adolescent Healthcare, awareness on sanitation, family Planning, use of contraceptive are being supported through the Programme enlisting support of local people and in partnership with the ICDS enlisting services of ANM, Asha & Anganwadi workers. The programme is currently led on-ground by 47 barefoot village based women, trained to take up the above challenges that are named as "Swasthaya Sanginis" or friend for health. In the year 2010, the programme started with 30 Swasthaya Sangini and now being implemented in 38 villages.

■ **Rural Health Camp through Mobile dispensary** To provide health care facilities to the general population, control the epidemic at the primary stage and reduction in health expenses of the community Health check-up and treatment camp organised in operational villages through Mobile Dispensary. In FY-2015-16, total 498 health camps were organised through mobile

dispensary. In the camps, a total 19369 patients got treated, male-6243, female-8272, children-4854, in which 456 critical patients were referred to e- health centre (telemedicine centre) being run by JSPL with the support of HP at Salihabhanta village.

■ **Sanjivini Rural Health Care & E health Centre**

To provide primary health care services, reduce mortality and

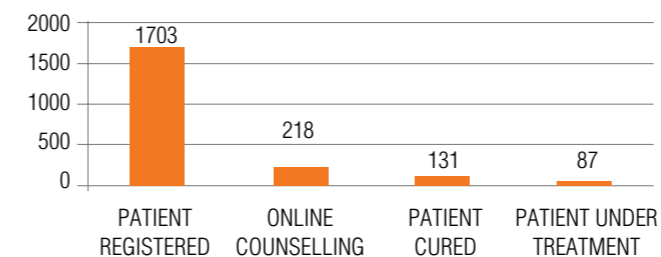
morbidity and decrease health expenses of the community. Sanjivini Rural Health Care centre established from 2010 at villages –Salihabhanta. In FY-2015-16 total 2261 patient registered (male -850, female-964, children-447), out of 2261, 378 anaemic, 217 skin, pathology services-108, Ante natal care-102, and 1564 general patient treated.

## Type of disease and no. of patient treated by mobile dispensary and at Sanjivini Centre

Type of Diseases	Patient treated in by Mobile health	Patient treated in sanjivini	Type of Diseases	Patient treated in by Mobile health	Patient treated in sanjivini
<b>HYPERTENSION</b>	501	26	Sickle cell anaemia	63	30
<b>EAR/EYE</b>	1120	32	Pathology	0	108
<b>COUGH &amp; COLD</b>	5173	609	Minor injury	0	75
<b>GI DISCOMFORT</b>	1293	183	Dental problem	225	35
<b>ANAEMIA</b>	1494	378	Gyne	179	23
<b>SKIN DISEASE</b>	2079	217	Other disease	4584	309
<b>ANTE NATAL CARE</b>	595	102	Fever general & viral	936	134

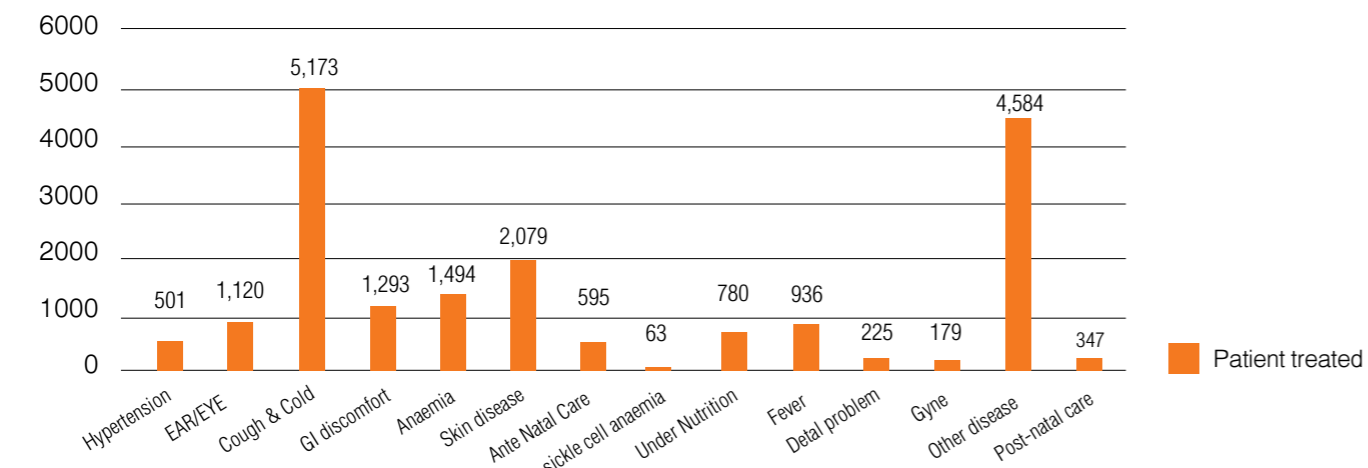
To provide advance health services to community and outreach health services from superspecialist for the referral patient to reduce mortality and morbidity, e health centre /Telemedicine Centre, established at village Salihabhanta in partnership with Hewlett Packard (HP). In FY-2015-16 a total 1703 patients were registered out of which 218 went through the online counselling from the specialist doctors from Fortis hospital, Raigarh.

■ **OP Jindal Hospital & Research Center, Raigarh**



To address the curative healthcare services of the community, JSPL and Fortis have come together to establish the Fortis O.P. Jindal Hospital and Research Centre at Raigarh which is a Multi-Super Specialty Hospital. At OPJHRC, access to quality medical services to the poor and addressing most of their healthcare needs is ensured. Subsidized specialized services are available to patients depending on the criticality of disease and economic condition of patients as per certain prescribed criteria's through free treatment scheme. Referral is arguably the crucial feature of any well- functioning health program. Hence, adequate referral support for clinical care has been provided by JSPL CSR to poor families through Fortis OPJHRC facility. Tele- medicine centers established at different locations of the JSPL operations also get connected to the OPJHRC for referral purposes. Along with the hospital, the Blood bank of OPJHRC has increased the blood storage, preservation and availability of blood which is used by other hospitals of the district as well.

## Patient treated



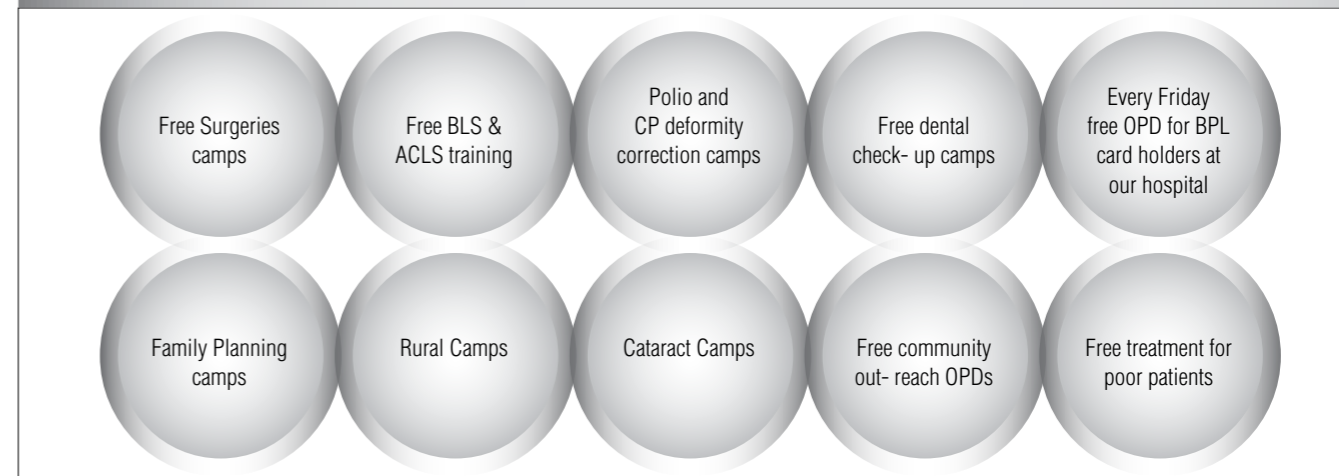
Particulars	FY 2015-16
Subsidized referral Services through JSPL CSR	<b>76</b>
Free treatment to poor patient	<b>34</b>
General Surgeries to poor patients	<b>13</b>





OP Jindal Hospital at Raigarh, Chhattisgarh

### Hospital services for the community



### 7.2.2 Social Program in Education

#### JSPL's strategy to educate the next generation



#### Raigarh

Special care is taken to support students from backward community especially the SC/ST to get quality education in OP Jindal School, Kunjemura and Jindal Adarsh Gramya Bharti School, Kirodimal Nagar. The support is in the form of school fee remission and scholarship to pursue higher education. In addition to above mentioned special initiative, community teachers were provided to strengthen the classroom processes in Govt. schools. Facilities available in the schools have been upgraded and computer education imparted to Girl children of Govt. schools. Functional literacy classes were also organized to promote adult literacy among women. In FY 15-16, 45 boys and 61 girls from

SC/ST community were supported for their education.

#### Angul

■ **DAV Savitri Jindal High School** managed through DAV College management committee to provide quality education through vernacular medium. The present enrolment is 307 students from 11 villages and so far 517 students have been benefitted. There is a 100% pass percentage in 10th board exams (HSCE).

■ **Voluntary Community teachers program** to enhance quality education and bridge teacher's student's gap. The Company has been supporting 93 teaching & non-Teaching



Staffs for 47 Schools.

#### Barbil

- Support to the peripheral schools with 19 social teachers engaged in 9 schools.
- 4 Balwadi Centers for the age group of 0-5 years of children covering 97 children with teachers and nutritional support (linked to Govt. ICDS).
- Nutritional Support to Adivasi Vikas Samity - A tribal School for Children at Serenda, Barbil, benefitting 1000 students in a project mode.
- O.P Jindal Merit Scholarship to 25 Students and support to class Xth 19 passing out students in felicitation programme.
- Constructed an Additional class room at High School, Deojhar to provide quality sitting arrangement and infrastructure.

#### Patratu

- **Operation of Balwadi:** Balwadi operational for 20 children for Birhor Community at Daridih village for their Early Childhood Care & Education. Balwadi plays a major role in intellectual and social development of children belonging to primitive tribe.
- **Community Teacher Support:** Community teachers were provided in 2 schools of operational area to reduce teacher student ratio gap.
- **Community Education Program:** To support the Jharkhand Govt. program 'Vidyalay Chale Chalayen Abhiyaan -Schools were supported to form School Management Committee of different clubs like Reader Club, Eco Club, Art Club and Sports

Club in their schools. To engage students in extracurricular activities along with daily routine, we had organised monthly events in 18 Govt. Schools of operational area on the basis of theme decided for each clubs. In the program a total 2500 students benefitted.

#### Tamnar

- **Scholarship Program:** To support the poor students to continue their studies and to arrest their drop out, 02 scholarship schemes is being implemented. 'OP Jindal Merit-cum-Means Scholarship' meant for the students of OP Jindal School, where the result of the student is the basis for the 'Merit' and the Parental income is the basis for the 'Means, 47 students of Nursery to XII class have been benefited. The Savitri Jindal Scholarship for the wards of widow children in partnership with Smt. Pushpawati Devi Loomba Foundation which has benefitted 195 poor widow children.
- **OP Jindal Primary School -Rabo:** O.P.Jindal Primary School, Rabo was initiated in a remote and unreachable place to provide quality English medium primary education for community living around the Dam area. This place is located 35 KM west of Raigarh. Now the school is running with strengths of 175 students from Nursey to class 3rd; majority being tribal.

#### O P Jindal Community Colleges (OPJCC)

The high rate of student attrition, unemployment, and underemployment in rural India warrants the proliferation of community colleges to address the myriad needs of disadvantaged communities. OPJCC is instrumental in building

the nation of our dreams at the same time contributes to the skill pool of the country and thus supports the Government's "Skill India" goal.

Objective of OPJCC Established in 2007 is helping people develop vocational skills as an approach to rural sustainability, focused on educational, social, and economic mobility. EOPJCC comprises five established community colleges located in Punjipathra, Chhattisgarh; Godda and Uchringa, Jharkhand; and Angul and Barbil, Odisha with its key percepts to accepts learners ages 18-45, with the principles of inclusivity. As an approved government recognized VTP (Vocational Training Provider), training is facilitated for trades like: Construction, Plumbing, Mechanical, Welding and Fabrication, Hospitality, and Electrical, ranging from 3 to 24 months in duration based on NSQF level. OPJCC has three overarching principles that shape technical vocational education and training activities and services:

- **Learn-by-Doing** promotes hands-on, practical skills building under attentive supervision from instructors to develop the requisite proficiencies, knowledge, and confidence to become gainfully employed or employment creators.
- **Global Quality Training** is offered to all learners irrespective of their social, economic, or educational background that encompasses relevant, holistic education and training aligned with NSDC Sector Skill Council national occupational standards.
- **Expanding Opportunities** by nurturing the potential of people in order to improve quality of life and building the nation

## OPJCC student services

Hostels & Meals
Medical Exams
Emergency Healthcare
Job Placement Assistance
After-Training Support
Migration Counseling
Job Incubator Cells
Gender Sensitization
Personal Health & Safety
Communication Skills
Digital Literacy
Industry Visits
Entrepreneurship Skills
Supervised On-Job-Training
Sports, Recreational, & Cultural Activities

of our dreams.

As a part of the Colleges' commitment to equity, inclusive growth, and gender diversity, which are so vital for the nation's prosperity having said this, one continuing challenge is convincing rural youths to leave their community for employment pan-India and abroad. This situation is prevalent nationally, a vestige of structural and societal norms on which OPJCC is working diligently with local, state, and national partners to devise interventions to shift this paradigm.

FY 15-16 saw the College receive topper ratings among the five best national Training Partners of the Construction Skill Development Council of India, a testament to providing consistent global quality instruction. Apropos, the College was the first training provider to conduct successfully pilot training of rural masons in early 2016 under Pradhan Mantri Awas Yojana (PMAY), the Ministry of Rural Development's flagship "Houses for All" scheme. Coupled with this, OPJCC is an official site for government certified Training-of-Trainers and Assessors for Pradhan Mantri Kaushal Vikas Yojana (PMKVY I/II) and the Ministry of Skills Development and Entrepreneurship's Recognition of Prior Learning (RPL) for construction workers.

#### FY 15-16 by the Numbers

- 8616 fresher's trained and enrolled
- 824 JSPL and JPL workers trained
- 754 JSPL and JPL workers assessed
- 699 rural girls and women trained
- 11574 On-Job-Training learners
- 223 construction workers certified
- 209 ToT/A program participants
- 2036 fresher's placed
- 35 community-based, bamboo artisans received training and certification as a job-creation project in collaboration with CSR Raigarh
- 70% of NCVT OPJCC Uchringa students placed in jobs or apprenticeships
- 80% of NCVT OPJCC Angul students placed in jobs or apprenticeships
- Trained 96 males from Left wing Extremist districts in Chhattisgarh
- OPJCC was selected through a competitive process as the Training Partner for Raigarh Livelihood College, a State of Chhattisgarh initiative to boost vocational training.
- OPJCC Aparajita student from Painter Trade selected to receive PMKVY I certificate from Prime Minister Modi in July 2015 during the World Youth Skills Day in New Delhi
- OPJCC received ASSOCHAM India 2015 Skilling India Award for Best Institute Women Skill Development
- OPJCC received India CSR 2015 Community Initiative Award for Best CSR Project on Skilling Rural Women for Sustainable Livelihoods
- OPJCC was selected to conduct the Ministry of Rural Development



Students getting trained at OPJCC, Punjipatra

Rural Mason Training pilot, upskilling/training 100 masons in 45 days while completing 10 homes in Ramgarh District, Jharkhand

- OPJCC was a core group collaborator working on the National Rural Mason Qualification Pack for NSDC, and training materials for ILO/UNDP/MoRD

- OPJCC posted the highest pass percentage rate in the

nation for PMKVY I pilot construction trades (CSDCI 80%)

- Over 3000 youths were counseled during Skills Development Camps in Chhattisgarh and Odisha

- JSPL Adopted Industrial Technical Institutes (ITI), managed by OPJCC since January 2016, have upgraded infrastructure, teaching, and accountability systems

- OPJCC Angul and OPJCC Uchringa passed Quality Council

## OPJCC Location and Trade Details (2015-16)

Activities By Location	Freshers Trained	Freshers Enrolled Now	Freshers Placed	JSPL Workes Multi-skilled	JSPL Workers Assessed	Women Trained	On-Job-Training	RPL	TOT	TOTALS
Angul	725	128	501	414	374	105	-	112	-	<b>2,359</b>
Barbil	1,195	1142	468	-	-	130	20	-	-	<b>2,955</b>
Godda	272	63	133	-	-	-	-	-	-	<b>468</b>
Uchringa	386	311	115	-	-	26	-	86	-	<b>924</b>
Punjipathra	2,234	2160	574	410	380	438	11554	25	209	<b>17,984</b>
<b>TOTALS</b>	<b>4812</b>	<b>3804</b>	<b>2036</b>	<b>824</b>	<b>754</b>	<b>699</b>	<b>11574</b>	<b>223</b>	<b>209</b>	<b>24,935</b>

-\*16-17 to improve job placement rate and student tracking; large % of passout students are not contactable.

-OJT is a government approved training modality for reinforcing skills and upgrading workforce.

of India (QCI) inspection for NCVT programs.

- Mason student, Harisankar Patel bagged 2nd prize at Chhattisgarh State Skills Competition

### 7.2.3. Social Programs in Infrastructure Building

#### Raigarh

Kamla Nehru Park in Raigarh town is important civic infrastructure investments to create recreational avenues for the citizens. This is a collaborative initiative with Municipal Corporation, Raigarh in which responsibilities are shared between the agencies. JSPL has made the major capital investment and taken the responsibility of day to day maintenance of the park, Municipal Corporation takes care of the electricity charges and other miscellaneous expenses through charging users' fee from the citizens. The capital investment made by JSPL includes construction of boundary wall, cultural stage cum yoga platform, creating drinking water facilities, installation of equipment for recreation of children, provision of sweepers for daily cleaning of the park etc.

#### Barbil

- Renovation of the check dam and irrigation canal at Sialijoda and Kitabeda village to benefit 200 marginal farmers.

- Construction of Anganwadi Centre at Sialijoda village

benefitting 35 children.

- Construction of (G+2) Tribal Hostel at Deojhar Nodal School benefitting 50 tribal students.

#### Patratu

- Construction of PCC Roads: On the basis of request from community, total 620 meter of PCC roads were constructed in 4 villages during FY 2015-16

#### Tamnar

Development of essential public infrastructure is an important part of JPLs integrated approach for inclusive and sustained economic growth. The Organization believes that availability of essential infrastructure helps in accessing essential services by rural poor, reducing their alienation from benefits of development and employs local skills and youths for local development. 4150 meters of BT and CC roads were constructed. The objective of the construction was to create basic connectivity in the villages, provide safe transport, saving in time and easing drudgery of travel and facilitating timely medical access. Two water bodies - one in village Tehlirampur and other in Tamnar were renovated. In this regard, pond cleaning, construction of guard wall and platform, painting and installation of grill and solar lights were carried out. In village Libra construction of Cycle stand got

completed. More than 100 students have been benefitted by the initiative. Tamnar being the block headquarter, sports and other related activities use to be continuously organised on the ground. On request of the villagers construction of Pavilion in the stadium of village Tamnar got started. This will be of great help to the people of Tamnar to organise events and sports on the ground. Construction of 15 bedded hospital in village Tehlirampur is in progress. Erection of building and wall plastering were completed.

## SPORTS & CULTURE

### Angul

Company is promoting a local hockey team, by nurturing the 18 hockey players, conducting football, cricket, khokho and kabaddi matches & imparting sports coaching involving 650 local youths. Annual Tournaments are being conducted involving the local teams & nearby district teams facilitating search of sports talents by the dist. sports authorities

### Barbil

- Training of 50 students regularly in Silalijoda Kick Boxing & Wushu Club
  - Seven Sub-junior Wushu Championship winners selected and won cash awards from Odisha Govt.
  - Kick Boxing Team won championship at Pune consisting of 14 players of the locality.
  - Supported football tournament at Anseikala with participation of 200 youth.
  - Training of 30 youth from the locality on football.
  - Supported 5 football tournaments at Anseikala, Kandra, Beleipada, Mahadevnasa, Rana Pratap Yubak Sangha with participation of 2000 youth.
  - Sponsored the Kick Boxing Team for 4 Tournaments participated at different locations.
  - Kick Boxing Team won at the state level competition at Rourkela and won Gold and Silver.
- Football coaching at the Sialijoda Football Ground for full year practice; 60 youth were been trained.

### Patratu

- O.P. Jindal Football Tournament: CSR Department had organized District level "JINDAL PANTHER" Om Prakash Jindal Football Tournament on the occasion of Founder's Day. 32 male teams and 4 female teams had participated engaging 540 youths.
- Jindal Foundation Girl's F.C.: Girl's Football is one of the major initiatives undertaken for active participation of women in sports and their holistic development. We support team with coaching, playing & training kits and also facilitate them in participating in various tournaments organized at different levels. 4 players from team got selected for National level tournament.

### Tamnar

To promote sports youth clubs were supported to organize OP Jindal Memorial cricket tournament at Ghargoda, Karan cup cricket tournament at village Tamnar and cricket tournaments at village Rabo, Charratangar, Mahloi and Jhinkabahal. These events brought a participation of approx. 10000 Youths. On the Occasion of birthday of Honourable Babu ji, an Inter folk dance competition was organized at auditorium of OP Jindal School Tamnar, in which 10 cultural teams from different school of Plant, Mines & Rabo area participated.

## Other Sustainable Development Projects

### Angul

- Women empowerment through farm & Non-farm income generation initiatives- 1492 Women Community members through 131 SHGs have been engaged in various income generation activities undertaken. The various trades followed by SHGs are mushroom and vegetable cultivation, beauty-care products (eco spa ), food processing (Chaiti) incense sticks (Sugandhi), terracotta work, sanitary napkin (Ssodashi) production, tailoring (Srujan) etc
- Community Dairy farming has started since 2012 and it covers 135 farmers in its 3 clusters from 10 villages. Daily 400 liters of Milk /day is being collected for sale which gives them an average supplementary monthly income.
- **Watershed Development-** 2 watersheds have been formed i.e. Kalapata & Jaikishan watershed committees covering 5 villages & touching 1782 families & 8844 people. It's a four years project which started in 2012. Physical execution of the Project was completed by March 2016. The various tangible changes are as follows:
  - i. 416 ha increased as cultivable land
  - ii. 143 ha decrease in fallow land
  - iii. Cropping intensity increased by 77%
  - iv. Crop productivity increased by 85%,
  - v. Increase in ground water table by 1.4m
  - vi. Total production increased from 10940 q to 17129 q
  - vii. Employment generated for women and landless is 150 days/ per person/year
  - viii. Villagers trained are 7886 in watershed activities
  - ix. No. of Savings a/c increased from 36 to 522
  - x. No. of SHGs increased from 16 to 96
  - xi. Net return/family increased two to three folds i.e. Rs.5750/yr. to Rs.15500/yr. in one watershed Rs.27406/yr. to Rs.55456/yr. and 70744 labor man-days generated.

### Tamnar

- a. **Wadi development program:** WADI project for tribal development is a joint ingenuity of NABARD and OPJSKS at 60:40 cost sharing basis which was initiated in selected 250 farmers land (250 acres) and now extended to more 250 acres in the 2nd phase of the program, particularly for tribal communities,



Women of Self Help Group working at Angul, Odisha



Knitting training at JPL, Tamnar

who possess small landholdings largely the barren lands. Mango, cashew and lemon plants have been planted in two phases with a difference of three years between phases. Fruiting in Wadi has started and last year approximately 1000 kgs of mango amounting Rs. 60000/- was sold by the farmers. 110 farmers were motivated for intercrop in Land between the WADI crops who accrued approximately Rs 900000 from their 110 acres of land.

**b. SRI method of Rice Cultivation:** SRI is Scientific Method of Paddy Cultivation which where water requirement of plant and cost of external inputs gets reduced, and rice becomes healthy and tasty as a result of organic farming practices. Profuse tilling results to high yield, increased panicle length and grain weight. SRI method of rice cultivation was taken up in 75 acres with prospective farmers only to be later replicated in the communities after successful experimentation. Average production in traditional income was found to be 18.84 quintals/acre were in SRI it came to 28.41 quintals.

**c. Aakriti production centre:** To promote vocational skills among women 'Aakriti Production Centre' was established where 38 women associated with the project registered 'Aakriti Multipurpose Cooperative' and formed 'Kelo-craft Women SHG'. At present manufacturing of apron, cushions cover, bags, wall hangings, garments etc. are being carried out in the centre. After training, the women have managed to earn more than forty thousand rupees and they have received order from Block Education Office to stitch school dress for 1000 children.

**d. Mushroom Production:** Mushroom production has

intensively taken up in the villagers as it has been found as one of the most viable IGAs. 41 HH and 03 SHGs were supported to establish mushroom production sheds. Mushroom worth of Rs. 601690/- was produced. The Common Interest Group 'Tamnar Samahit Samuh' supported to produce Mushroom Spawn managed to produce and sell 17640 bottles amounting Rs. 382534/-. 370 farmers in operational villages, 70 farmers in Raigarh, 20 SHG members at Hamirpur area and 50 villagers of Livelihood program - State Bank of India were trained to cultivate mushroom.

**e. Aprajita – Women Mason Training Program:** Aprajita is the construction skills training which targets women already working as construction laborers and had little or no formal construction skill and who are interested in learning in order to earn a sustainable livelihood. Under this program 12 women mason from village Regaon went through on -job training and 24 women from village Kasdol went through 06 months basic training on mason at OP Jindal Community College, Punjipatra.

**f. Swa-Shakti (Empowering women through SHG) and Swawlamban (Self Employment):** Swa-Shakti and Swawlamban projects together encourage thrift and saving through micro-finance and income generating activities through micro-enterprise among the women belonging to the communities in the project area. Project Swashati encompasses strengthening of 166 women Self Help Group which have saved 42 Lakhs and a corpus of more than 83 lakhs has been created. Under project Swawlamban, training on Lac bangles, Jute products was given whereas production of paper plate, pickle, terracotta and Bamboo Craft in different villages is in progress. 02 SHGs of village Salihari

and Gadgaon were supported to install 02 mini flour making units and a terracotta production centre in village Mahloi was also constructed to promote the artisans.

**g. Subhangi Sanitary napkins:** Production of low cost sanitary napkin 'Subhangi' was initiated in villages Basanpali with the support of women SHG members. Machines and raw materials to SHG were provided by the company, whereas the space of the centre has been provided by the panchayat. 1166 sanitary napkins packets have been produced and sold from Vatsalya Centre in the villages.

## 7.3 Beyond Our Operations

JSPL's social commitment lies at the core of everything we do. Our earnest wish to improve the lives of others goes beyond the confines of our plant site locations.

### 7.3.1. Our Education Institutes in India

JSPL has founded several schools, colleges and universities in India. While the majority of JSPL's education institutions in India are around our plant locations, in January 2009 the OP Jindal Global University (OPJGU) was founded in Sonapat. It has contributed to providing high quality education in the liberal arts, and has also emerged as an intellectual voice shaping the Indian and global policy agenda. This university thus focuses on an area of study beyond JSPL's business interest and in a location that is also beyond JSPL's site operations.

OPJGU consists of five colleges: Jindal Global Law School, Jindal Global Business School, Jindal School of InterNational

Affairs, Jindal School of Government and Public Policy and Jindal School of Liberal Arts & Humanities, on a modern 80-acre residential campus in the National Capital Region of Delhi.

With a faculty-student ratio of 1:15 this UGC-recognized university has provided education to students from diverse economic backgrounds. Beyond academics, OPJGU has emerged as a prominent influencer of public policy with its faculty regularly publishing editorials in the country's National newspapers. Further, the Oxford University Press publishes OPJGU's India Public Policy Report every year.

### 7.3.2. Our Education Institutes in the World

Forty years ago, in 1975, the Naveen Jindal School of Management was established in response to the needs of the Dallas business community, as part of the new University of Texas at Dallas.

Today, it still is doing the same — designing innovative curriculums and programs, recruiting world-renowned faculty and researchers, providing students with rigorous training and relevant skills for professional success — to answer the requirements of area businesses that benefit from the school's quality reputation in the marketplace.

In four decades, the Jindal School has grown to globally respected business school offering programs with Top 10 rankings from Bloomberg Business Week, Financial Times and U.S. News & World Report.

The school is the largest of UT Dallas' eight schools, with a 2016 fall enrolment of more than 9,100, up nearly 11 per cent from the prior year. Programs are offered at the bachelor's, master's, PhD and executive levels, and they focus on eight areas of business specialization.

Based on faculty publications in 24 leading business journals spanning all areas of business over the last five years, the Jindal School ranks No. 11 in North America in research productivity and No. 12 globally, according to The UTD Top 100 Business School Research Rankings™ (2015). In 2013, Financial Times ranked the school at No. 18 in the world for faculty research productivity.

### 7.3.3. Winning the Rights for Indian Citizens to Hoist the Indian National Flag

As a young entrepreneur in the 1990s Mr Naveen Jindal, like many other people his age, took pride in the tricolour, but could not hoist it because of the laws prevailing then in the country. After completing his MBA he returned from the US, a country where the National Flag was allowed to be hoisted by its citizens. He wanted Indians to have the same right and moved the Delhi High Court with a writ petition under Article 226 of the Constitution. Eventually he won his legal battle for himself and the whole Nation. In 2002 the Union Cabinet announced that citizens will be free to fly the National Flag respectfully on all days

from January 26, 2002. The Government subsequently issued a new flag code (Flag Code of India 2002), with guidelines for flying the National flag.

Subsequently, the Chairman of JSPL Mr Naveen Jindal set up the Flag Foundation of India (FFI) with the vision of instilling in citizens of India a sense of pride in the tiranga (tricolour), India's National Flag. To achieve this, the FFI uses all possible means—music, art, photography, cultural programmes, festivals, seminars and workshops. Collaboration with civil society and advocacy groups, corporate houses, educationists and like-minded individuals, with a special focus on children and youth, is a part of its work.

Later, in 2009 JSPL's Chairman Mr Naveen Jindal campaigned for and got a favourable ruling from the Ministry of Home Affairs on December 22, 2009, to let monumental flags be flown at night with appropriate illumination.

In March 2014, the FFI erected a 207-foot flag-mast bearing a 37-kg flag at the Central Park, Connaught Place, New Delhi in partnership with the New Delhi Municipal Corporation. In September 2014, a 207-foot flagpole was gifted to the Government of Afghanistan-- Kabul's first and highest monumental flagpole.

#### 7.3.4. Our Rights at Indian Duty Free Shops

Since September 2005 Indian citizens are allowed to purchase with Indian rupees at the Indian Tourism Development Corporation (IDTC) run duty free shops at airports. This was due to the efforts of JSPL's Chairman Mr. Naveen Jindal who had taken up the issue with the government to allow transactions in India's national currency. It took him 3 years to convince the Indian government to do so. Mr. Naveen Jindal stated, "To my mind, when we are adopting a new symbol for the Rupee and want to display it with pride, then why are we not willing to accept the Rupee at our own duty free shops!"

The FFI has so far installed 43 monumental flagpoles of 100 feet height and 12 monumental flagpoles of 207 feet height, across India. In all, it has so far installed 55 monumental flagpoles in the country, which is the highest number in the world for a country. Besides India, there are just 13 more countries with such flagpoles.

#### 7.3.5. Population Stabilization and Health

The Citizens' Alliance for Reproductive Health and Rights is a voluntary organization founded by the Chairman of JSPL Mr Naveen Jindal in November 2011. The Alliance brings together politicians (cutting across party lines), activists and journalists on one platform to create awareness about maternal and infant mortality and family welfare that impact population levels in India. The purpose is to raise awareness and set examples through a target-based, action-oriented, inclusive approach.

The Alliance brings together and engages technical experts

to help find feasible and actionable solutions that can be implemented in each state. Mr Jindal's effort has been to draw a cross-section of opinion makers into this Alliance, including politicians cutting across party lines.

The Partnership for Maternal, Newborn & Child Health terms the Citizen's Alliance as "a unique leadership initiative" which "has created a platform to bring together parliamentarians across party lines to combine their energies and strengthen efforts toward promoting reproductive health and population stabilization."

In FY 2014-15, JSPL has also signed a MOU with Hindustan Latex Family Planning Promotion Trust (HLFPPT), which is one of the oldest and pioneering non-profit organisations working for more than two decades towards ensuring safe motherhood and better child health, for creating greater access to condoms and sanitary napkins. The task is to adapt to the changing dynamics of healthcare service delivery and devising innovative, cost-effective solutions for placing condom vending machines in urban and semi-urban areas in India.

#### 7.3.6. Sports

JSPL is an ardent supporter of sports and sportsmanship. The Jindal Panther polo team has won 7 tournaments in 2015-16. There is special emphasis by JSPL on the supporting disabled



individuals in sports activities. JSPL has employed paralympic arm wrestling champion Shrimant Jha. Also, for the past 5 years JSPL has sponsored Aryan Chopra, the world's youngest chess grandmaster.

We publish below letters from Shrimant Jha and (mother of) Aryan Chopra on the progress made and the support needed to take these young stars closer to their destination.

#### i. Aryan Chopra, World's Youngest Chess Grandmaster

It was a usual summer afternoon when a 5 year old young boy was playing in campus with other children. Suddenly, there was a loud cry. A reversing car had almost hit the child. He was rushed to the hospital. He was saved but bedridden. So, his friends used to come home and play different board games. One such game was chess. This boy learnt how to move pieces which caught his imagination. One day, he gave a comment which proved a turning point in his life. He told his father, 'Papa, do you know that knight can cover eight houses at any given time?' His father was impressed and thought of getting a chess coach to judge if this boy had any special abilities in chess. The coach came and said, 'Yes'. The boy has an exceptional eye'. It was proven right when after just a few classes in chess, this boy, at the age of 6 became an Under-7 State champion.

The journey that started then has now reached a point where world knows him as a 14 year old Grand Master in chess. He is, at present, the youngest Grand Master in the world.

After winning the State Championship, Aryan's journey would

not have gone forward if JSPL had not held his hand then. JSPL has played the most important role in Aryan's journey so far, by providing steady support in terms of finance and infrastructure, especially for training by International Masters and then Grand Masters. This has been instrumental in shaping Aryan's career. Without JSPL's help it was unthinkable for us, his parents, to even consider chess as a career for Aryan as it is a very expensive sport. Expert Grand Master coaching and playing strong tournaments abroad cost thousands and thousands of Euros.

Aryan has always performed ahead of his age. He won his first International medal at 7 years of age in Asian Youth Championship in the Under-8 age category. Apart from winning Under-11, Under-13 State championships, at 8 years of age, he made a record by becoming the youngest U-10 Commonwealth Champion. At age 9, he won the whole B- Group in Commonwealth Championship held in South Africa, thus, technically winning Under-12 Championship, though he was given his age medal as per the rule. After winning Asian School Championships and Asian Youth medal at 9 years of age, Aryan played Under-11 National Championship and tied up for the Championship. He was given second position on Buccolz score even though he had beaten the champion too.

And then, Aryan focused his attention on increasing his rating and winning titles. On the basis of his rating, he has been India No.1 consistently for many years now and always maintained his position in the World Top 10. At 11 years, Aryan won his first

The Partnership is governed by a Board, and administered by a Secretariat hosted at the World Health Organization in Geneva, Switzerland. The Partners' Forum brings together all PMNCH members together on a regular basis. (<http://www.who.int/pmnch/about/en/>)



Jindal Panther Polo Team

International Master Norm. At that time, he was the youngest in the world to make his International Master Norm. Due to financial constraints, Aryan could not play many tournaments for the next 2 years. But he kept working hard and we continued with his training, thanks to JSPL.

JSPL's support has been very crucial in Aryan's growth. Many of his coaching sessions and all of Grand Master Training sessions were held at G-5, Anand Niketan and this infrastructure support was extremely important. As a result, Aryan made his next International Master Norm, which was also his first step towards the Grand Master title. He was, at that time, the youngest International Master in India.

And then, in just 10 tournaments, Aryan clinched his Grand Master Norm as well as a rating of 2500. Thus Aryan became a chess Grand Master at the age of 14 years, 9 months, 3 days. But...this is just the beginning. Since Aryan started with his chess, he has only one dream...to become the World Champion in chess and remain the World Champion.

We are very thankful to JSPL. Whenever we needed funds very urgently, we put our problems before JSPL. First, it was Dr.Sahni who always stood by Aryan and saw us through fund crunch many times and arranged for coaching in G-5. Then, Mr.Rajeev Bhadauria helped us. Mr.Bhadauria always had words of comfort for us, always motivating us to keep a positive outlook and then, help sort out things for us .

Aryan has proven that he has the ability. To become the World Champion, funds are needed for expert training and playing tournaments. We hope, JSPL will continue to trust his abilities and hold his hand more firmly.

**ii. Srimant Jha, Para Arm Wrestling Champion**

"My name is Shrimant Jha. I am Basically from Darbhanga, Bihar. Born & brought up in Bhilai, Chhattisgarh and currently residing at same. From 2011 to 2016 I have won Gold Medal in all National Games. In 2013 first time I have represented India in International Para Arm Wrestling Games held at Poland and secured 10th Position. In 2014 once again I have represented my country in World Para Arm Wrestling Championship held at Poland and this time I have won SILVER MEDAL. In2015 in the same event I have represented my country which was conducted in Malaysia and won Bronze Medal. Recently in 2016 in Asian Para Arm Wrestling Championship won the 4th position in Uzbekistan.

This year in international Para Arm Wrestling-2016 Games held at Bulgaria secured 8th Position. Jindal Steel has always been my support system. Company has promoted my game in every aspect and helped me by giving me all supports required. Company has sponsored all my participation



Jindal Panther Polo Team receiving the winner trophy

starting from myearly days of National Games. I would like to say Big Thank You from bottom of my heart to company management and request to them to please continue supporting me. Without you it is impossible for me to chase my dream " .

**iii. Jindal Panther Polo Team, Champions Again**

The Jindal Panther Polo Team, led by JSPL's Chairman Mr Naveen Jindal himself is one of India's premier polo teams. Each year the team wins some of the most prestigious championships in India, and takes a loss in its stride as well. Many of JSPL's employees attend these Polo games, and also help organize the championships. Sportsmanship is in the DNA of JSPL's spirit. It builds resilience, and proves the point that both victories and losses are here to stay but for a while, and so all we need do is to give our best efforts to win.

Championship/Trophy	Result
INDIAN OPEN CUP	runner up
INDIAN MASTERS CUP	Won
BARODA CUP	Won
CAVALRY GOLD CUP	runner up
MAHARAJA JIWAJI RAO SCINDIA GOLD CUP	runner up
KHYBER MAHARAJA HARI SINGH CUP	runner up
NORTHERN INDIAN POLO CHAMPIONSHIP	Joint winner
SMS GOLD VASE CUP	runner up
RMRM GOLD VASE CUP	Won
THE NAWAB OF BHOPAL & PATAUDI CUP	Won
AMITY POLO CUP	Won
YES BANK INDIAN MASTERS POLO	Won

# Case Studies of JSPL's Business Sustainability

## 8.1 Case Study 1

### The Jindal School Of Management, University Of Texas

By: Donna Steph Rian and Glenda Vosburgh

#### Naveen Jindal School of Management, UT Dallas

JSPL's chairman Mr. Naveen Jindal is a management graduate from the University of Texas in Dallas, USA. In recognition of his philanthropic contribution to the University as an alumnus, the University of Texas Board of Regents has named the school - Naveen Jindal School of Management.

Forty years ago, in 1975, the business school (renamed - the Naveen Jindal School of Management in 2011) was established in response to the needs of the Dallas business community, as part of the new University of Texas at Dallas.

Today, it still is doing the same — designing innovative curriculums and programs, recruiting world-renowned faculty and researchers, providing students with rigorous training and relevant skills for professional success — to answer the requirements of area businesses that benefit from the school's quality reputation in the marketplace.

In four decades, the Jindal School has grown from a small school with no national standing to a globally respected business school offering programs with Top 10 rankings from Bloomberg Business Week, Financial Times and U.S. News & World Report. The school is the largest of UT Dallas' eight schools, with a 2016

fall enrollment of more than 9,100, up nearly 11 percent from the prior year. Programs are offered at the bachelor's, master's, PhD and executive levels, and they focus on eight areas of business specialization.

Based on faculty publications in 24 leading business journals spanning all areas of business over the last five years, the Jindal School ranks No. 11 in North America in research productivity and No. 12 globally, according to The UTD Top 100 Business School Research Rankings™ (2015). In 2013, Financial Times ranked the school at No. 18 in the world for faculty research productivity. For Dr. Raymond P. Lutz, JSOM's first dean, the school's growth has been stunning. What began as a part of the Southwest Center for Advanced Studies (now UT Dallas) offering an MS in Management and Administrative Sciences, and employing three faculty members, has evolved into a school offering 28 degrees and employing more than 260 faculty members.

"When I came to UTD in 1973, I admired the development of the technology businesses in Dallas, led by Texas Instruments, and felt that the potential for a new university in Dallas was tremendous," said Lutz, who left the dean's position in 1978 to become the University's executive dean of graduate studies and research. Now Professor Emeritus of Operations Management, he worked for UT Dallas until 2000.

"Today, the Jindal School exemplifies and embodies that potential," Lutz said, "preparing students to meet the challenges of a rapidly changing global society and partnering with the business community to develop innovative programs that fit their needs."

#### After Dr. Lutz Departed

In addition to Lutz, seven others have led the Jindal School as dean, including Dr. Hasan Pirkul, the current dean and holder of the Caruth Chair of Management. Pirkul became dean of the school in 1996.

Dr. Paul O. Gaddis Sr., during his tenure as dean from 1979 to 1985, began a part-time evening MBA program at the school. JSOM now offers five MBA programs.

The late Dr. Frank Bass, interim dean in 1995 and 1996, started the Full-Time MBA program. U.S. News & World Report ranks

that program No. 3 among programs with the "Most Financial Value at Graduation," No. 14 (tied) among public university programs and No. 33 (tied) overall.

Dr. Charles Kroncke, who served as dean from 1988 to 1995, remembers the first year that freshmen were admitted to UT Dallas and the Jindal School in 1990.

"I was at UTD for seven years," said Kroncke, now retired. "During that time, it went through the transition from an upper-division graduate program to a full-fledged state university with undergraduate programs. When freshman students showed up, we initially had a lot of problems. They were 18 years old, and we were used to teaching serious graduate students and assumed they would behave like graduate students. We had to learn how to teach differently."

Also during Kroncke's tenure, the Jindal School initiated its Executive MBA program, offering MBA classes to those already in the workplace.

"One of the things the business community thought we should have was an Executive MBA," he said. "The school's faculty was not initially on board. It took me four years to get the program established. Once students, most of who already had been in the business world for 10 years or more, showed up, the faculty decided they were the best students they'd ever had. And they lined up to teach in the program."

The JSOM Advisory Council also started under Kroncke's leadership. Corporate executives and leaders from the Dallas-Fort Worth business community signed on to serve as council members and student mentors. The council was an immediate success and today plays a vital role in the school's expansion, development and achievement. Members also provide important leadership in strengthening and enhancing school programs and goals.

The Jindal School also was one of the first to offer "distance

learning" or online courses Today, U.S. News & World Report ranks the Jindal School as No. 2 for its online graduate business programs, and No. 6 for its Professional Online MBA. The Princeton Review ranks the school at No. 9 among its Top 25 Online MBA Programs.

#### 'On the Map'

Dean Pirkul has steered the Jindal School to many of its achievements during the past 20 years, including becoming accredited by The Association to Advance Collegiate Schools of Business (AACSB) International. He also oversaw the move of JSOM to its own stand-alone building in 2003 and into a 108,000-square-foot addition to the facility last year. "It was Dean Pirkul and [former UT Dallas president] Dr. [Franklyn] Jenifer who understood the importance of the business school to the University. We had the largest enrollment of any of the schools," says Dr. David L. Ford Jr., professor of organizations, strategy and international management, and one of the JSOM's first hires in 1975. "Dr. Jenifer put us on the map. He and Dean Pirkul also got the business community more involved. They also developed numerous programs, including the Institute for Innovation and Entrepreneurship, in response to the business community's needs."

#### Supporting JSOM — 'One of the best business schools in the nation'

When he was named dean in 1996, Pirkul said his first order of business was to improve the school's undergraduate program, which, he recalls, had "very few electives. It was a generalist program, and most of our students were evening students. We had some strong faculty, but very few in numbers. We started recruiting well-known senior faculty members because we needed to build some areas. We had strength in marketing, and outside that, we had strong individuals in various areas, but we were not strong."



Naveen Jindal School of Management, UT Dallas, Texas, USA



What the school did have, Pirkul says, were faculty members who were committed to students and who were making a difference in terms of research. The culture of the school was as good as it gets, he says, in terms of wanting to build a serious, top institution. Improving support was the next priority. "We were in bad shape," Pirkul says. "I think we had three or four degrees at the time, and we had one-sheet program descriptions that had been photocopied so many times they were hard to read."

Improving student services was also necessary, but there was little money available, so no progress was made the first year. In the second year, Pirkul asked and was given permission to start charging fees for services such as advising and career placement after he learned that UT Austin charged similar fees.

Once UT Dallas made that change — thanks largely to Dr. Jenifer and Provost Dr. Hobson Wildenthal, Pirkul says — it was not long before the school had almost \$1 million to work with and was able to hire professional advisors and create proper program documents. It was also about that time that the school started its magazine, *Management*.

The business school had a strong research and PhD program that had "turned out some world-class PhDs under the tutelage of Frank Bass [1926-2006], Ram Rao and Ramaswamy Chandrasekaran [now at the Erik Jonsson School of Engineering and Computer Science]. It was a small program, but high quality," Pirkul says. "That's important because, to me, an ideal business school has to have a world-class PhD program, world-class master's degrees, world-class research and undergraduate degrees, especially if it's a public school."

Focusing on enhancement of faculty and programs and attracting the top students remains a focus at JSOM, but during the years, Pirkul's duties have changed. Over the past 10 years, he says, he has concentrated more and more on fundraising.

"It was obvious that we needed additional resources and they weren't going to come from the state, so we needed to create endowments and do fundraising," Dr. Pirkul says. "We knew that from Day One, of course, but when you're a young school that's not nationally ranked and visible, it is nearly impossible to do fundraising."

The first major alumni support came from Charles Davidson MS'80 and Nancy Gundy Davidson BS'80. In 2001, they made a \$1 million donation to help with construction of the first building dedicated to the school. At that time, theirs was the largest gift that had been made by alumni to the University. Within three years, they followed with another \$1 million gift, which endowed four research professorships. Then, later they joined an effort led by Naveen Jindal MBA'92 to create a philanthropic package valued at \$45 million with matching funds. As a result of these gifts, the school was named the Naveen Jindal School of Management and the undergraduate honors program was named for the Davidsons.

"The school has given me a lot. I owe a lot to the school," Jindal

said in a Dallas Morning News article at the time.

George Brody, president and CEO of GlobeRanger, a Fujitsu company based in Richardson, and a JSOM Advisory Council member, says he has hired numerous Jindal School graduates and regularly sends his managers to the school's Executive MBA program.

"I am very interested in recruiting students who have an entrepreneurial spirit and mind, as well as leadership abilities," he says. "I have hired lots of UT Dallas graduates for that very reason. I am very happy to play a small part in the Jindal School's growth, as an advisory council member for the past 20 years. During that time, the Jindal School has become one of the best business schools in the nation."

This article first ran in UT Dallas' JSOM MANAGEMENT Magazine, Autumn 2015, Volume 19, No. 1.

#### Jindal School Achievements: 1 April 2015 - 31 March 2016

- The Naveen Jindal School of Management celebrated its 40th anniversary.

- Fall 2015: The Jindal School celebrates 25 years of freshmen on campus. UT Dallas started admitting freshmen in 1990. Of the first class of 100 students, nine were business administration majors.

- In fall 2015, JSOM extended startup launch opportunities to undergraduate students in innovations and entrepreneurship classes. Those who meet certain business plan benchmarks become eligible to receive up to \$5,000 in seed money for their new ventures.

Meanwhile, the first two graduate-level startup launch ventures, Rollout and EverThread, met all their milestones and accessed \$25,000 in funding provided by the school.

- Jeremy Vickers joined the Jindal School as the executive director of the UT Dallas Institute for Innovation and Entrepreneurship, which is based in the Jindal School.

- On April 2, 2015, six Jindal School professors appointed to named and endowed positions — the highest academic distinction that UT Dallas confers — were recognized in investiture ceremonies.

The six were:

- Dr. Daniel Cohen Ashbel Smith Professor of Accounting;
- Dr. Özalp Özer, Ashbel Smith Professor of Operations Management;
- Dr. William Cready, Adolf Enthoven Distinguished Professor in Accounting and Information Management;
- Dr. Suresh Radhakrishnan, Constantine Konstans Distinguished Professor of Accounting and Information Management;
- Dr. Michael Rebello, Susan C. and H. Ronald Nash Distinguished Professor of Finance and Managerial Economics; and
- Dr. Rebecca Files, Sydney Smith Hick Faculty Fellow, assistant

professor of accounting

- Dr. Vikram Nanda joined the Jindal School in fall 2015 as the O.P. Jindal Distinguished Chair in Finance. Naveen Jindal endowed the chair in honor of his late father, industrialist O.P. Jindal. Nanda's appointment brought to 24 the number of professors appointed to endowed posts. Nanda was formally recognized in his new role in an investiture ceremony held March 29, 2016.

- Dr. McClain Watson, director of JSOM's business communication program, was honored for his dedication to helping students inside and outside the classroom with a campus-level President's Teaching Excellence Award, presented to him at the spring 2015 Honors Convocation.

In February 2016, AACSB International, the global accrediting body and membership association for business schools, named the Professional Online Portfolio Project that Watson created as one of its inaugural Innovations That Inspire initiatives. The initiatives represent ways that business schools are modernizing and diversifying the business education environment.

- Dr. David L. Ford Jr. received the Educator of the Year Award in April 2015 from the National Forum for Black Public Administrators. In February 2016, Ford received a Dallas Business Journal 2016 Minority Business Leader Award for his

contributions as a mentor, educator and role model.

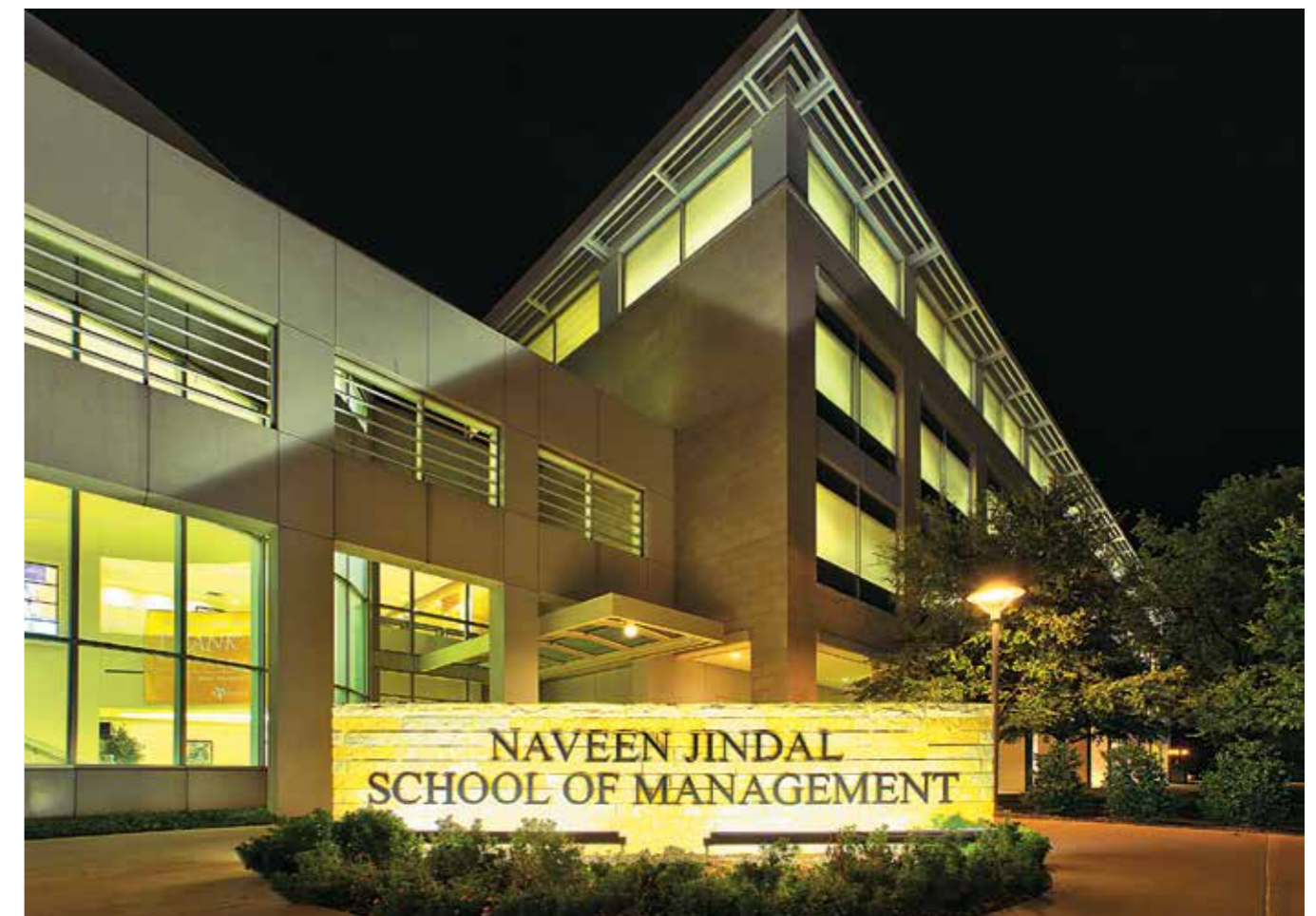
- In October 2015, Kathy Zolton, senior lecturer in accounting, received an Outstanding Accounting Educator of the Year Award from the Texas Society of CPAs.

- Dr. Seung-Hyun Lee was elected vice president of the Asia Academy of Management in June 2015.

- The Academy of Management presented Dr. Eric W.K. Tsang a Decade Award in August 2015 honoring the long-lasting influence of his work. Ten years after he published "Social Capital, Networks and Knowledge Transfer" in 2005, the study had been referred to more than 2,220 times by other scholars, making it the most-cited paper of that the Academy of Management Review published in that year.

- Jindal School finance faculty members Dr. Jun Li and Dr. Xiaofei Zhao, both assistance professors, earned second place in the 2015 Crowell Prize competition, an annual competition to recognize innovative research contributions connecting theory and practice in the field of optimal investment strategies.

- The Jindal School faculty produced 196 articles during the most recent measurement period of the UTD Top 100 Business School Research Rankings™. That productivity placed the school at No. 11 among North American Business schools and No. 12 worldwide when 2016 rankings were released early in the year.



Both JSOM rankings remain unchanged from last year. Since 2005, the school has climbed from No. 36 in North America.

- The Jindal School was the first university business program in Texas to pair high school girls with local businesswomen in a one-day seminar focused on financial independence and women as entrepreneurs. Sponsored by the Jindal School, the UT Dallas Institute for Innovation and Entrepreneurship and Opes One Advisors, the Girls Going Places Entrepreneurship Conference guided 140 area high school girls through a series of events that gave them the opportunity to make decisions that a business owner might face.

- In April 2015, customer loyalty program pioneer Hal Brierley was honored at the inaugural Marketing Legends Awards Banquet. Brierley, a creator of the groundbreaking American Airlines AAdvantage® frequent flier program, spoke about the building blocks used to make a loyalty program a profit center.

- In the spring 2015 semester, the Jindal School launched a BS in Healthcare Management degree program. In its first semester, the program enrolled 108 students. In fall 2016, enrollment had reached 258. "We are unique in that we are presenting an opportunity for business-minded students to gain perspective and knowledge and education on the business side of healthcare," Dr. Britt Berrett, BS in Healthcare Management program director said soon after the program officially opened.

- In fall 2015, the Jindal School launched a new master's degree program in energy management. The program, directed by Dr. Anastasia Shcherbakova, is devoted to building economic leaders in the oil, gas, wind and geothermal business.

- The Jindal School launched a Risk Management and Insurance Concentration in the Finance and Managerial Economics Area in fall 2015. The timing was ideal, concentration director Debra Richardson said, because a labor shortage is looming in the insurance industry. Experts believed there will be a serious deficit

in qualified professionals and were predicting that insurers will have 400,000 job openings by 2020.

In spring 2016, Gamma Iota Sigma, a business fraternity with a tradition of furthering the careers of those in the insurance and actuarial fields, added a UT Dallas chapter in a chartering ceremony at the Jindal School.

- JSOM student Josh McKinley earned the 2015 Collegiate Marketer of the Year Award from the Dallas/Fort Worth chapter of the American Marketing Association a week before he graduated in May 2015.

- Jindal School graduating senior Zachary Evans received the UT Dallas Outstanding Undergraduate Award at the annual Honors Convocation ceremony in May 015.

- In the summer of 2015, the Jindal School launch ProConnect, a project-oriented effort to match local businesses needing help with a strategic project or accounting challenge to master's level students in the Professional Accounting Communications course. By fall 2016, students had worked with 71 businesses and were currently working with 32 businesses on ProConnect projects that gave them practical experience they could add to their résumés.

- In fall 2015, a Jindal School group led by Dean Hasan Pirkul toured Shanghai and Beijing in a trip to meet some of JSOM's 1,800 graduates living there and to start alumni chapters for them.

- Philanthropist, author and Emmy Award-winning musician Peter Buffett headlined the the annual Naveen Jindal School of Management Scholarship Breakfast Nov. 4, 2015. Begun in 2009, the breakfast, the school's major fundraiser, has garnered more than \$600,000 and funded almost 300 scholarship awards

- In January 2016, a World Affairs Council collegiate chapter at UT Dallas was started as an outgrowth of the Jindal School's Global Business and International Management Studies Programs.

## 8.2 Case Study 2 Internalizing the Practice of Key Account Management

Jindal Steel & Power Ltd, a young & dynamic organization has set out for itself a plan for an orbital jump in steel production & sales in the year FY 16-17. As per our annual business plan we aim to take our steel sales from level of 3.5 million MT in the last financial year to over 5 million MT in current fiscal marking a stellar 40% growth. The aspiration in itself is quite challenging and it is coupled with a supply surplus in the Indian steel industry as well as global glut. JSPL's product range is quite focused on the infrastructure growth story of the country which is also currently growing at a tepid pace.

And so the presence of global as well as domestic options for buying steel that every small / big consumer has today, meant that in order to stay relevant JSPL had to take a very different view of the business and essentially ensure there is mutual value generation every time. Also, our customer segments like infrastructure, ship building, oil & gas, power plants are facing huge competition within their industry. In light of the challenges above, which are here to stay, JSPL management decided to adopt "Key Account Management" as a medium and long term strategic initiative.

The simple idea behind JSPL's "Key Account Management" initiative is that in a world of stiff competition for both steel makers as well as users, we want to be the "SUPPLIER OF FIRST CHOICE."

### What are we doing?

The first step was to have a clear definition of Key Account Management agreed upon within the management. We defined Key Account Management very simply as, "A systematic approach to managing and growing a named set of an organization's most important customers to maximize mutual value."

Once the definition was agreed, a list of customers was analysed and screened across products / regions on various parameters viz. Current sales volume, potential for growth, new product development, share of wallet, logistical advantage etc. Based on the above analysis, a list of 60 key accounts was drawn up with concurrence of SBU Heads and Regional Managers. To put things in perspective, these 60 key accounts sum up to over 35% of sales volume as well turnover.

In order to achieve our aim of becoming the supplier of first choice, we realized that we need to have the following internal processes which can help focus on various aspects of value generation in our relationships.

**A) MEET THY CUSTOMER:** The First and foremost step was

to meet and understand the tactical and strategic needs of our customers. Hence, we have set ourselves clear targets that each key account will be met by the concerned Regional Manager at least once a month, by the SBU Head & Executive sponsor at least once in a quarter. This enables us to understand the areas of mutual interest / pain points which helps in taking the relationship forward.

**B) Weekly Reports:** To capture the areas of improvement / action points especially in the short term, a weekly report of each Key Account has been formulated. Dedicated account managers for each Key Account are responsible for it's preparation and then are compiled centrally for review of management.

**C) Inquiry Tracking:** Our current system enabled us to capture orders booked and goods sold to customer. However, for improving the share of wallet with a customer, it was felt necessary to track where we were losing out and why. Hence, a robust system has been placed wherein all inquiries from key accounts are monitored centrally and issues are escalated to respective SBU Heads or Executive sponsors.

**D) Post Sales Issues:** In order to ensure customer delight, a quality complaint redressal mechanism has been put in place wherein strict timelines have been drafted for steps leading to resolution of complaint

**E) Application Specific Communication / Workshops:** In our communication, it is pertinent that we speak the language our customer understands. Hence, we are in the process of devising our communication documents which are application specific. For example, instead of talking about features of our steel plates in general, we have revised our communication documents to talk about required features for each application like ship building, pressure vessels etc.

Similarly, specific workshops are being organized to brief advantages of using JSPL steel for their applications

**F) Bi – Monthly Review system:** To complete the circle, a bi monthly review system has been established wherein key officials like SBU Heads, SBU Chairman, National Sales managers, Production planners etc participate and issues with each account are discussed threadbare and resolved.

By way of above mentioned internal processes, we aim to understand needs of our customer more than anyone else, and in turn enabling us to provide the customer with a solution rather than just a product. Further, one thing which we want to become our USP is to fulfill our commitment within the committed timeline. We call this completing the order ON TIME IN FULL. This will enable our customers to be sure of what they will get and when they will get enabling them to plan their inventories / working capital in a much better fashion.

In the future, we also want to provide technical expertise to our customers and also undertake joint projects with them.



### 8.3 Case Study 3 Total Productive Maintenance (TPM) for Operational Excellence

#### Initial Preparation for TPM initiatives:

The total project management (TPM) philosophy paves its way through 8 pillars of activities and requires a structured and disciplined approach for its implementation.

The Senior Management of the Barbil Pellet Plant unit announced its decision on 7th August 2010 to introduce TPM in the Pellet Plant and declared its commitment and intention to see TPM program through the end. This was informed to all the employees and interested outside parties.

In order to have a thorough understanding of TPM concept, Managers were trained in internal programs and outside seminars.

TPM promotion office/secretariat was established for developing and promoting TPM strategies. The promotion office played an especially important role in preparing the TPM master plan, coordinating with TPM consultants, steering committee, pillar subcommittees and JIPM (Japan Institute of Plant Maintenance). It disseminated all the relevant information and also arranged for training and publicity of TPM program.

The steering committee headed by the unit head and specialised 8 TPM Pillar cross functional Subcommittees was created. Master plan for implementation of TPM across the plant was also prepared.

TPM Policy of the Barbil unit was framed in alignment with company's VISION and MISSION and is indicative of the unit's mid and long term business goals. It also provided the directions of the activities to be carried out in order to achieve the desired goal. The basic objectives and the TPM policy highlights were explained by the senior management team to all the employees in the organization.

#### Implementation Phase:

During the implementation phase, selected activities designed to achieve the targets against set objectives (KPIs) of each pillar were carried out, and thereby met the KMIs of the unit. The order and timing of the activities were tailored to suit the specific characteristics of the plant

The activities performed under each pillar during implementation stage are narrated below:

**1. Focussed Improvement:** The aim of the pillar was to identify, capture and reduce individual losses in a structured manner. Various analysis tools and techniques at every process were used in a focussed way and brought a culture of continual

improvement amongst employees of the unit. The losses were categorised as equipment, human and resource related and a cross functional project team comprising of people from operation, maintenance, finance, logistics performed the improvement activities. The 10 steps Kaizen (improvement) approach was followed. The outcome has been the reduction/elimination of cost/loss, and hence improving overall equipment effectiveness.

**2. Autonomous maintenance:** Operators had lost ownership and their sense of responsibility for maintaining their equipment. Autonomous maintenance practiced in the plant reversed this tendency. Operators became involved in routine maintenance and improvement activities that have stopped forced/accelerated deterioration, controlled the contamination and helped in preventing equipment problems. There are 7 steps of autonomous maintenance of which we have implemented up to step 4 in Pellet Plant 1. This qualified us for the JIPM TPM Excellence Category 'A' award.

**3. Planned Maintenance:** The prime objective of this pillar is to support the Autonomous Maintenance activities and empower the operators/attendants to perform less difficult maintenance activities. While the Autonomous Maintenance took care of forced deterioration, the life of the equipment has been enhancing by the Planned Maintenance Pillar. The latest is done by adopting schedule maintenance, inspection, repair and predictive maintenance technology. In our plant, we are nearing to achieve the objective of having zero breakdowns. Other activities being carried out by this pillar, are maintenance cost reduction, spare parts management, and lubrication management etc.

**4. Quality Maintenance:** Point of generation and point of detection of quality defects were carefully examined. To prevent the defects through the process and through the equipment, we established the relationship between 4M (Man, Machine, Material and Method) and the product's quality characteristics, by analysing quality defects. Root cause analyses were performed and countermeasures in form of Kaizens were developed to eliminate quality defects. In order to sustain the production of defects free pellets, we maintained the 4M conditions with the help of SOPs for any variation taking place.

**5. Development Management:** Under this pillar, various improvements in the form of Kaizens carried out in Pellet Plant-1 (PP-1); were captured as learning/Maintenance Prevention information sheets and these were incorporated in Pellet plant-2, especially in Indurating Furnace and Conveyers. The entire DM Pillar activities were devoted towards development of new plant and new line as well as purchasing of new machineries with Life Cycle Cost concept. The objective was also to complete the project within budgeted cost and time and with no harm to anyone. As a result of the effective implementation of the Development Management Pillar, JSPL'S Pellet Plant -2 has been commissioned in a record period of 23 months (against 31 months in case of Pellet Plant-1) and were able to achieve vertical startup with 97% availability of Pellet Plant-2 in just 3

months (against 9 months in case of Pellet Plant-1).

**6. Education & Training:** The aim of the Education & Training Pillar is to consistently improve the knowledge and skills of our shop floor workers and supervisors and also to improve the managerial effectiveness of our executives. To begin with, competency mapping for the employees was carried out and employees training needs were identified. Training modules were formulated. Further both class room and on job trainings were imparted. Subsequently the effectiveness of the training was also evaluated and based upon the feedbacks by the sectional heads, retraining of the employees were arranged if required. One of the requirements of TPM, especially Autonomous Maintenance Pillar is to develop an equipment and process competent operator. To address it, learning cum skill center is established within the plant premises; where trainings are being conducted on regular basis.

**7. Office TPM:** Administrative and support departments play an important role in backing up production activities. Under this pillar, various related losses were identified and systematically reduced/eliminated. Some of these losses were high truck turn-around time, longer lead time for processing of purchase requisition to purchase order, As a result of elimination of losses, efficiency of the support service function has been increased.

**8. Safety, Health and Environment:** Ensuring safety and preventing environmental impacts are important issues in

process industries. To address these concerns, we have conducted operability studies combining accident prevention training and near-miss analysis. Fail safe mechanisms were incorporated in the production equipment. Health hazards were identified and countermeasures were taken. Pollution free environment was ensured in order to boost up the morale of the employees.

#### Results of TPM implementation:

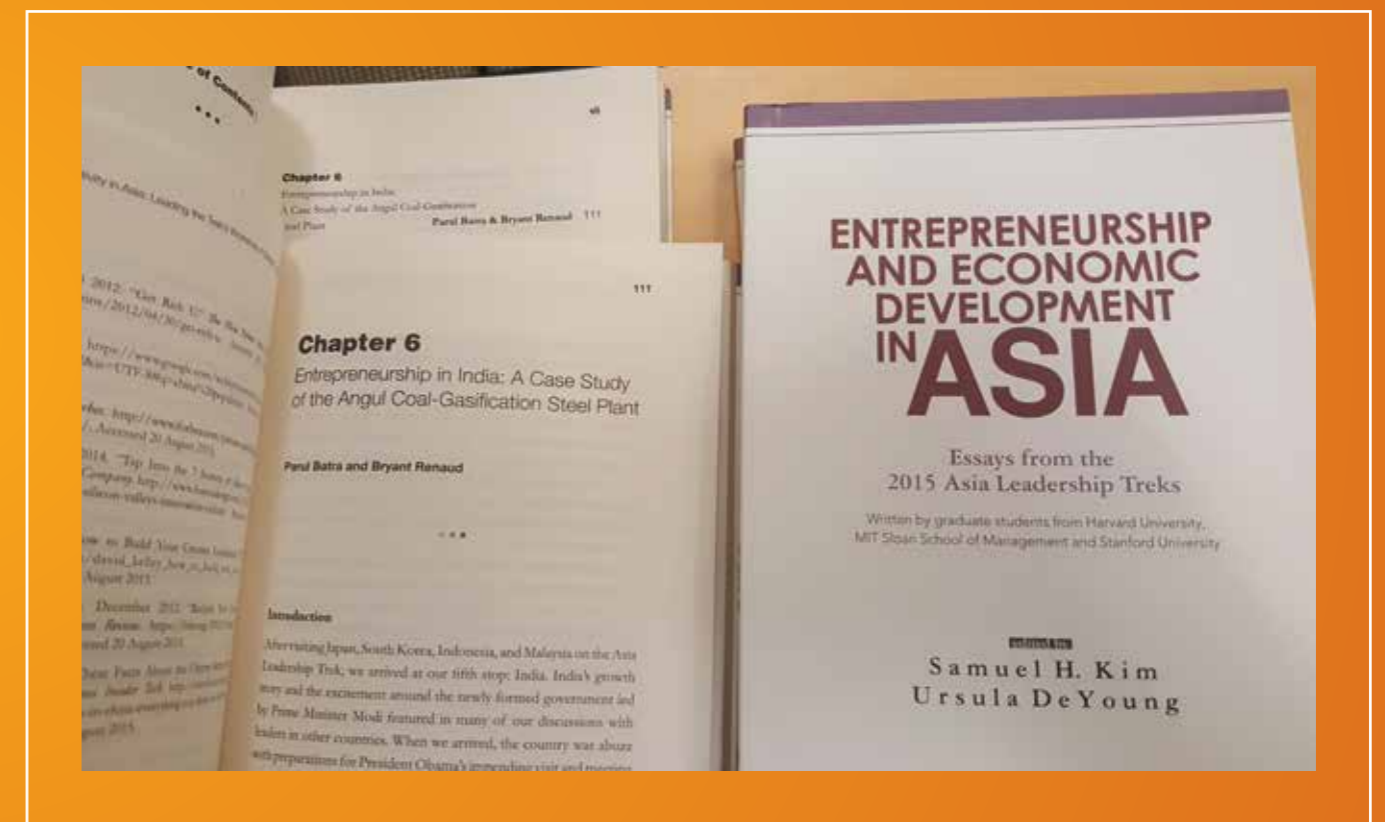
There have been remarkable improvements in productivity, quality, delivery, safety and morale. Breakdowns and cost have been reduced considerably.

As per JIPM norms, we applied for Category 'A' award after 3 years of successful TPM implementation and consolidating of the gains. Japanese assessors from JIPM visited us twice for conducting Stage 1 Audit in the month of July-2015 and Stage 2 Audit in the month of Dec-2015. After successfully clearing stringent two stage audits, JIPM appreciated and recognized our plant performance and awarded us with the TPM Excellence Category 'A' Award, which was received by EVP & Unit Head – Shri T.S. Shanbhogue on 23rd March, 2016 in Kyoto, Japan. Barbil Pellet Plant has the distinction of being the first pellet plant in the world to be awarded with this most coveted JIPM award for excellence in TPM practice.



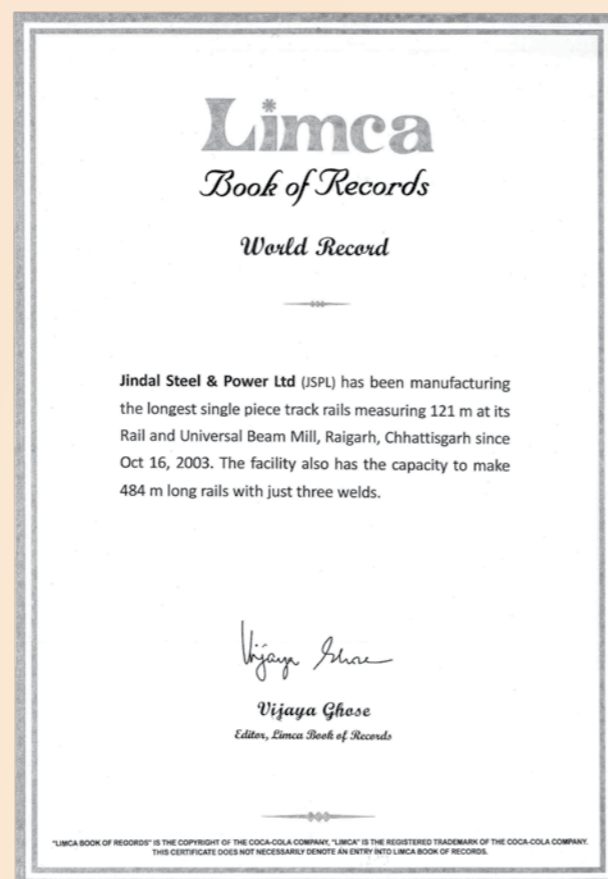
# Chapter: Entrepreneurship in India: A Case Study of the Angul Coal- Gasification Steel Plant

Book details: Entrepreneurship and Economic Development in Asia: Essays from the 2015 Asia Leadership Treks. Written by graduate students from Harvard University, MIT Sloan School of Management and Stanford University, John Lim & Samuel H. Kim (editors), CALI Press, Chestnut Hill MA, USA.



# Awards and Recognitions

- 1.0 JSPL was awarded "India Risk Management Awards 2015" held by CNBC TV 18 and ICICI Lombard General Insurance Company Limited for best in class practices in Risk Mitigation across its plants/offices and for use of technology to track various risks on a real time basis.
  - 2.0 Awarded with Limca Book of Record - World Record for Manufacturing the longest single piece Rails at the Raigarh facility.
  - 3.0 Dongamahua Captive Power Plant (4x135MW) has been conferred with Rashtra Vibhushan Award 2015 in Gold category for its outstanding contribution in the categories- Best HR Practices, Environment Protection and Water Conservation. JSPL, bagged the Odisha INC Green Award – 2015 for its sustainable environmental practices such as adoption of environment friendly technology, plantation drive, watershed management programme, pollution control initiatives and others.
  - 4.0 OP Jindal Community College wins India CSR 2015 Award for Best CSR Project on Skilling Rural Women for Sustainable Livelihoods.
  - 5.0 Jindal Shadeed wins Frost & Sullivan's 'Steel Manufacturing Product Line Strategy Leadership Award' 2016.
  - 6.0 Jindal Shadeed, Oman conferred with Sultan Qaboos Award for Industrial excellence.
  - 7.0 DCP 4X135 MW, Jindal Steel & Power Limited has been selected as Winner of 2015-16 Water Digest Water Award in "Best Water Management in Power Generation" category.
- Raigarh**
- 1.0 JSPL Raigarh won National Safety Council of India Safety Awards for the Year-2015 JSPL Raigarh won Energy Efficiency Award-2015 by CREDA, Chhattisgarh: JSPL
- Angul**
- 1.0 INDIA CSR Award for best CSR Practices in "Water Conservation Activities".
  - 2.0 India CSR award '15 for best CSR project in "Adolescent Girls' Health".



- 3.0 Odisha CSR Forum Award'15 for Successful Convergence of Govt. Schemes with CSR Work.
  - 4.0 OTV CSR Award 2015 for best CSR Practices.
- Patratu**
- 1.0 JSPL, Patratu has been declared as winner of "International Safety Award" by British Safety Council, UK.
  - 2.0 JSPL, Patratu was conferred the Best Technical Exhibitor award at the 2nd International Conference on Rolling and Finishing Technology of Steel at Ranchi in early September.
- Barbil**
- 1.0 The JSPL, Barbil Team celebrated winning of coveted

JIPM TPM Excellence 'Category A' Award that was presented by Japan Institute of Plant Maintenance (under the Ministry of Trade & Commerce, Govt. of Japan) in March, 2016.

- 2.0 Global Environment Platinum Award 2015 for "Pollution Reduction & Environment Management" by Energy & Environment Foundation, New Delhi in August, 2015.
- 3.0 Odisha Environment Congress Award for "Best Practices in Environment & Sustainability" on December 2015.
- 4.0 CII-ESH Award 2015 for "Best Practices in Environment, Safety & Health" on November 2015.
- 5.0 Runners up in the Case Study Competition organized by AIMA for "Case Study on Best Practices on Learning & Development" on December 2015.

#### Tensa

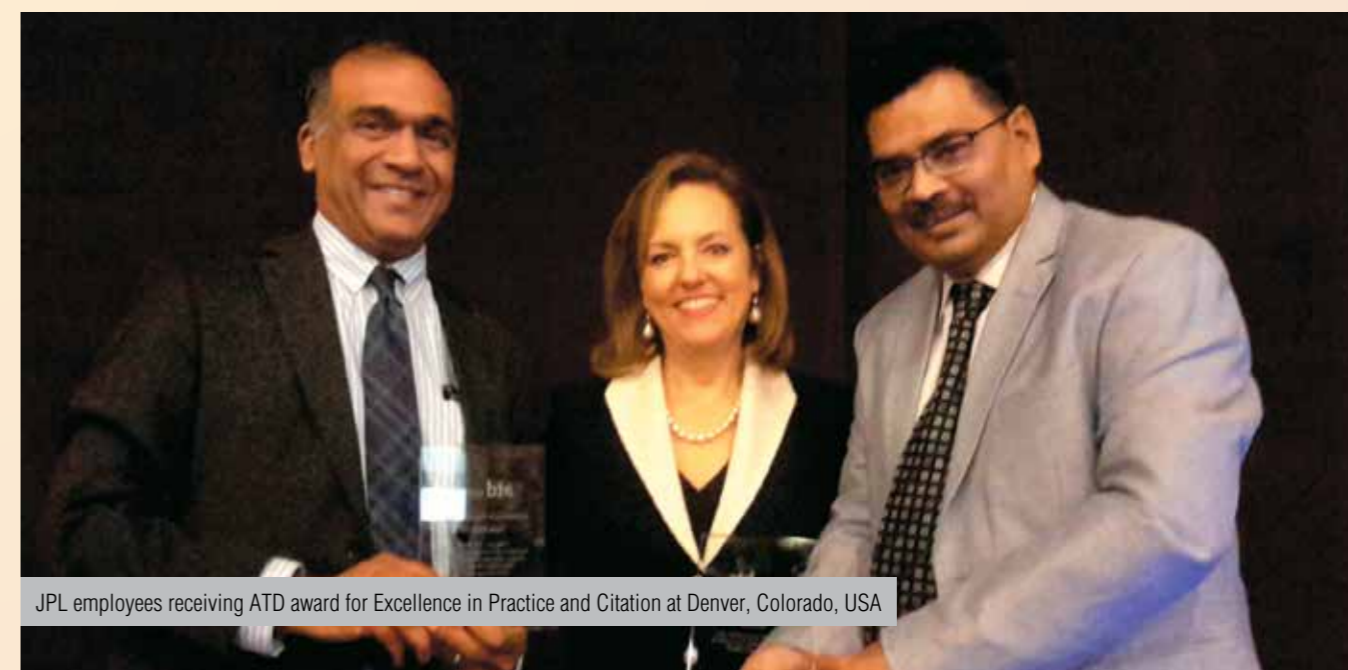
- 1.0 29th National Convention on Quality Concepts : NCQC – 2015 held at Chennai from 18th to 21st December 2015, has won the "Par Excellence Award".

#### JPL

- 1.0 ATD Award: JPL wins the most coveted and sought after award 'ATD: Excellence in Practice & Citation' in the Change Management category for one of its noble initiative "Utthaan" The RISE: Transformation in the lives of PAPs (Project Affected People) through Attitudinal Change and Competency Building". The award was given out at Denver, Colorado, USA.
- 2.0 **Great Place to work award 2015:** "Jindal Power Limited" has been ranked as 2nd best in Energy, Oil & Gas Sectors" & 45th among India's "Best

Companies to Work For – 2015 and by the "Great Places To Work Institute – India" & "The Economic Times" in their 2015 survey.

- 3.0 AIMA Award 2015: JINDAL POWER LIMITED has been conferred with the prestigious AIMA award for "UTTHAAN" initiative, a practical Case Study, during the 7th Business Responsibility Summit, by All India Management Association (AIMA) on 23rd June, 2015
- 4.0 PMI award 2015: PMI AWARD 2015 for "the Best Project of the Year (Large Category)" for the Outstanding Project Management Practices leading to the Synchronization of Unit III of 4 x 600 MW expansion project at Tamnar in a record time of 16 months 8 days which is a National Record for any large capacity of coal fired unit.
- 5.0 JPL was adjudged second in the power category and conferred the most prestigious Energy Efficient Award 2015 by CREDA at Raipur, Chhattisgarh, on Aug 9. This award speaks volumes for the relentless efforts and contributions made by the team to maximize the efficiency of our operations.
- 6.0 JPL has been conferred with the prestigious Asia Pacific HRM Congress Awards 2015 in the categories of "Organization with Innovative HR Practice", "Award for Innovation in Retention Strategy", "Award for Talent Management" & "Best Workplace Practices".
- 7.0 JPL Tamnar has been ranked fifth in the country by the Centre for Science and Environment (CSE), New Delhi in its Green Rating Project (GPR) and received 2 leaves out of 3.



# Way Forward

Dear Stakeholders,

The world we live in today is more connected than ever, where we all have a role to play in collectively creating a better place for us and our children. This is why ensuring business sustainability is incredibly important so that business is done responsibly towards the well-being of the organization and all its stakeholders for the long term.

Indeed JSPL's core undertaking remains to ensure that we continue on our growth path, improve the business, protect our planet earth, improve the business, protect our planet earth, improve the health of our employees, enhance the life of our communities living around our plants, and do all we can to improve the state of the world especially via education. Further below are some more priority areas for the next year.

In FY 2016-17, process efficiency will continue to be a major focus area for JSPL. Specifically the SBUs created in FY 2015-16 as well as the governance systems around them will be strengthened. Boosting sales and On-Time-In-Full delivery of products will continue to be a priority. Meeting all our raw material needs and the logistics of its transportation to our production sites, will be a high priority area for us too. Employee talent development would continue through the next year with even more zeal. The new team of Compliance & Risk Managers will work towards building new proficient systems for fulfilling compliances, identifying sources of risks for the company, and mitigating those risks.

The next year will also witness the implementation of a considerable number of new projects to enhance energy efficiency in our production processes. Energy will be a crucial focus area for the company in the future. These projects will mostly be located in Raigarh, Tamnar, and Nalwa, but other sites will also continue with energy efficiency initiatives. The projects will be rolled out in the most innovative and cost effective manner so as to boost our energy savings.

Over the next year JSPL's Business Sustainability team will

also enhance its outreach to our education institutions such as the OP Jindal Community Colleges, Jindal Institute for Power Technology, OP Jindal Global University, OP Jindal University, and the OP Jindal schools. Our education institutions have been remarkable in the high quality of education it imparts in some of the most backward areas of the country. These institutions outwit the birth lottery to lever the next generation on to a better future. In the next year we will work on making our education institutions better aligned with the jobs in the market, ensure that they are financially self-sustaining, and we will also engage JSPL employee volunteers in mentoring and training activities at our institutions.

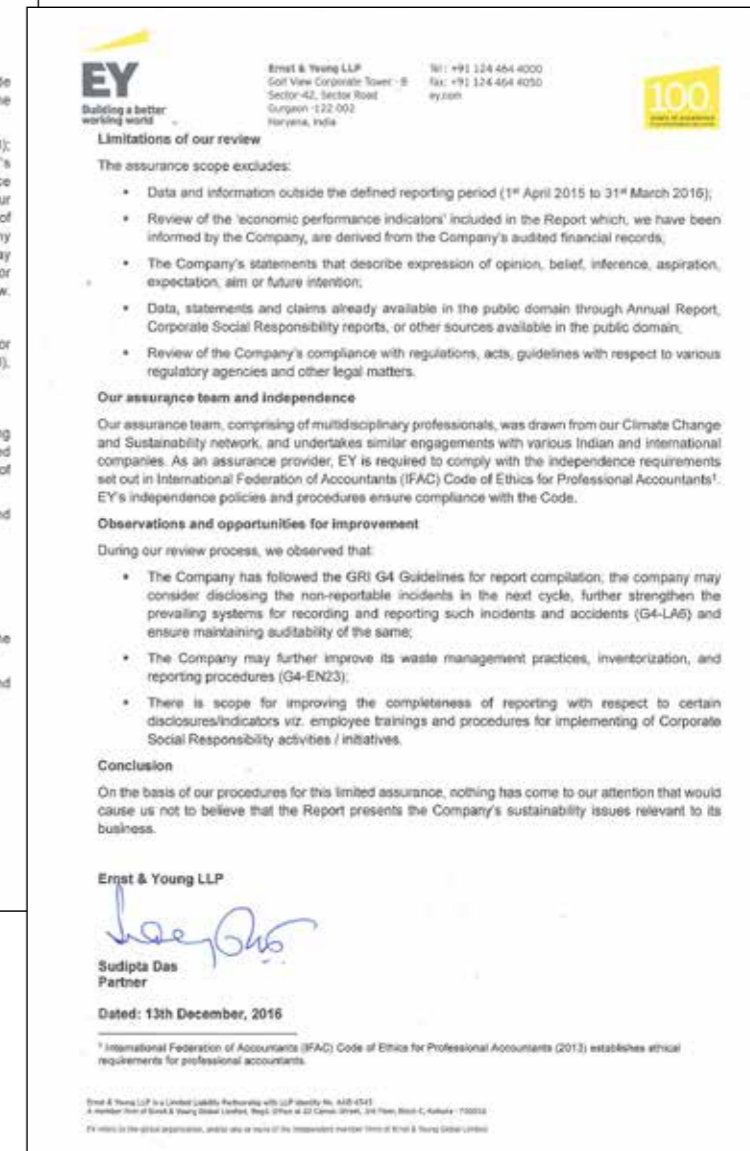
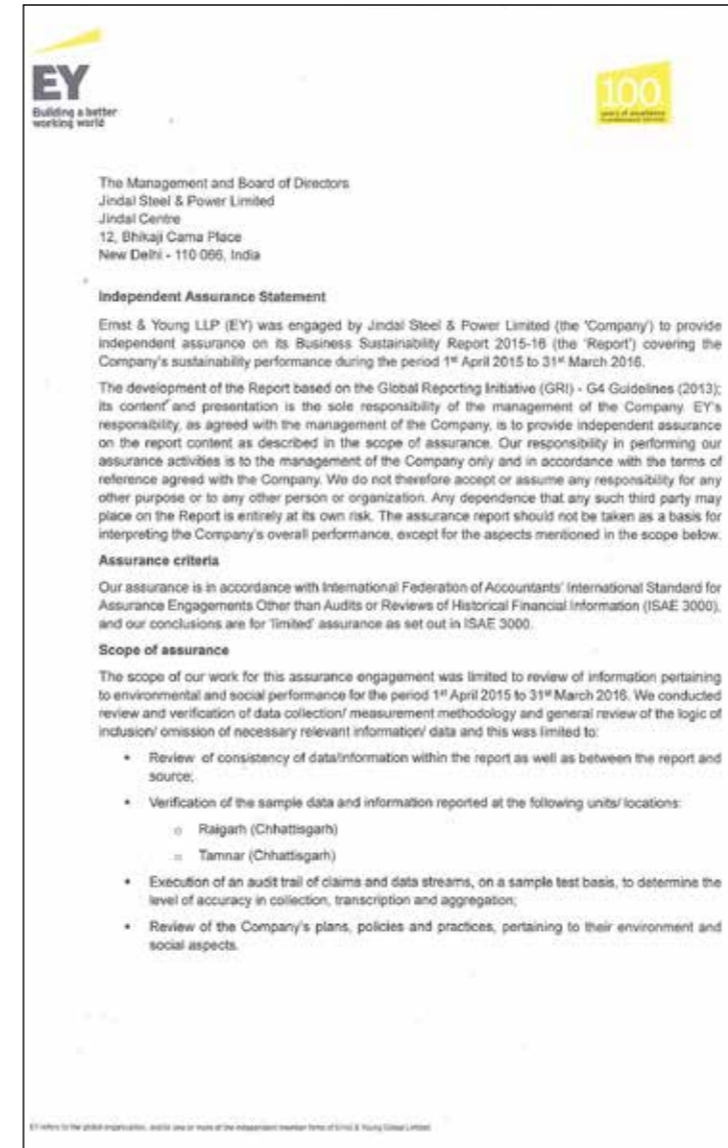
Another institution that will receive focused attention for a turnaround is the Fortis OP Jindal Hospital Raigarh. Our hospital fills an important need of general health care and a few super speciality departments for ailments such as that of the heart. The hospital has an excellent reputation and standing. Going forward we will take up the project of further improving the quality of services, making the institution financially self-sustaining, and providing greater scope of free-of-cost services for those who are economically challenged.

Sports will be an important area of engagement with local communities, and the practices undertaken for ensuring safety of employees at JSPL will be further boosted. In the spirit of being a young, dynamic, and successful global company, JSPL will continue to be principal sponsors of sports champions such as the world's youngest Chess Grandmaster Aryan Chopra and Paralympic arm-wrestler Shrimant Jha, and the Jindal Panther Polo team.

We will also be engaging more with you, our dear stakeholders, in various creative ways. We hope that this would further enhance your understanding of our challenges, as well as of our pro-active approach towards solutions and achievements.

**Miniya**





# Assurance Statement



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# Company Information

## CHAIRPERSON EMERITUS

Smt. Savitri Jindal

## BOARD OF DIRECTORS

Mr. Naveen Jindal, Chairman  
Ms. Shailu Jindal, Director  
Mr. Ravi Uppal, Managing Director & Group CEO  
Mr. Ram Vinay Shahi, Independent Director  
Mr. Arun Kumar Purwar, Independent Director  
Mr. Haigreve Khaitan, Independent Director  
Mr. Hardip Singh Wirk, Independent Director  
Mr. Arun Kumar, Independent Director  
Mr. Sudershan Kumar Garg, Independent Director  
Mr. Shalil Mukund Awale, Nominee Director (IDBI Bank Ltd.)  
Mr. Rajeev Bhaduria, Wholetime Director  
Mr. Dinesh Kumar Saraogi, Wholetime Director

## STATUTORY AUDITORS

M/s Lodha & Co.  
Chartered Accountants,  
12, Bhagat Singh Marg,  
New Delhi - 110001, India

## COST AUDITORS

M/s Ramanath Iyer & Co.  
Cost Accountants  
808, Pearls Business Park,  
Netaji Subhash Place,  
Delhi - 110034, India

## SECRETARIAL AUDITORS

M/s RSMV & Co.  
Company Secretaries  
268, Anarkali Complex,  
Jhandewalan Extension,  
Delhi - 110 055, India

## GROUP CHIEF FINANCIAL OFFICER

Mr. K. Rajagopal

## VICE PRESIDENT & GROUP COMPANY SECRETARY

Mr. Jagdish Patra

## BANKERS

State Bank of India  
Punjab National Bank  
State Bank of Patiala  
ICICI Bank Limited  
IDBI Bank Limited  
Axis Bank Limited  
HDFC Bank Limited  
Canara Bank

## REGISTERED OFFICE

O.P. Jindal Marg, Hisar  
Haryana - 125005, India

## CORPORATE OFFICE

Jindal Centre,  
12, Bhikaiji Cama Place,  
New Delhi - 110066, India

## REGISTRAR AND TRANSFER AGENT

M/s Alankit Assignments Limited  
Alankit Heights,  
1E/13, Jandhewalan Extn.  
New Delhi - 110055, India

## PLANT LOCATIONS

### Raigarh

Kharsia Road, Raigarh - 496001  
Chhattisgarh, India

### Angul

Chhendipada Road, SH-63,  
At/Po: Jindal Nagar - 759111  
Distt. Angul, Odisha, India

### Patratu

Balkudra, Patratu  
Distt. Ramgarh - 829143  
Jharkhand, India

### DCPP

Dhorabotta, Dongamahua  
Raigarh - 496001  
Chhattisgarh, India

### Barbil

Iron Ore Pellet Plant  
Commercial Office, Plot No. 507/365  
Barbil - Joda Highway, Barbil - 758035  
Odisha, India

### Raipur

13 K.M. Stone, G.E. Road,  
Mandir Hasaud Raipur - 492101,  
Chhattisgarh, India

### Punjipatra

Industrial Park SSD,  
Punjipatra, Raigarh - 496001  
Chhattisgarh, India

### Tensa

TRB Iron Ore Mines, P.O. Tensa  
Distt. Sundergarh - 700042  
Odisha, India

JINDAL STEEL & POWER LIMITED  
CIN: L27105HR1979PLC009913

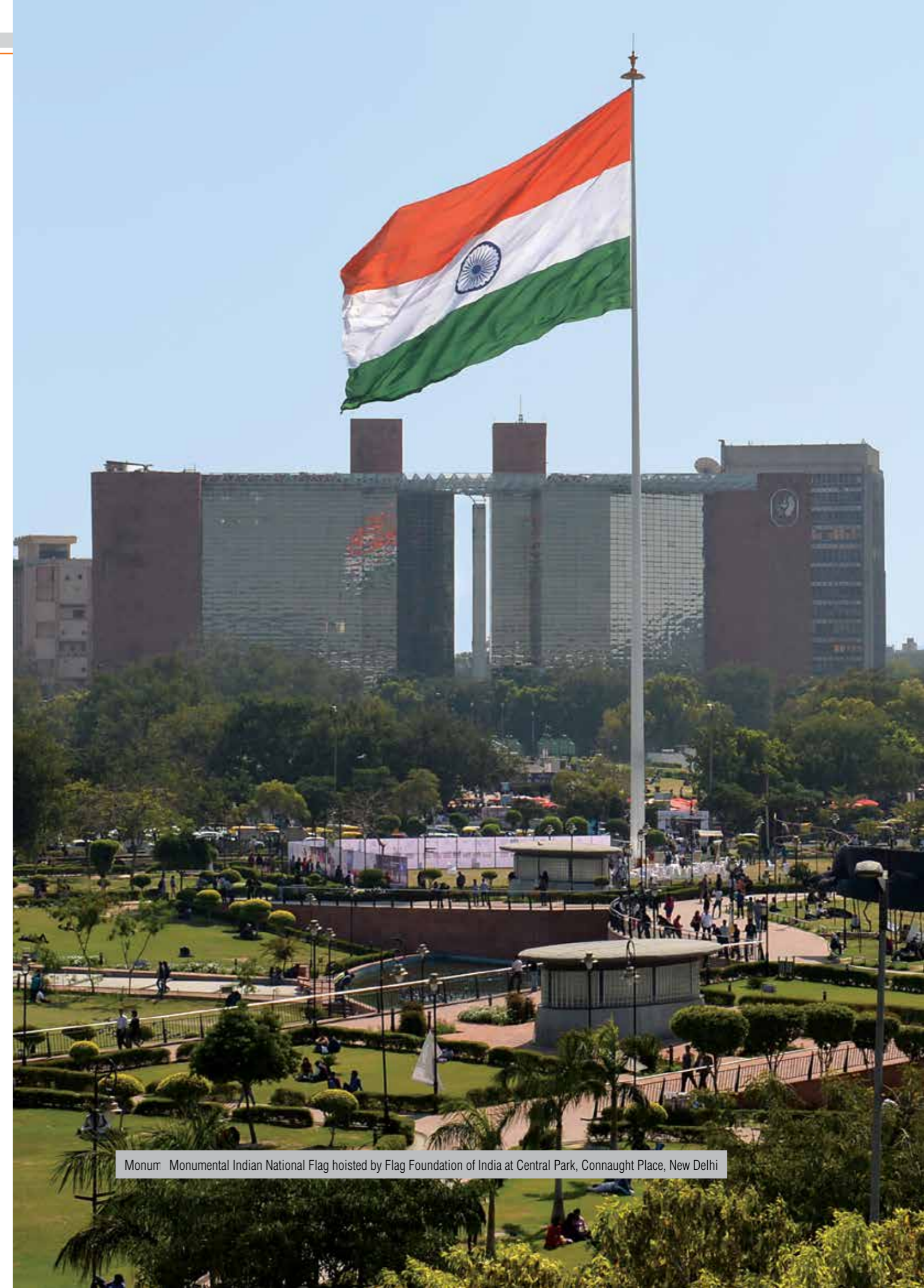
Website: [www.jindalsteelpower.com](http://www.jindalsteelpower.com)

## CORPORATE OFFICE

Jindal Centre,  
12, Bhikaiji Cama Place,  
New Delhi - 110066, India

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Tel: +91 1662 222471-84, Fax: +91 1662 220476



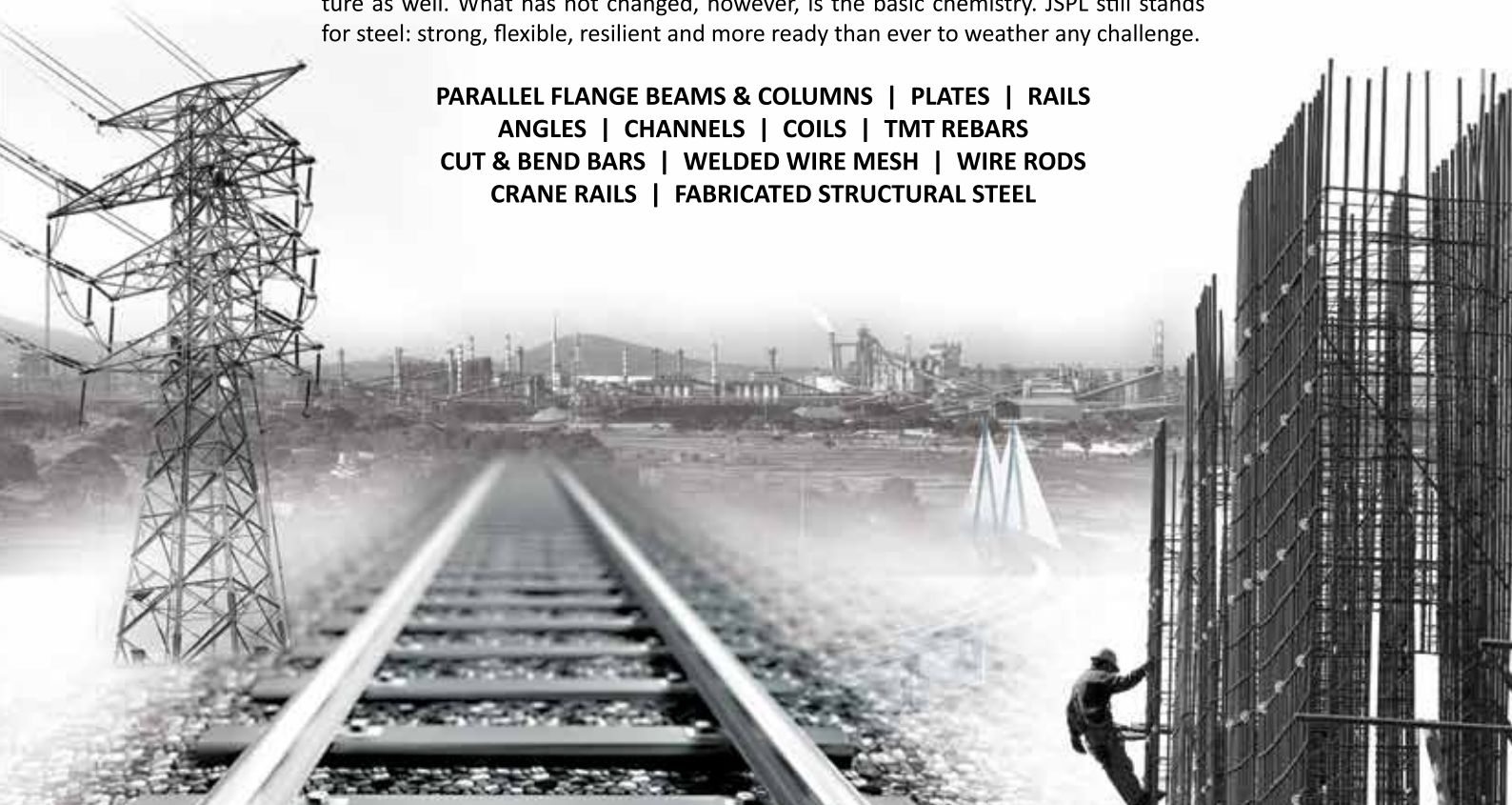
Monum Monumental Indian National Flag hoisted by Flag Foundation of India at Central Park, Connaught Place, New Delhi



# JINDAL STEEL & POWER LIMITED

Since 1800 BC, the chemistry of steel has remain unchanged: For 4000 years it is still iron and carbon. But at JSPL this ancient alchemy mixes with a unique blend of elements—passion, innovation, empathy— to transform a range of long, wide, flat and round products that are shaping the future of modern India. At JSPL, we roll out iron not merely with carbon but with a steely commitment to change lives of people and the course of our history. JSPL started with steel. It is now into power, mining and infrastructure as well. What has not changed, however, is the basic chemistry. JSPL still stands for steel: strong, flexible, resilient and more ready than ever to weather any challenge.

**PARALLEL FLANGE BEAMS & COLUMNS | PLATES | RAILS  
ANGLES | CHANNELS | COILS | TMT REBARS  
CUT & BEND BARS | WELDED WIRE MESH | WIRE RODS  
CRANE RAILS | FABRICATED STRUCTURAL STEEL**



**JSPL DEVELOPS HEAVY CRANE RAILS OF UPTO 150 KG PER METER**



**RAIL TRACKS**

**PARALLEL FLANGE BEAMS & COLUMNS**

**ANGLES**

**PLATES**

**FABRICATED SECTIONS**

**TMT REBARS**

**CUT & BEND**

**HOT ROLLED COILS**

Our wide range of products demonstrates our capability to consistently add value in line with evolving customer aspirations, and be a part of the nation's socio-economic development. Our products are a result of pioneering initiatives that have been made possible by deploying futuristic technologies blended with a culture of consistent innovation.

**Corporate Office:** Jindal Centre, 12, Bhikaiji Cama Place, New Delhi - 110 066, India **Call:** +91 11 2618 8340 **Fax:** +91 11 2616 1271  
[www.jindalsteelpower.com](http://www.jindalsteelpower.com) | [www.jindalpanther.com](http://www.jindalpanther.com) | [www.jsplconstructionsolutions.com](http://www.jsplconstructionsolutions.com) | [www.panthertransfreight.com](http://www.panthertransfreight.com) (CIN L27105HR1979PLC009913)



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Jindal Steel & Power Ltd.



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