NATIONAL STEEL POLICY | CHENNAI HOST TO IESS VI | E-CATALOGUE

IndianEngineeringExports

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IESS VI
International Engineering Sourcing Show
CHENNAI

RUSSIA
PARTNER COUNTRY

As the first country to take the initiative under the 'Make in India' umbrella in two key strategic sectors – nuclear and defence, it is fitting that Russia partners the International Engineering Sourcing Show this year

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EXCLUSIVE MEMBER SECTION AT http://www.eepcindia.org

An exclusive member's section has been introduced on EEPC India's website. The User ID and Password has been sent to members on their email ID that is on record with EEPC India. If any member has not received it, please contact EEPC India at: eepc@eepcindia.org

The email IDs of some members are not available with EEPC India. Please provide your email ID at eepc@eepcindia.org so that we can mail the details to you. It is also recommended that all members view their details in the Member's Directory on EEPC India's website and verify their email ID.

All members are also requested to provide mobile numbers of key contact persons over email. This will enable EEPC India to send important alerts and messages on SMS.

LETTERS

NEW YEAR GREETINGS

Warm greetings.

May this New Year 2017 bring new thoughts and inspiring hopes for a fresh beginning.

Thank you for sending a copy of 'Global Trade Routes' calendar.

I appreciate the attempt in highlighting various trade routes across the world.

Vijay Rupani, Chief Minister, Gujarat State

SUCCESSFUL PROGRAMME

Beyond a shadow of a doubt the organisation of the RBSM at IMTEX was the best programme as to my knowledge organised for the promotion of Indian Machine tools ever. From the beautiful meeting places to the comfortable stay and transfers – it was obvious to all who attended that you put great time and effort into making this event a big success.

We want to take this opportunity to thank you for the wonderful programme, as well as for all the time and effort that you routinely put into organising the events.

We sincerely appreciate all of the work you did to make this event a successful one.

EEPC has indeed set a new standard for making IMTEX an opportunity for Indian Machine tool exports.

Akhil Prakash, CEO, Grover Limited

LIAISON OFFICE IN ALGIERS

An Algerian company, M/s Fares Legal, whose contact details are given below provides services for setting up of liaison office by payment of fees.

Fares Group, 1 rue Mustapha Meghnouche, Textrain, Birkhadem, Algiers, Algeria, Tel/fax: +213 23 59 90 26, Email: info@fareslegal.com

The establishment of a liaison office of a foreign company in Algeria (following the OECD practice of Representative Office) is regulated by the recent Decision No.16 of 2015.

It is subject to the authorisation of the Ministry of Commerce. The period of validity is equal to 2 years and it is renewable.

The liaison office cannot perform commercial activities but it can be used only for marketing and scouting activities as well as any other promotional activity.

The procedures of registration of a liaison office of a foreign company in Algeria are divided in two phases: Initial application and Registration phase. The application starts with a Letter of Application, to be addressed to the Ministry of Commerce, in the Company letterhead.

All the documents coming from abroad must be duly translated in Arabic or French and attested before the Algerian Consulate in the home country of the Company.

You may like to contact the company for further details in this regard.

S Chatterjee, Second Secretary
Embassy of India, Algiers

PROMPT RESPONSE

I write this expressly to convey my sincere appreciation for your prompt and positive response. It truly needs to be mentioned because I had phoned you at around 4.40pm. The receipt of requested document so quickly was a big but pleasant surprise. You are effective, efficient and expeditious. I must add two more adjectives – elegant and exemplary.

May God bless India with more of your kind!

Ravi Acharya

Please write in with your comments at
editor@eepcindia.net
or to
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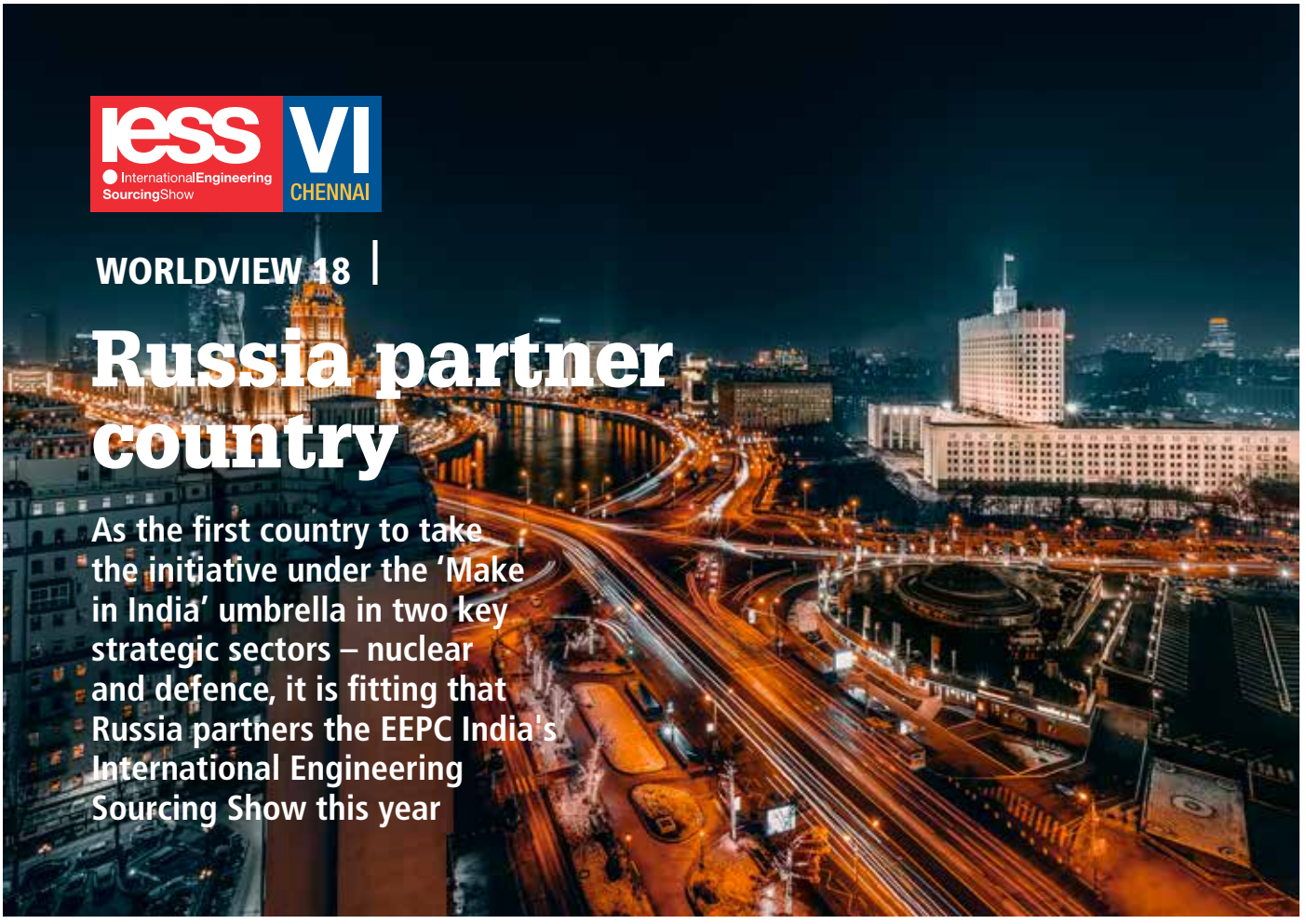
1/1 Wood Street, Kolkata 700 016, India

in this issue



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The 6th edition of EEPC India's flagship event and India's largest engineering sourcing show, IESS, will be held at the Chennai Trade Centre, over 16-18 March 2017. In keeping with the expanding profile of IESS, it has been renamed International Engineering Sourcing Show and Chennai will be host to IESS VI for the first time

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Draft National Steel Policy 2017

India is the third largest producer of steel globally and has a vibrant steel industry. The Ministry of Steel, Government of India has prepared a draft National Steel Policy 2017 aimed at addressing the issues arising from the rapidly changing environment worldwide and in India to make the industry more dynamic and productive

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From the Chairman's Desk

THE first month of 2017 has brought with it the greenshoots of what the year portends to be during its life. The 45th President of the United States of America began the year stating that 'America First' will be the core philosophy of his regime. Amongst the first decisions of the new President has been to walk away from the TPP and threaten to impose import duty as high as 20 percent on countries with whom the USA has a large trade deficit to fund the Mexican wall.

While it may be hazardous to jump to hasty conclusion by just these two measures, it is, however, clear that protectionism will be one of the pillars of American trade policy in the near future. Such an isolationist stance is a continuation of a trend that has begun in various other countries and regional groupings – Brexit and the increasing protectionist tendencies in the European Union – to name a few. The EU, for instance, has been gradually whittling down its GSP regime vis-à-vis countries like India as is evident from the graduation of a range of sectors with effect from 1 January 2017. Similarly, countervailing duties are being levied by most countries against each other resulting in a contraction in global trade. India, too, has not lagged behind and engineering is a great example wherein we have levied a plethora of protective measures such as safeguard duty followed by minimum import price and antidumping duties on primary steel.

Such policies, unfortunately, can be self-defeating and economic theory lends no support to such kneejerk policy-making. The renowned international trade theorist, Prof Jagdish Bhagwati, in his famous article titled 'Directly Unproductive, Profit-seeking (DUP) activities' published in 1982, pointed out that such flawed market interventions lead to directly unproductive rent-seeking behaviour, which stems from a suboptimal form of economic organisation. It is, therefore, critical that the scourge of protectionism sweeping across the world be curbed so that trade and production can find their respective optimal positions nationally as well as globally.

India's merchandise exports grew for the fourth straight month and reached its 21-month high in absolute terms during December 2016. Exports were at $23.8 billion during the last month of 2016 as against $22.6 billion registering 5.72 percent growth mainly due to the rise in oil prices and depreciation of the Indian rupee despite no substantial change in the global demand. Cumulative value of exports during April-December 2016-17 rose to $198.81 billion as against $197.33 billion during the same period last year registering a positive growth of 0.75 percent.

India's engineering exports followed the broader merchandise trend during December 2016 by securing year-on-year growth for the fifth straight month. Overseas shipments of engineering products from India were at $5.7 billion in December 2016 as against $4.7 billion in December 2015 registering a growth of 20.8 percent over the same month last year. The growth was higher in December 2016 as compared to the 11.7 percent recorded in the previous month. The share of engineering exports in India's total merchandise exports was marginally down to 23.5 percent in December 2016 from 24.1 percent in the previous month. Cumulative engineering exports during April-December 2016, however, witnessed a much lower 2.9 percent growth year-on-year due to substantial decline during the months of April and July 2016.

It is... clear that protectionism will be one of the pillars of American trade policy in the near future. Such an isolationist stance is a continuation of a trend that has begun in various other countries and regional groupings

We begin the month of February 2017 by launching our first mega exhibition in Tehran, Iran between February 1 and 3. Our trademark INDEE exhibition will be the 36th such exhibition and more than 90 companies will be showcasing their skills in Tehran. I am sure that our exhibitors will be able to develop a longstanding relationship in that country which hopefully will get a further fillip once the banking channels becoming fully normalised between our countries.

This month's world focus is Russia which is, once again, emerging as a major player in global trade. Russia will also be our Partner Country at the International Engineering Sourcing Show (IESS) being organised by the Ministry of Commerce and Industry and EEPC India in Chennai during 16-18 March 2017. I welcome our readers to join us at IESS 2017 and do hope that this issue of the magazine will help in making up your decision right away.

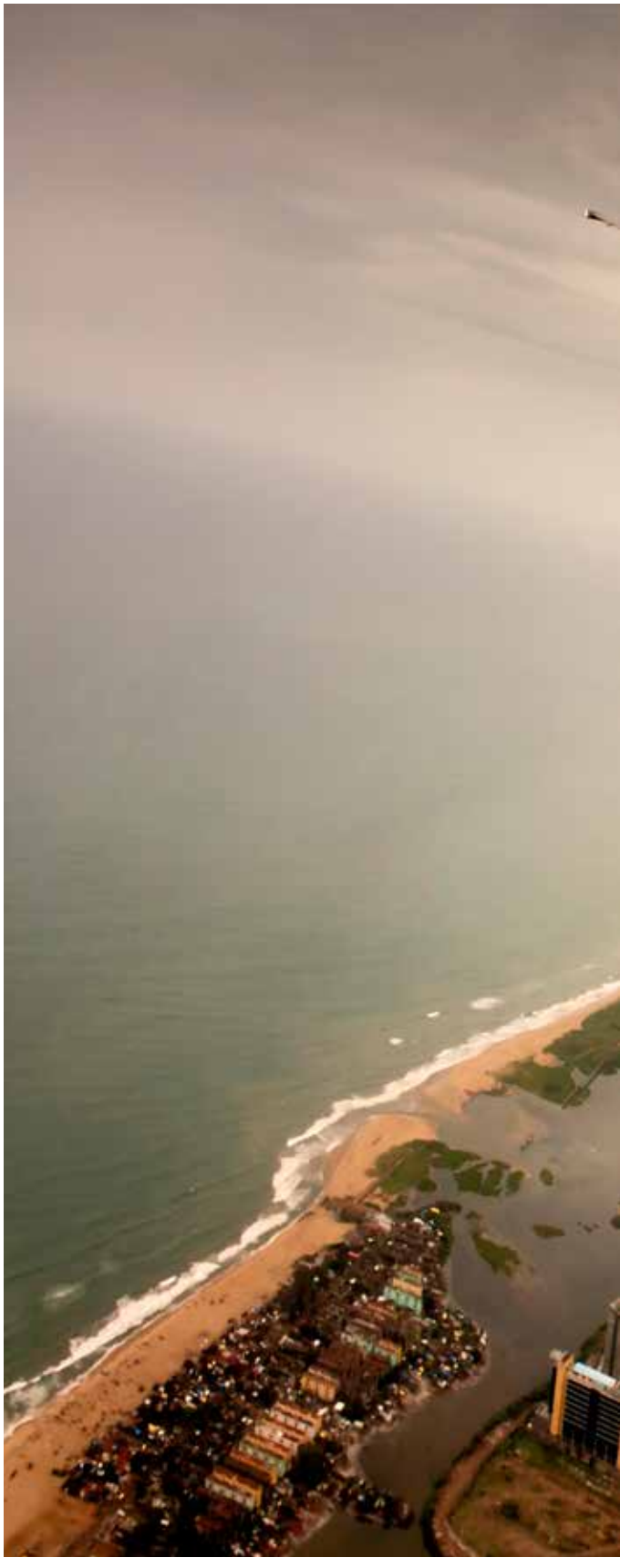
Tarvinder Singh Bhasin

Chennai to host IESS VI

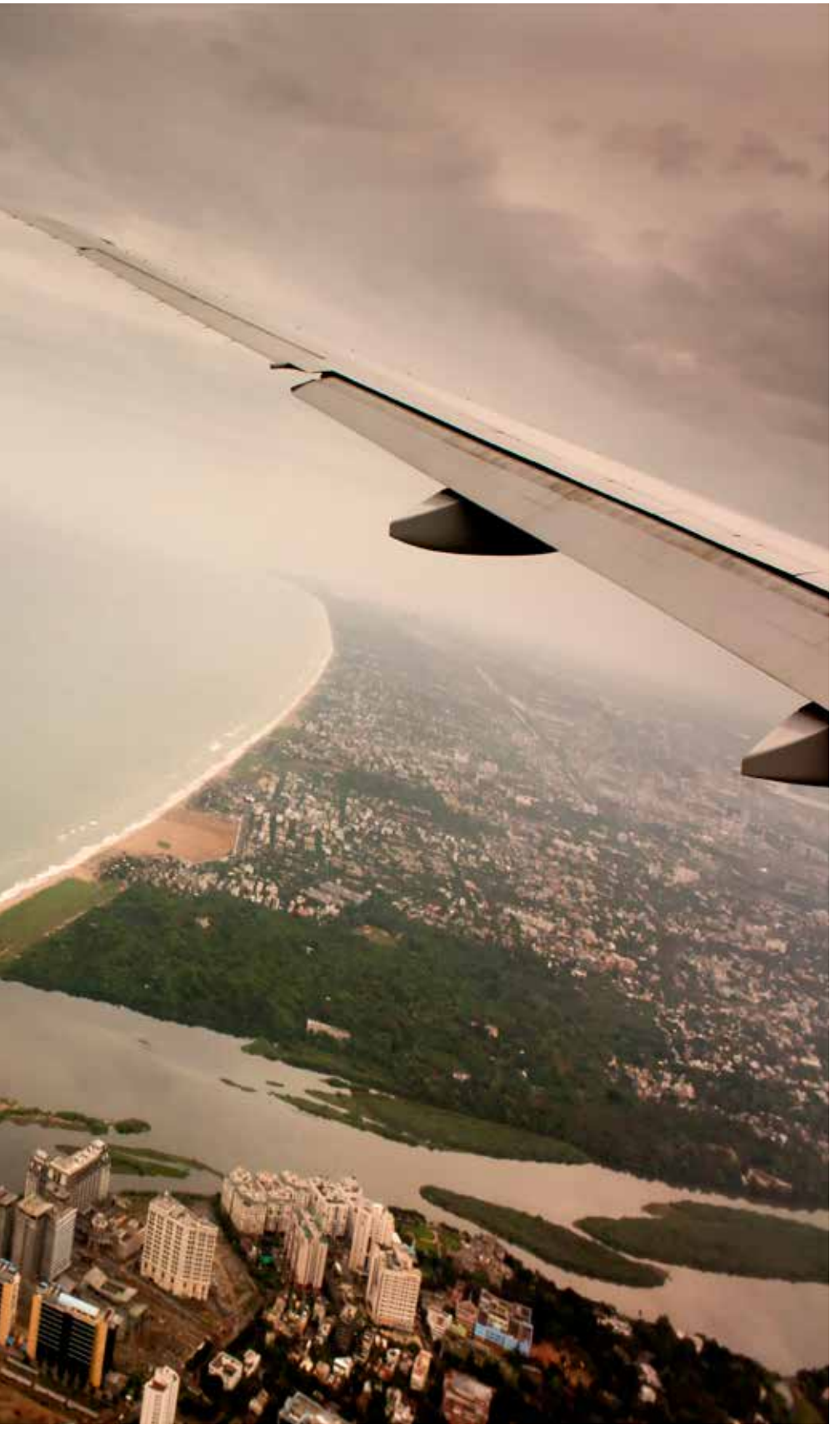
The sixth edition of EEPC India's flagship event and India's largest engineering sourcing show, IESS, will be held at the Chennai Trade Centre, over 16-18 March 2017. In keeping with the expanding profile of IESS, it has been renamed International Engineering Sourcing Show and Chennai will be host to IESS VI for the first time

TECHNOLOGY is the DNA of a successful engineering industry whose performance mirrors the industrial progress of a nation. At least 75 percent of Indian companies are grappling with manufacturing stage 1.0 and 2.0 (commonly known as system of production and distribution) and annually 25 percent of the companies are either planning or executing manufacturing at stages 3.0, 4.0 and 5.0 while the world is talking of Industry 4.0! Indian engineering and manufacturing need to move up the value chain by making a gradual shift to R&D, innovation, development of new products and services, expansion of facilities for achieving the engineering product target of $126 billion by 2019 and also alleviate vulnerability of engineering exports to market downturns. IESS V marked the beginning of Technology Upgradation as one of the prime areas of discussion and EEPC India subsequently has been organising Technology Meets in identified clusters. As we unveil the curtains for the VIth edition of India's largest engineering show – IESS VI which comes in a different global avatar of International Engineering Show, we would advocate 'Smart Technology for Smart Engineering' as the theme this year.

IESS VI – which parades into its 6th edition in March 2017 comes with a booty of Russia as the Partner Country, Tamil Nadu as the Host Sate, Flanders as the Focus Region and, overall with the support of the Union Ministry of Commerce and Industry, Department of Heavy In-



A top view of Chennai



dustry, Department of Scientific & Industrial Research and also SIDBI.

IESS as a brand

IESS is considered to be the largest sourcing show organised within India for the engineering sector, particularly for MSMEs. It recently emerged as the most-favoured global destination for sourcing engineering goods and services from India. As exchange of knowledge and technology development is at the core of efficient production and exports, IESS lays greater emphasis on these two areas. The show has turned out to be a meeting point not only for buyers and sellers but also for exploring and dissemination of available technology in India and outside.

IESS is essentially a partnership event and aims at developing business tie-ups between Indian and overseas companies. Leading multinationals such as ABB and Kubota have been successfully using the IESS exhibition as their sourcing platform. It is essentially a forum for delegates and industry leaders. Many multinationals have operations in India, giving a further boost to manufacturing. B2B meets, exclusive country and technical sessions, vendor development meets, global sourcing meets, and bilateral business forums provide ample opportunity to generate business opportunities.

What makes IESS special is that it helps those engineering SMEs which cannot participate in global sourcing events owing to scarcity of resources. IESS brings in buyers who could potentially source products from SMEs. Furthermore, this event helps local companies to establish connections with their foreign counterparts, to generate business and showcase their innovations, products and technologies.

In addition, the participants, including exhibitors, get a chance to get detailed information and knowledge about specific sectors and can avail opportunities to meet and interact with the sector experts. Another major benefit is that IESS facilitates SMEs to explore local opportunities in terms of

networking, collaboration and sourcing of products and technology. Usually SMEs in one part of India is not aware of markets and opportunities in other parts of India. IESS brings in companies from across India which helps SMEs to explore options for markets, networking and technological collaborations. Our experience over the last four years prove that a large number of Indian companies, particularly small and medium ones have benefitted from their participation in the show.

IESS V – A recap

The fifth edition of the flagship exposition of Indian engineering, IESS 2015, organised by EEPC on behalf of the Ministry of Commerce and Industry, Government of India, during 24-26 November 2015 at the Mumbai Exhibition and Convention Centre, reaffirmed the Council as a favoured destination in the engineering sector. The figures – 450 delegates from 55 countries, in Asia, Africa, Europe, North America and Latin America, 10,000 professional visitors, 97 speakers and 18 sessions made it a paradise of engineering extravaganza! From the feedback received immediately after the show, the exhibitors made 5597 contacts and appointed 24 agents, and received 159 documented enquiries.

The focus then was on six very important industries, keeping in mind the stress on exports – Industrial Supply & Subcontracting, Metal and Shop Floor, Industrial and Electrical Machinery, Automotive Components, Innovation and Technology and Investments and Engineering Project Exports.

Mr Jiri Koliba, Deputy Minister of Industry and Trade, Czech Republic, inaugurated the event. Mr Ravi Capoor, Joint Secretary, Ministry of Commerce and Industry, Government of India, Mr Ashok Kumar Dash, Chief Postmaster-General, Department of Posts, Maharashtra Circle, and EEPC India stalwarts were among the dignitaries present on the occasion. Mr Capoor said, 'As the government's Make in India initiative has caught the imagination of global investors, major conglomerates such as the manufacturers of iPhone and iPad are expected to set up their facilities in the country. Giants including KUBOTA from Japan, iPRO Solutions from the UK, Great Waters from UAE, are all converging in Mumbai at this event of EEPC India to sew up new tie-ups with Indian Firms.'

What makes IESS special is that it helps those engineering SMEs which cannot participate in global sourcing events owing to scarcity of resources. IESS brings in buyers who could potentially source products from SMEs. This event also helps local companies to establish connections with their foreign counterparts, to generate business and showcase their innovations, products and technologies. The participants get a chance to get detailed information and knowledge about specific sectors and can meet and interact with the sector experts

Reinforcing the critical role of the engineering sector in boosting India's exports and the share of manufacturing in the GDP, Mr Capoor said the government has received investment proposals worth over $3.05 billion under Make in India which is being vigorously promoted across the world. 'This is an indication of impetus being provided to the economy. Companies such as Xiamoi, Huawei have already set up manufacturing units in India, while iPhone, iPad manufacturer Foxconn is expected to open a manufacturing unit soon. Recently, Lenovo also announced that it has started manufacturing Motorola smartphones in a plant near Chennai.'

The EEPC India Chairman, Mr TS Bhasin, appreciated the participation of Uttar Pradesh as the Partner State and other state pavilions including Madhya Pradesh, Odisha, Jharkhand to name a few.

Commemorative stamp

The highlight of the inauguration of IESS 2015 was the release of an EEPC 60 Years' Commemorative Stamp by Mr Ashok Kumar Dash, Chief Postmaster-General, Department of Posts, Maharashtra Circle, which lifted this prestigious Council to a different league of honours!

Releasing the stamp, Mr Dash said, 'EEPC India has mirrored the evolution of engineering exports over a span of 60 years when India grew from a meagre $10 billion engineering export nation in 1955 to $70 billion in 2015.' IESS was chosen as the wonderful occasion to celebrate the existence of this renowned Council under the Ministry of Commerce and Industry.

EEPC India is the premier trade and investment promotion organisation in India. It is sponsored by the Ministry of Commerce & Industry, Government of India and caters to the Indian engineering sector. As an advisory body it actively contributes in the policies of Government of India and acts as an interface between the engineering industry and the Government. Set up in 1955, EEPC India now has a membership base of over 13,000 out of whom 60 percent are SMEs. EEPC India organises a large number of promotional activities such as buyer-seller meets (BSM) – both in India and abroad, overseas trade fairs/exhibitions, and India pavilion/information

IESS theme

Intervention, Innovation and Upgradation can paint a new picture of Indian Engineering Industry. Engineering contributes 25 percent of India's exports, but accounts for only 1.5 percent of global engineering exports. India needs to focus on achieving leadership in sub-segments of engineering categories which will improve India's share in global trade from 1.5 percent to 12 percent. India majorly exports medium skill and technology intensive (46 percent) products, while it depends on imports for high skill technology intensive items. Advanced manufacturing technology,

Only companies that are willing to invest in modern automation technologies will be at the head of the pack in the digital race. Many solutions are already available. The smart factory, virtual reality, the Internet of Things: every sector and every field of modern industry is busy pondering the ramifications of these concepts. It is nothing less than the fourth industrial revolution and the digital integration of all industrial processes – from the concept to production to delivery to the customer. All would experience the latest technologies and discuss the issues with key experts. One needs to pick up new stimuli for creating one's own, individual Industry 4.0.

What previously was a vision is now a reality, ready for use in factories. IESS VI will give this trend further momentum – not only with new technologies, but also with the new business models that they enable.

booths in selected overseas exhibitions to demonstrate the capabilities of Indian engineering industry and to provide the overseas buyers with true value as propagated by Brand India. The launching of the Stamp signified the importance and the immense recognition of EEPC's contribution among the manufacturing and engineering fraternity in driving the Indian engineering to the global platform.

The official launch of the Brand India Engineering Campaign with the unveiling of websites for Pumps and Valves and Electrical Machinery added another different dimension to IESS V. Two MoUs were signed – between the Department of Heavy Industry, Government of India and the Ministry of Industry and Trade, Czech Republic, and between EEPC India and FORMIKA (organiser of INNOPROM – 2016) for the participation of EEPC India as the Partner in the 2016 edition of INNOPROM held in Ekaterinburg in July 2016.

The inauguration was followed by 18 sessions including five global sourcing meets by ABB, Yanmar India, IPRO Solutions, KUBOTA and Great Waters, UAE; two bilateral sessions – India-Eurasia and India-UK; CXO Forum; sessions on Digital India, Technology Upgradation for Manufacturing & Exports, Indian Smart Cities – from Vision to Reality; Vendor Development Meets – Indian PSUs and Indian Railways; Start Ups – Promoting Entrepreneurship in India all having inimitable dimensions to it.

For small and medium enterprises it is very important to understand procurement process of government and also big enterprises. To cater to this requirement, three seminars related to SMEs development and two seminars on vendor development were organised during IESS V. It is also pertinent for the SMEs to be aware of challenges and opportunities arising from the new initiatives by the government. To cater to this, three important initiatives of the government of India were discussed during the show. These included Indian Smart Cities, Digital India, and E-procurement.

Importance of region and countries vary with respect to Indian export. Some of the regions are yet to be optimally exploited. A separate session covering Eurasia region was organised during the show. An important highlight of IESS V was the 3rd meeting of Indo-Czech JWG & Workshop on Advanced Manufacturing. Besides, there was also a session on UK-India Business Forum.

IESS V was different from the preceding ones in several aspects. Its focus was on six very important industries that are important not only from the perspective of the domestic market but also from the export angle. Furthermore, there was participation from a larger number of countries. This included over 100 delegates from Europe and CIS alone. In addition, the show witnessed the participation of over 10,000 professional visitors and over 300 companies. Further, dedicated global sourcing meets were organised by involving engineering majors, apart from global vendor development meets, and dedicated UK-India, Czech-India and India-Eurasia business forums. IESS also witnessed the presence of major global R&D & technology providers such as Fraunhofer, European Business Technology Centre to present various avenues for SMEs.

People greet the sunrise in Kanyakumari, the southernmost point of the Indian subcontinent, in Tamil Nadu

HOST STATE – TAMIL NADU

THE Detroit of India in Automobiles, Manchester of India in Textiles, Birthplaces of Mozart of India for Music and the Harbinger of Green Revolution in India – Tamil Nadu is a 'Sparkling State' – an example worth emulating!

Tamil Nadu is one of the 29 states of India. Its capital and largest city is Chennai (formerly known as Madras). Tamil Nadu lies in the southernmost part of the Indian Peninsula and is bordered by the union territory of Puducherry and the South Indian states of Kerala, Karnataka, and Andhra Pradesh. The state shares a maritime border with Sri Lanka.

Tamil Nadu is the 11th-largest state in India by area and the sixth-most populous. The state was ranked sixth among states in India according to the Human Development Index in 2011, with the second-largest state economy after Maharashtra. Tamil Nadu is the second-largest state economy in India with Rs4789 billion ($71 billion) in gross domestic product. Tamil Nadu was ranked as one of the top seven developed states in India based on a Multidimensional Development Index in a 2013 report published by the Reserve Bank of India. Its official language is Tamil, one of the longest-surviving classical languages in the world.

Tamil Nadu is home to many natural resources. In addition, its people have developed and continue classical arts, classical music, and classical literature. Historic buildings and religious sites include Hindu temples of Tamil architecture, hill stations, beach resorts, multi-religious pilgrimage sites, and eight UNESCO World Heritage Sites.

Tamil Nadu is bounded by the Eastern Ghats on the north, by the Nilgiris, the Anamalai Hills, and Kerala on the west, by the Bay of Bengal in the east, by the Gulf of Mannar and the Palk Strait on the southeast, and by the Indian Ocean on the south. The

bordering states are Kerala to the west, Karnataka to the northwest and Andhra Pradesh to the north. To the east is the Bay of Bengal and the state encircles the union territory of Puducherry. The southernmost tip of the Indian Peninsula is Kanyakumari which is the meeting point of the Arabian Sea, the Bay of Bengal, and the Indian Ocean.

The western, southern and the north western parts are hilly and rich in vegetation. The Western Ghats and the Eastern Ghats meet at the Nilgiri hills. The Western Ghats traverse the entire western border with Kerala, effectively blocking much of the rain bearing clouds of the south west monsoon from entering the state. The eastern parts are fertile coastal plains and the northern parts are a mix of hills and plains. The central and the south central regions are arid plains and receive less rainfall than the other regions.

Tamil Nadu has a coastline of 1076 km, which is the country's second-longest coastline. Tamil Nadu's coastline bore the brunt of the 2004 Indian Ocean Tsunami when it hit India, which caused 7793 direct deaths in the state. Tamil Nadu falls mostly in a region of low seismic hazard with the exception of the western border areas that lie in a low to moderate hazard zone; as per the 2002 Bureau of Indian Standards (BIS) map, Tamil Nadu falls in Zones II & III.

Tamil Nadu is mostly dependent on monsoon rains, and thereby is prone to droughts when the monsoons fail. The climate of the state ranges from dry sub-humid to semi-arid. The state has two distinct periods of rainfall: south west monsoon from June to September, with strong southwest winds; and northeast monsoon from October to December, with dominant north east winds.

The annual rainfall of the state is about 945 mm of which 48 percent is through the northeast monsoon, and 32 percent through the southwest monsoon. Since the state is entirely dependent on rains for recharging its water resources, monsoon failures lead to acute water scarcity and severe drought.

Flora and fauna

There are about 2000 species of wildlife that are native to Tamil Nadu. Protected areas provide safe habitat for large mammals including elephants, tigers, leopards, wild dogs, sloth bears, gaurs, lion-tailed macaques, Nilgiri langurs, Nilgiri tahrs, grizzled giant squirrels and sambar deer, resident and migratory birds such as cormorants, darters, herons, egrets, open-billed storks, spoonbills and white ibises, little grebes, Indian moorhen, black-winged stilts, a few migratory ducks and occasionally grey pelicans, marine species such as the dugongs, turtles, dolphins, *Balanoglossus* and a wide variety of fish and insects.

Indian Angiosperm diversity comprises 17,672 species with Tamil Nadu leading all states in the country, with 5640 species accounting for one-third of the total flora of India. This includes 1559 species of medicinal plants, 533 endemic species, 260 species of wild relatives of cultivated plants and 230 red-listed species. The Gymnosperm diversity of the country is 64 species of which Tamil Nadu has four indigenous species and about 60 introduced species. The Pteridophytes diversity of India includes 1022 species of which Tamil Nadu has about 184 species. Vast numbers of bryophytes, lichen, fungi, algae and bacteria are among the wild plant diversity of Tamil Nadu.

Common plant species include the state tree: palmyra palm, eucalyptus, rubber, cinchona, clumping bamboos (*Bambusa arundinacea*), common teak, *Anogeissuslatifolia*, Indian laurel, grewia, and blooming trees like Indian labumusum, ardisia, and solanaceae. Rare and unique plant life includes *Combretumovalifolium*, ebony (*Diospyros nilagrica*), *Habenaria rariflora* (orchid), *Alsophila, Impatiens elegans, Ranunculus reniformis*, and royal fern.

National and state parks

Tamil Nadu has a wide range of Biomes extending east from the south western ghats montane rain forests in the Western Ghats through the South Deccan Plateau dry deciduous forests and Deccan thorn scrub forests to tropical dry broadleaf forests and then to the beaches, estuaries, salt marshes, mangroves, and coral reefs of the Bay of Bengal. The state has a range of flora and fauna with many species and habitats. To protect this diversity of wildlife there are protected areas of Tamil Nadu as well as biospheres which protect larger areas of natural habitat often include one or more National Parks. The Gulf of Mannar Biosphere Reserve established in 1986 is a marine ecosystem with seaweed and sea grass communities, coral reefs, salt marshes and mangrove forests. The Nilgiri Biosphere Reserve located in the Western Ghats and Nilgiri Hills comprises part of adjoining states of Kerala and Karnataka. The Agasthyamalai Biosphere Reserve is in the southwest of the state bordering Kerala in the Western Ghats.

Tamil Nadu is home to five declared National parks located in Anamalai, Mudumalai, Mukurithi, Gulf of Mannar and Guindy located in the centre of Chennai city. Sathyamangalam Tiger Reserve, Mukurthi National Park and Kalakkad Mundanthurai Tiger Reserve are the tiger reserves in the state. Sathyamangalam Tiger Reserve has the largest elephant population in India. Besides these bio reserves, there are many state and central run wild life sanctuaries for tiger, elephant and birds.

Economy

For the year 2014-15 Tamil Nadu's GSDP was Rs9.767 trillion ($150 billion), and growth was 14.86. It ranks third in foreign direct investment (FDI) approvals (cumulative 1991-2002) of Rs225.826 billion ($5000 million), next only to Maharashtra and Delhi constituting 9.12 percent of the total FDI in the country. The per capita income in 2007-08 for the state was Rs72,993 ranking third among states with a population over 10 million and has steadily been above the national average.

Agriculture

Tamil Nadu has historically been an agricultural state and is a leading producer of agricultural products in India. In 2008, Tamil Nadu was India's fifth biggest producer of rice. The total cultivated area in the state was 5.60 million hectares in 2009-10.The Cauvery delta region is known as the Rice Bowl of Tamil Nadu. In terms of production, Tamil Nadu accounts for 10 percent in fruits and 6 percent in vegetables, in India. Annual foodgrains production in the year 2007-08 was 10035,000 mt.

The state is the largest producer of bananas, turmeric, flowers, tapioca, the second-largest producer of mango, natural rubber, coconut, groundnut and the third largest producer of coffee, sapota, tea and sugarcane. Tamil Nadu's sugarcane yield per hectare is the highest in India. The state has 17,000 hectares of land under oil palm cultivation, the second highest in India.

Textiles and leather

Tamil Nadu is one of the leading states in the textile sector and it houses the country's largest spinning industry accounting for almost 80 percent of the total installed capacity in India. When it comes to yarn production, the state contributes 40 percent of the total production in the country. There are 2614 hand processing units (25 percent of total units in the country) and 985 power processing units (40 percent of total units in the country) in Tamil Nadu. According to official data, the textile industry in Tamil Nadu accounts for 17 percent of the total invested capital in all the industries. Coimbatore is often referred to as the 'Manchester of South India' due to its cotton production and textile industries Tirupur is the country's largest exporter of knitwear for its cotton production. The region around Coimbatore, Tirupur, Palladam, Karur and Erode is referred to as the 'Textile Valley of India' Gobichettipalayam, Pollachi, Udumalpet, Theni and Vedasandur are known for its cotton spinning mills. Gobichettipalayam is a prominent producer of white silk with the country's first automated silk reeling unit present here. Kanchipuram and Arani are world-famous for their pure silk saris and hand loom silk weaving industries.

The state accounts for 70 percent of leather tanning capacity in India and 38 percent of leather footwear and components. The exports from Tamil Nadu are valued at about $762 million, which accounts for 42 percent of Indian leather exports.

Automobiles

Tamil Nadu has seen major investments in the automobile industry over many decades manufacturing cars, railway coaches, battle-tanks, tractors, motorcycles, automobile spare parts and accessories, tyres and heavy vehicles. Chennai is known as the Detroit of India. Major global automobile companies including BMW, Ford, Robert Bosch, Renault-Nissan, Caterpillar, Hyundai, Mitsubishi Motors, and Michelin as well as Indian automobile majors such as Mahindra & Mahindra, Ashok Leyland, Hindustan Motors, TVS Motors, Irizar-TVS, Royal Enfield, MRF, Apollo Tyres, TAFE Tractors, DaimlerChrysler AG Company also invested Rs4 billion for establishing new plant in Tamil Nadu. Karur is a hub for bus body building industries.

Heavy industries and engineering

Tamil Nadu is one of the highly industrialised states in India. Over 11 percent of the S&P CNX 500 conglomerates have corporate offices in Tamil Nadu. Many heavy engineering and manufacturing companies are located in and around the suburbs of Chennai. Bharat Heavy Electricals, one of India's largest electrical equipment manufacturing companies, has manufacturing plants at Tiruchirapalli and Ranipet. India's leading steel producer, the state-owned Steel Authority of India has a steel plant in Salem. Sterlite Industries has a copper smelter at Tuticorin and an aluminium plant in Mettur. The Chennai Petroleum Corporation is a state-owned oil and gas corporation headquartered in Chennai, and owns refineries at Manali and Panangudi. The state government owns the Tamil Nadu Newsprint and Papers in Karur. Jointly with the Tata Group, the state owns the world's sixth largest manufacturer of watches, under the brand name of Titan, at Hosur. A number of large cement manufacturers, including the Chettinad Group, Ramco Cements, Tancem, the Dalmia Group, UltraTech Cements and ACC are present across the state.

Coimbatore is also referred to as 'the Pump City' as it supplies two-thirds of India's requirements of motors and pumps. The city is one of the largest exporters of wet grinders and auto components and the term 'Coimbatore Wet Grinder' has been given a Geographical indication.

Electronics and software

Electronics manufacturing is a growing industry in Tamil Nadu, with many international companies like Nokia, Flextronics, Motorola, Sony-Ericsson, Foxconn, Samsung, Cisco, Moser Baer, Lenovo, Samsung, Dell, Sanmina-SCI, Texas Instruments having chosen Chennai as their south Asian manufacturing hub. Products manufactured include circuit boards and cellular phone handsets. Tamil Nadu is the second largest software exporter by value in India.

Culture

Tamil Nadu has a long tradition of venerable culture. Tamil Nadu is known for its rich tradition of literature, art, music and dance which continue to flourish today. Tamil Nadu is a land most known for its monumental ancient Hindu temples and Bharatnatyam. Unique cultural features like Bharatnatyam dance, Tanjore painting, and Tamil architecture were developed and continue to be practised in Tamil Nadu.

Literature

Tamil written literature has existed for over 2000 years. The earliest period of Tamil lit-

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erature, Sangam literature, is dated from circa 300 BCE-300 CE. It is the oldest Indian literature amongst all others. The earliest epigraphic records found on rock edicts and hero stones date from around the 3rd century BCE.

Most early Tamil literary works are in verse form, with prose not becoming more common until later periods. The Sangam literature collection contains 2381 poems composed by 473 poets, some 102 of whom remain anonymous. Sangam literature is primarily secular, dealing with everyday themes in a Tamilakam context. The Sangam literature also deals with human relationship and emotions. The available literature from this period was categorised and compiled in the 10th century into two categories based roughly on chronology. The categories are: Pathinenmaelkanakku (The Major Eighteen Anthology Series) comprising Ettuttokai (The Eight Anthologies) and the Pattupattu (Ten Idylls) and Pathinenkilkanakku (The Minor Eighteen Anthology Series).

Much of Tamil grammar is extensively described in the oldest known grammar book for Tamil, the *Tolkāppiyam*. Modern Tamil writing is largely based on the 1000 BCE grammar *Naṉṉūl* which restated and clarified the rules of the *Tolkāppiyam*, with some modifications. Traditional Tamil grammar consists of five parts, namely *eḻuttu, sol, poruḷ, yāppu, aṇi*. Of these, the last two are mostly applied in poetry. Notable example of Tamil poetry include the Tirukkural written by *Tiruvalluvar* 2000 years ago.

In 1578, the Portuguese published a Tamil book in old Tamil script named Thambiraan *Vanakkam*, thus making Tamil the first Indian language to be printed and published. *Tamil Lexicon*, published by the University of Madras, is the first among the dictionaries published in any Indian language. During the Indian freedom struggle, many Tamil poets and writers sought to provoke national spirit, social equity and secularist thoughts among the common man, notably Subramanya Bharathi and Bharathidasan.

Two women paint a pattern outside their home to celebrate the festival of Pongal

Festivals and traditions

Pongal, also called *TamizharThirunaal* (festival of Tamils) or Makara Sankranti elsewhere in India, a four-day harvest festival is one of the most widely celebrated festivals throughout Tamil Nadu. The Tamil language saying Thai *Pirandhal Vazhi Pirakkum* – literally meaning, the birth of the month of Thai will pave way for new opportunities – is often quoted with reference to this festival. The first day, Bhogi Pongal, is celebrated by throwing away and destroying old clothes and materials by setting them on fire to mark the end of the old and emergence of the new. The second day, Surya Pongal, is the main day which falls on the first day of the tenth Tamil month Thai (14 or 15 January in western calendar). The third day, Maattu Pongal, is meant to offer thanks to the cattle, as they provide milk

A dancer performing Bharatnatyam, a classical dance form that originated from Tamil Nadu

and are used to plough the lands. Jallikattu, a bull taming contest, marks the main event of this day. Alanganallur is famous for its Jallikattu contest usually held on 3rd day of Pongal. During this final day, Kaanum Pongal – the word 'kaanum', means 'to view' in Tamil.

The first month in the Tamil calendar is Chittirai and the first day of this month in mid-April is celebrated as Tamil New Year. Aadi Perukku is celebrated on the 18th day of the Tamil month Aadi, which celebrates the rising of the water level in the river Kaveri. Apart from the major festivals, in every village and town of Tamil Nadu, the inhabitants celebrate festivals for the local gods once a year and the time varies from place to place. Most of these festivals are related to the goddess Maariyamman, the mother goddess of rain. Other major Hindu festivals including Deepavali (Death of Narakasura), Ayudha Poojai, Saraswathi Poojai (Dasara), Krishna Jayanthi and Vinayaka Chathurthi are also celebrated. Id-ul-fitr, Bakrid, Milad un Nabi, Muharram are observed by Muslims whereas Christmas, Good Friday, Easter are observed by Christians in the state. Mahamagam a bathing festival at Kumbakonam in Tamil Nadu is celebrated once in 12 years. People from all the corners of the country come to Kumbakonam for the festival. This festival is also called the Kumbhmela of South.

Music

The kings of ancient Thamizhagam created

sangams for IyalIsai Nadagam (literature, music and drama). Music played a major role in sangams. Music in Tamil Nadu had different forms. In villages where farming was the primary occupation, women who worked in the fields used to sing kulavai songs. Odhuvars, Sthanikars or Kattalaiyars offer short musical programmes in the temples by singing the devotional Thevaram songs. In sharp contrast with the restrained and intellectual nature of Carnatic music, Tamil folk music tends to be much more exuberant. Popular forms of Tamil folk music include the Villuppāṭṭu, a form of music performed with a bow, theurumeemellam or naiyandimellam which incorporates the use of the urumee and the Nāṭṭuppuṟappāṭṭu, ballads that convey folklore and folk history.

Carnatic music is the classical music form of southern India. This is one of the world's oldest and richest musical traditions. The Trinity of Carnatic music Tyagi, Muthuswami Dikshitar and Syama Sastri were from Tamil Nadu. Tyagi *Aaradhanai* (worship) takes place every year in the month of Marghazhi in Thiruvaiyaru all Carnatic musicians render their obeisance to Saint Thyagarajar by singing his compositions. The composers belonging to the Tamil Trinity, namely Muthu Thandavar, who was born around 1560, ArunachalaKavi (1712-79) and MarimutthuPillai (1717-87) composed hundreds of devotional songs in Tamil and helped in the evolution of Carnatic music. Chennai hosts a large cultural event, the annual Madras Music Season during December-January, which includes performances by hundreds of artists all over the city.

In terms of modern cine-music, Ilaiyaraaja was a prominent composer of film music in Tamil cinema during the late-70s and 80s. His work highlighted Tamil folk lyricism and introduced broader western musical sensibilities to the south Indian musical mainstream. Tamil Nadu is also the home of the double Oscar Winner AR Rahman who has composed film music in Tamil, Telugu, Hindi films, English and Chinese films. He was referred to by Time magazine as The Mozart of Madras.

Arts and dance

Tamils have a large number of folk dances. These are performed for every possible occasion, to celebrate the arrival of seasons, birth of a child, weddings and festivals. Tamil dance is closely intertwined with the Tamil theatrical tradition.

The most celebrated of these dances is the karakattam. In its religious form, the dance is performed in front of an image of the goddess Mariamman. The dancer bears on his or her head a brass pot filled with uncooked rice, decorated with flowers and surrounded by a bamboo frame, and tumbles and leaps to the rhythm of a song without spilling a grain. Karakattam is usually performed to a special type of song known as temmanguppāṭṭu a folk song in the mode of a lover speaking to his beloved, to the accompaniment of a nadaswaram and melam.

Other Tamil folk dances include mayilāṭṭam, where the dancers tie a string of peacock feathers around their waist; ōyilāttam, danced in a circle while waving small pieces of cloth of various colours; poikkalkuthiraiyaaṭṭam, where the dancers use dummy horses; manattam, where the dancers imitate the graceful leaping of deer; paraiyāṭṭam, a dance to the sound of rhythmical drumbeats, and thīppandāṭṭam, a dance involving playing with burning wooden torches.

Bharatnatyam is a classical dance form originating from Tamil Nadu. Prior to the colonial period, it used to be performed in Hindu temples by Devadasis. In this form it is also called sadir or chinnamelam. Many of the ancient sculptures in Hindu temples are based on Bharatnatyam dance postures. Bharatnatyam is a traditional dance-form known for its grace, purity, tenderness, and sculpturesque poses. It continues to be a popular dance style at present times and is practised by male and female dancers all over India. Terukkuttu or Kattaikkuttu is a traditional form of Tamil street theatre folk dance/drama.

Film industry

Tamil Nadu is also home to the Tamil film industry also known as Kollywood, which released the most number of films in India in 2013. The term Kollywood is a portmanteau of Kodambakkam and Hollywood. Tamil cinema is one of the largest centres of film production in India. In Tamil Nadu, cinema ticket prices are regulated by the government.

Cuisine

Tamil cuisine is typical of south Indian cuisine, in that rice and rice-derived dishes form the major portion of a diet. Sweet items that are native to Tamil Nadu are athirasam, Chakkarai Pongal and Kuli Paniyaram. Salem is renowned for its unique mangoes, Madurai is the place of origin of milk dessert Jigarthanda while Palani is known for its Panchamirtham.

Tourism

The tourism industry of Tamil Nadu is the largest in India, with an annual growth rate of 16 percent. Tourism in Tamil Nadu is promoted by Tamil Nadu Tourism Development Corporation (TTDC), a Government of Tamil Nadu undertaking. According to Ministry of Tourism statistics, 4.66 million foreign and 327.6 million domestic tourists visited the state in 2014 making it the most visited state in India both domestic and foreign tourists. The state boasts some of the grand Hindu temples built in Dravidian architecture. The Brihadishwara Temple in Thanjavur and Gangaikonda Cholapuram built by the Cholas, the Airavateswara temple in Darasuram and the Shore Temple, along with the collection of other monuments in Mahabalipuram (also called Mamallapuram) have been declared as UNESCO World Heritage Sites.

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An aerial view of Moscow

FLANDERS – THE FOCUS REGION

RUSSIA PARTNER COUNTRY IN IESS VI

AS THE FIRST COUNTRY TO TAKE THE INITIATIVE UNDER THE 'MAKE IN INDIA' UMBRELLA IN TWO KEY STRATEGIC SECTORS – NUCLEAR AND DEFENCE – IT IS FITTING THAT RUSSIA PARTNERS THE INTERNATIONAL ENGINEERING SOURCING SHOW

AS the first country to take the initiative under the 'Make in India' umbrella in two key strategic sectors – nuclear and defence, it is fitting that Russia partners International Engineering Sourcing Show

Russia was the first country to have agreed to take the initiative under the 'Make in India' umbrella in two key strategic sectors – nuclear and defence. This year, the sixth edition of the largest Indian engineering sourcing show and EEPC India's flagship event, IESS, is back in a new avatar – International Engineering Sourcing Show – to be held in Chennai over 16-18 March 2017 with Russia as the Partner Country.

India and Russia have shared a very stable diplomatic and political relationship from the time of the erstwhile USSR. However, trade between the two countries has not reached its potential. During fiscal 2014-15, India's total trade with Russia stood at $6.3 billion, of which India's export to Russia was $2.09 billion and import from Russia was to the tune of $4.24 billion. The overall trade balance remained positive towards Russia.

During the same year engineering exports to Russia remained at $0.7 billion, accounting for almost 33 percent of the total export to Russia. Engineering exports between India and Russia grew at 18 percent between 2013-14 and 2014-15. Though India's share in Russia's total engineering import is still not substantial, there is tremendous scope to tap the existing potential.

Among the CIS nations, India has the strongest economic relations with Russia and these two nations are now considering an India-Eurasian Economic Union Free Trade Agreement. Bilateral ties between Russia and India have been unique since India's independence, gradually evolving into what is now called a special and privileged strategic partnership. A record 16 agreements/MoUs signed by the two countries in December 2015 underscore the mutual urge of both the nations for comprehensive bilateral cooperation. India-Russia ties have acquired a qualitatively new character with enhanced levels of cooperation in almost all areas of the bilateral relationship including political, security, trade and economy, defence, science and technology and culture. The joint Russian-Indian statement, 'Through Relations of Trust to New Cooperation Horizons,' sets new ambitious goals for mutual cooperation.

The need of the hour is to involve Russian businesses in India's import replacement programme Make in India as an additional opportunity for joint ventures, technology transfer and production of high-value-added goods. Strengthening of multifaceted cooperation between Russian regions and Indian states is viewed as a priority. Partnerships between Moscow and New Delhi, St. Petersburg and Mumbai, Kazan and Hyderabad, Astrakhan and Gujarat, Samara and Karnataka, just to name a few, constitute a solid basis for expanding economic cooperation.

Geographic distances are no longer a barrier when both partners are driven by mutual interest – the 7200 km-long North-South International Transport Corridor will connect South and Central Asia, the Persian Gulf and Eastern Europe and help to increase the bilateral volume of trade. The importance of the corridor goes beyond the framework of goods movement as it has huge geostrategic significance in the context of comprehensive regional connectivity assuring energy and economic security to entire Central Asia.

A big step forward has been made to facilitate B2B contacts via a friendlier visa regime. During the recent summit both the nations signed the protocol on simplifying travel requirements for certain categories of citizens. Businessmen can now visit Russia and India on direct invitations from their partners.

Make in India is a major new national programme of the Government of India designed to facilitate investment, foster innovation, enhance skill development, protect intellectual property and build best-in-class manufacturing infrastructure in the country. India and Russia are working together on a general agreement on collaboration in science and technology, which will enable the countries to exchange ideas on technology, scientists and students. It is focused upon several technologies related to energy, green technologies, supercomputing in big data, etc. The two countries have entered into an agreement to set up the Russian-Indian Association of Universities. The Russian Science Foundation (RSF) and the Indian Ministry of Science and Technology have announced that they would jointly sponsor an international team competition

THE 16 AGREEMENTS/MEMORANDA OF UNDERSTANDING WHICH WERE SIGNED BY INDIA AND RUSSIA IN DECEMBER 2015

1. Simplification of requirements for mutual travels of certain categories of citizens
2. Mutual Travel regime for holders of Diplomatic and Official Passports
3. Cooperation in the field of Helicopter Engineering
4. Plan for Cooperation for combating Customs violations in 2015-2017
5. 'Rosatom' for localisation of Manufacturing in India for Russian –Designated Nuclear Reactor Units
6. MoU on technical cooperation in railway sector
7. MoU regarding construction of solar energy plants in India
8. MoU for development of Centre of Excellence for heavy engineering design at HEC
9. MoU for upgradation and modernisation of HEC's manufacturing facilities
10. MoU on Cooperation in the field of Broadcasting
11. Tripartite MoU between C-DAC, IISc Bangalore and Lomonosov Moscow State University (MSU)
12. Tripartite MoU between C-DAC OJSC, 'Glonass' and Glonass Union
13. MoU in the field of investment cooperation in the Russian Far East
14. MoU for cooperation for geologic survey, exploration and production of hydrocarbons onshore and on the continental shelf of Russian Federation
15. Confirmation of successful completion of the 1st stage pre-completion actions in relation to the creation of a JV in JSC Vankor Neft
16. MoU for Cooperation for geologic survey, exploration and production of hydrocarbons onshore the Russian Federation.

in the field of scientific research.

Participation of Russia in IESS VI as Partner Country will definitely serve as a milestone in the bilateral relations between the two nations.

Regarding Industry 4.0, the new industrial revolution – Russian enterprises are on top of the game and India can be part of this process. Industry 4.0, the merger of the real and the virtual world, provides further scope for Russian-Indian collaboration: Russia's world-class manufacturing and India's famous IT engineering expertise make a fabulous match. Industry 4.0 offers great potential for a win-win partnership.

RUSSIA INDIA BILATERAL RELATIONS

BILATERAL relations between India and the CIS region have remained cordial since the inception of the region in 1991 following the disintegration of erstwhile USSR. This region is strategically very important for India. However, considering the current trend, it becomes evident that trade relations have not improved much except with Russia and Ukraine. Total trade with CIS countries has increased by about 45 percent in the last five years but 81 percent of this share has gone to Russia and Ukraine. Bilateral trade between India and CIS was valued around $12 billion during the year 2014, which do not at all reflect the inherent potential for trade and investments. Engineering exports to CIS declined by nearly 45 percent during the first half of fiscal 2015-16. Overseas shipment of engineering products to CIS region declined to $260.89 million during the first six months of 2015-16 from $473.97 million during the same period last year.

Enhancing trade and economic cooperation between India and Russia is a key priority for the two governments. During the 15th India-Russia Annual Summit, a target was set of $30 billion bilateral trade by 2025. It is expected that the level of mutual investments by then will be over $15 billion

Table1: India-Russia trade trend ($ million)

Category	2011	2012	2013	2014	2015	CAGR
Export of all products	1893.90	2144.77	2418.96	2217.47	1610.03	-0.04
Export of engineering products	620.63	779.11	808.92	763.77	476.73	-0.06
% share of engineering products	32.77	36.33	33.44	34.44	29.61	
Import of all products	4050.98	4602.16	3814.12	4207.63	4519.01	0.03
Import of engineering products	1166.18	1678.23	1213.45	955.42	1176.31	0.00
% share of engineering products	28.79	36.47	31.81	22.71	26.03	
Total trade all products	5944.88	6746.93	6233.08	6425.1	6129.04	0.01
Total trade engineering products	1786.81	2457.33	2022.37	1719.18	1653.04	-0.02

Source: ITC Trade Database

Table2: Top 5 panels of engineering products export to Russia from India, 2014 ($ million)

Panel	Import from world	Import from India	% share of India
Motor vehicle/cars	70,101.84	19.19	**0.03**
Industrial machinery for dairy, agriculture, food processing, textiles, paper, chemicals, etc	51,388.65	911.29	**1.77**
Medical and scientific instruments	37,929.20	85.54	**0.23**
Electric machinery and equipment	31,852.80	117.88	**0.37**
Products of iron and steel	28,784.12	150.24	**0.52**

Source: ITC Trademap Database

Table3: Top 5 export partners of Russia, 2014 ($ million)

Country	Imports	% share in World imports	Rank
China	31,824.68	21.17	1
Germany	20,931.49	13.93	2
Japan	9,384.25	6.24	3
USA	8,792.73	5.85	4
Italy	7,313.92	4.87	5
India	**804.77**	**0.54**	**30**

Source: ITC Trademap Database

each way. Bilateral trade during in 2014 amounted to $9.51 billion, with Indian exports of $3.17 billion (an increase of 2.6 percent over 2013) and imports from Russia of $6.34 billion (decline of 9.2 percent over 2013). Major items of export from India include pharmaceuticals, miscellaneous manufactures, iron and steel, apparels, tea, coffee and tobacco. Major items of import from Russia include defence and nuclear power equipment, fertilisers, electrical machinery, steels and diamonds. During 2015, India's total trade with Russia stood at $6.12 billion, of which India's export to Russia was $1.6 billion and import from Russia was to the tune of $4.52 billion.

During the same year engineering exports to Russia remained at $0.4 billion, accounting for almost 29.61 percent of the total export to Russia. Engineering exports between India and Russia declined from 34.44 percent in 2014 to 29.61 percent in 2015. However, India's share in Russia's total engineering import is still not substantial and has tremendous scope to tap the existing potential.

Indian investments in Russia are estimated to be about $8 billion which include Imperial Energy Tomsk, Sakhalin I, Volzhsky Abrasive Works Volgograd, and Commercial Indo bank. Russian investments in India total about $3 billion, including Kamaz Vectra in Hosur, Shyam Sistema Telecom Ltd, Sberbank and VTB.

Russia is one of the world's leading producers of oil and natural gas, and is also a top exporter of metals such as steel and primary aluminium. The major engineering products imported by Russia include motor vehicles and cars, industrial machinery, medical and scientific instruments, electric machinery and equipment and products of iron and steel. India has forte in all these products but has a meagre share in Russia's total import.

The top importers of Russia include China, USA and Japan. India comes at the 30th position among the Russian importers. India, therefore, has tough competitors in Russia's market and needs to overcome all the barriers in order to emerge as an important trade partner of Russia. Though India figures at a high rank in the list of importers of Russia, it has scope of increasing its presence in Russia. In the present scenario due to certain sanctions and the problem with Ukraine, countries like USA, Germany and

A Russian oil well

Japan are reducing their trade with Russia. India can take advantage of this situation to increase trade and make its presence felt in Russia.

The Inter-Governmental Commission on Trade, Economic, Scientific, Technological and Cultural Cooperation (IRIGC-TEC) is the apex G2G forum to review economic cooperation. It reviews sectoral cooperation under working groups on trade and economic cooperation, priority investments, modernisation and industrial cooperation (sub-groups on civil aviation, mining, fertiliser, and modernisation), outstanding issues, energy and energy efficiency, science and technology, communications and IT, tourism and culture, and subgroups on banking and financial matters and on conservation of tigers and leopards. The 21st session of the IRIGC-TEC was held in Moscow on 20 October 2015.

The India-Russia Forum on Trade and Investment and India-Russia CEOs' Council are the two primary mechanisms to promote direct bilateral business-to-business contacts between India and Russia. Mechanisms such as India-Russia Business Council (partnership between FICCI of India and CCI of Russia), India-Russia Trade, Investment and Technology Promotion Council (partnership between CII of India and RUIE of Russia), India-Russia Business Dialogue (partnership between CII of India and Russia's Business Council for Cooperation with India) and India-Russia Chamber of Commerce (with focus on SMEs) supplement the efforts to build direct business-to-business ties. The 8th India-Russia Forum on Trade and Investment was held in New Delhi on 5 November 2014. During the 15th St. Petersburg International Economic Forum (SPIEF) in June 2015, India and Eurasian Economic Union (EaEU) signed a joint statement to undertake joint feasibility study for the FTA between India and EaEU.

Hydrocarbons is an active area for exploring cooperation between the two countries. In May 2014, ONGC and Rosneft signed an MoU for bilateral cooperation in subsurface surveys, exploration, appraisal and hydrocarbons production in the offshore Arctic region of Russia. In June, a Russian company Gazprom International signed an MoU with Oil India Limited for cooperation in the oil and gas sector which include joint exploration, training, development of oil fields and sharing of information. In December 2014, Rosneft signed anMoU regarding the possibility of a long-term contract with the Essar group for supply of crude oil. In July 2015, Essar and Rosneft announced the signing of a preliminary agreement to acquire 49 percent stakes in Esssar'sVadinar Oil refinery and supply of crude oil to Essar over

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2016's vital statistics

219 Delegates attended

99 Companies represented

10 Countries represented

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10 years. In September 2015, OVL signed an agreement with Rosneft to acquire 15 percent stakes in Vankorneft project. In 2015 Gazprom has delivered 5 consignments of liquefied natural gas to India.

It is important to mention the strategic cooperation in the diamond industry. Russia is the largest diamond producer in the world with 27 percent of global extraction, while India is the leader in cutting diamonds with 65 percent of the trade. Almost half of Russian feedstock is delivered to India. In 2015 Alrosa increased the number of long-term contracts from nine to 12. To expand cooperation, a special customs zone is being set up at the Mumbai diamond exchange.

There are opportunities galore in other promising spheres such as aircraft building, engineering, automotive industry, metallurgy, pharmaceuticals, chemical industry and many others. Special emphasis is given to promotion of Russian investments in India through major infrastructure projects like Smart Cities and Transport Corridors, as well as in telecom, power and road construction. Much effort to take our cooperation forward is made by the Russian-Indian Intergovernmental Commission, which met on 20 October 2015 in Moscow.

MAKE IN INDIA INITIATIVES

Manufacturing Sector

Make in India is a major new national programme of the Government of India designed to facilitate investment, foster innovation, enhance skill development, protect intellectual property and build best in class manufacturing infrastructure in the country. The primary objective of this initiative is to attract investments from across the globe and strengthen India's manufacturing sector. Innovation and technology are two important components for driving India's engineering exports to compete globally. Make in India campaign aims at facilitating investments, encouraging innovation and building high-class manufacturing infrastructure to boost manufacturing activities in key sectors including automobile, auto components, electronics and electricals, capital goods, railways, aerospace and defence. It also intends to eliminate obstacles in areas such as land acquisition, infrastructure bottlenecks, labour regulation, licensing and taxation, the Indian government has set a clear objective of enabling India to become a global manufacturing hub in the years ahead. Achieving this objective will not be easy, and it is important to understand the challenges being faced by Indian manufacturing businesses as they globalise their operations and face up to international competition. High raw material costs, poor quality perception of Indian products and limited access to R&D and technology are key challenges faced by Indian manufacturers in the context of their exports. International collaborations for various objectives like technological assistance, marketing facilitation, increasing exports, etc are required. EEPC India took an initiative to explore opportunities in Russia for Indian manufacturing industry.

India and Russia are working together on a 'general agreement' on collaboration in science and technology, which will enable the countries to exchange ideas on technology, scientists and students. It's a general agreement (between Russia and India) related to collaboration in science and technology. It is focused upon several technologies related to energy, green technologies, supercomputing in big data, etc. The two countries have entered into an agreement to set up the Russian-Indian Association of Universities. The Russian Science Foundation (RSF) and the Indian Ministry of Science and Technology have announced that they would jointly sponsor an international team competition in the field of scientific research.

Energy security

Other than Japan, Russia is the only nation to have a mechanism for annual ministerial-level defence reviews with India. Considering India's growing need for energy security, it is essential that India aligns with Russia for its energy needs, which has abundance of oil and natural gas reserves and can share resources and technology for civil nuclear energy to meet India's energy demands. On the other hand, the Russian economy has been crippled because of US-EU sanctions post the Ukraine crisis, falling price of oil, which is Russia's major source of income, and the impact of fast depreciating Russian currency, leading to outward capital flight. That is driving Russia towards exploring new markets for its energy and trade relationships in Asia.

Strategic partnership

It is a historic fact that diplomatic relations between India and Russia were established a few months before India became officially independent. Since then, nothing clouded Soviet-Indian and then Russian-Indian friendship. Relations with Russia are a key pillar of India's foreign policy, and Russia has been a longstanding time-tested partner of India.

The Declaration on Strategic Partnership of 2000 paved the way to a brand new quality of interaction imparting a truly global dimension to the partnership of two leading world powers. India-Russia ties have acquired a qualitatively new character with enhanced levels of cooperation in almost all areas of the bilateral relationship including political, security, trade and economy, defence, science and technology and culture. Under the Strategic Partnership, several institutionalised dialogue mechanisms operate at both political and official levels to ensure regular interaction and follow-up on cooperation activities.

In December 2010, the Strategic Partnership was elevated to the level of a Special and Privileged Strategic Partnership. At a Summit meeting in 2014, the two countries emphasised that the time had come for a significant upgrade of bilateral cooperation to elevate the friendship between the countries to a new level. The Summit resulted in

A pipeline crosses a Gazprom owned and operated natural gas field in Siberia in Yamberg, Russia

a historical joint statement 'Druzhba-Dosti: a Vision for Strengthening Indian-Russian Partnership over the Next Decade' – a roadmap that we will follow for the next decade.

The year 2015 saw an unprecedented intensity of high level visits and contacts. The end of the year was crowned by the traditional and very fruitful summit in Moscow, which brought about strategically important agreements in the fields of nuclear energy, oil and gas, and defence. The joint Russian-Indian statement, 'Through Relations of Trust to New Cooperation Horizons,' set new ambitious goals for mutual cooperation.

The annual Summit meeting between the Prime Minister of India and the President of the Russian Federation is the highest institutionalised dialogue mechanism under the Strategic Partnership between India and the Russian Federation. So far 16 Annual Summit meetings have taken place alternatively in India and Russia.

There are regular high-level interactions between the two countries. Two Inter-Governmental Commissions – one on Trade, Economic, Scientific, Technological and Cultural Cooperation (IRIGC-TEC), and another on Military Technical Cooperation (IRIGC- MTC) meet annually. The third session of the India-Russia Inter-Parliamentary Commission was held in 2015. In April 2015, India participated in the 4th Moscow Conference on International Security; in May in the St Petersburg International Legal Forum; and in the 15th St. Petersburg International Economic Forum (SPEIF) the next month.

Russia assumed the BRICS Presidency in April 2015, and since then, it has been organising a number of events and meetings under the BRICS format where India was represented by high-level ministerial delegations. Among these events were: the BRICS Environment Ministers' Meeting, the BRICS Consultations on Middle East and North Africa, the 5th meeting of BRICS High Representatives for Security Issues, the BRICS Parliamentary Forum, the 7th BRICS Summit in Ufa, and the BRICS Industrial Ministers meeting.

Defence cooperation

India has longstanding and wide-ranging cooperation with Russia in the field of defence. India-Russia military technical cooperation has evolved from a simple buy-

er-seller framework to one involving joint research, development and production of advanced defence technologies and systems. The BrahMos Missile System, joint design and development of the fifth generation fighter aircraft, as well as the licensed production in India of SU-30 aircraft and T-90 tanks, are examples of such flagship cooperation. Last year in June, the Prime Minister dedicated to the nation the Russian-built aircraft carrier INS Vikramaditya at a special ceremony off the coast of Goa. The two countries also hold exchanges and training exercises between their armed forces annually. An Indian contingent participated in the military parade in Moscow on 9 May 2015 during the 70th anniversary of the victory in the World War II.

The IRIGC-MTC co-chaired by the two defence ministers and its working groups and sub-groups review defence cooperation between the two countries. The 15th session of the Commission was held in November 2015 to review the ongoing cooperation and future opportunities for progressing bilateral defence cooperation. In December 2014, the two governments signed the Agreement for Training of Indian Armed Forces Personnel in the Military Educational Establishments of the Defence Ministry of the Russian Federation. Highly promising projects of a multi-functional fighter aircraft and a multi-purpose transport aircraft are also well in progress. The Inter-Governmental Agreement on Manufacture of Kamov 226 helicopter in India is the first project for a major defence platform under the Make in India mission.

Well established contacts between Russian and Indian militaries manifest themselves through regular joint land, naval and air exercises such as the recent INDRA exercises held in November-December 2015 in the Bay of Bengal and in Rajasthan.

Nuclear energy

Russia is an important partner in peaceful uses of nuclear energy and it recognises India as a country with advanced nuclear technology with an impeccable non-proliferation record. In December 2014, the Department of Atomic Energy (DAE) and Russia's Rosatom signed the Strategic Vision for strengthening cooperation in peaceful uses of atomic energy between India and Russia. The Kudankulam Nuclear Power Plant (KKNPP) is being built in India with Russian cooperation. KKNPP Unit 1 became operational in July 2013, and attained full generation capacity on 7 June 2014, while its Unit 2 is in the process of commissioning. India and Russia have signed a General Framework Agreement on KKNPP Units 3 and 4 and subsequent contracts are under preparation. These measures are in line with the Strategic Vision of Russian-Indian Cooperation in Peaceful Nuclear Power Use of 2014 that sets the goal to jointly construct at least 12 power units over a period of 20 years.

Space cooperation

India-Russia cooperation in the field of peaceful uses of outer space dates back to about four decades. 2015 marked the 40th anniversary of the launch of India's first satellite Aryabhata on a Soviet launch vehicle Soyuz. In 2007, India and Russia signed a framework agreement on cooperation in the peaceful uses of outer space, including satellite launches, Glonass navigation, remote sensing and other societal applications of outer space. In June 2015, the space agencies signed an MoU on expansion of cooperation in the field of the exploration and use of outer space for peaceful purposes.

Science and technology

The Working Group on Science and Technology functioning under IRIGC-TEC, the Integrated Long Term Programme (ILTP) and the Basic Science Cooperation Programme are the three main institutional mechanisms for bilateral science and technology cooperation, while the Science Academies of the two countries promote inter-academy exchanges. ILTP during its 25-year long implementation period, supported over 500 joint R&D projects and setting up of nine thematic centres in India and Russia that resulted in generation of over 1500 joint publications and many new products, processes, facilities, and research centres besides developing over 10,000 scientific contacts. India-Russia Science and Technology Centre with a branch each in Delhi-NCR and Moscow was set up in 2011-12 in order to promote two-way transfer of technologies and their commercialisation.

Two programmes of Cooperation in the field of Science, Technology and Innovation and in Biotechnology concluded in October 2013 have become active mechanisms; these have already supported the first batch of 11 joint R&D projects in 2014. In December 2014, Indian Council of Medical Research and Russian Foundation of Basic Research entered into an MoU for cooperation in health research. In May 2015, the Department of Science and Technology (DST) and Russian Science Foundation signed an agreement to support basic and exploratory research.

Cultural cooperation

There is a strong tradition of Indian studies in Russia. The Jawaharlal Nehru Cultural Centre (JNCC) at the Embassy of India in Moscow maintains close cooperation with leading Russian institutions, including the Institute of Philosophy, Russian State University for Humanities, Institute of Oriental Studies in Moscow, Institute of Asian and African Studies at the Moscow State University, School of International Relations at the St. Petersburg University, Kazan Federal University, Far Eastern Federal University (Vladivostok), and Russian Institute for Cultural Research (Krasnodar). There is a Mahatma Gandhi Chair on Indian Philosophy at the Institute of Philosophy, Moscow. About 20 Russian Institutions, including leading universities and schools, regularly teach Hindi to Russian students. Apart from

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Hindi, languages such as Tamil, Marathi, Gujarati, Bengali, Urdu, Sanskrit and Pali are taught in Russian institutions. There is general interest among Russian people in Indian dance, music, yoga and ayurveda. JNCC conducts classes in yoga, dance, music and Hindi for approximately 500 students every month.

There are regular cultural initiatives to promote people-to-people contacts between India and Russia, including reciprocal years of each others' culture. The President of India inaugurated the Year of Indian Culture, 'Namaste Russia,' in Moscow on 10 May 2015 and some 15 performances in eight cities were held as part of 'Namaste Russia' across various parts of Russia over 2015. On 21 June 2015, the first International Day of Yoga (IDY) was organised across Russia covering more than 60 regions with over 250 events and involving about 45,000 Yoga enthusiasts.

Indian community

The Indian community in the Russian Federation is estimated at about 30,000. In addition, about 1500 Afghan nationals of Indian origin live in Russia. About 500 Indian businessmen reside in Russia, of which around 200 work in Moscow. An estimated 300 registered Indian companies operate in Russia. Majority of Indian businessmen/companies in Russia are involved in trading while some represent Indian banks, pharmaceuticals, hydrocarbon and engineering companies. Tea, coffee, tobacco, pharmaceuticals, rice, spices, leather footwear, granite, IT and garments are amongst the products being imported by these companies from India.

There are approximately 4500 Indian students enrolled in medical and technical institutions in the Russian Federation. About 90 percent of them pursue medical studies in some 20 universities/institutions across Russia.

Hindustani Samaj is the oldest Indian organisation in Russia functioning since 1957. Other Indian organisations in Moscow include, Indian Business Alliance, Overseas Bihar Association, AMMA (All Moscow Malayalee Association), DISHA (Indian-Russian Friendship Society), Textile Business Alliance, Bhartiya Sanskritik Samaj, and Ramakrishna Society Vedanta Centre. The Embassy of India School in Moscow is affiliated to Kendriya Vidyalaya Sangathan in New Delhi with teachers deputed from India. The school has classes from I to XII and has about 350 students.

RUSSIA THE LAND

RUSSIA is the largest country in the world; its total area is 17,075,400 sq km. There are 23 UNESCO World Heritage Sites in Russia, 40 UNESCO biosphere reserves, 41 national parks and 101 nature reserves. It lies between latitudes 41° and 82° N, and longitudes 19° E and 169° W.

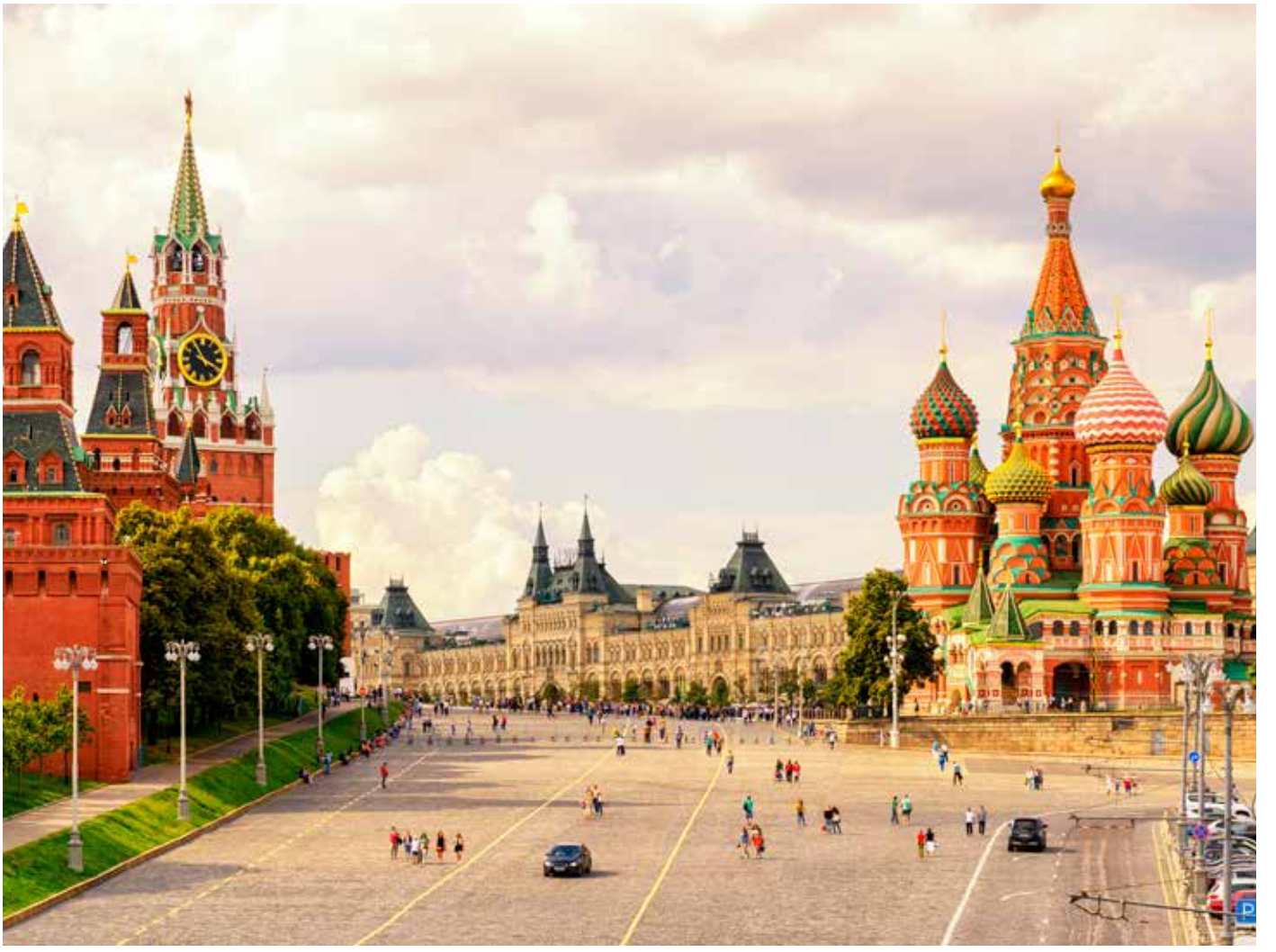
Russia's territorial expansion was achieved largely in the late 16th century under the Cossack Yermak Timofeyevich during the reign of Ivan the Terrible, at a time when competing city-states in the western regions of Russia had banded together to form one country. Yermak mustered an army and pushed eastward where he conquered nearly all the lands once belonging to the Mongols, defeating their ruler, Khan Kuchum.

Russia has a wide natural resource base, including major deposits of timber, petroleum, natural gas, coal, ores and other mineral resources. Russia is covering more than one-eighth of the earth's inhabited land area. Russia is the world's ninth most populous country with over 144 million people at the end of 2015.

Extending across the entirety of northern Asia and much of Eastern Europe, Russia spans 11 time zones and incorporates a wide range of environments and landforms. From northwest to southeast, Russia shares land borders with Norway, Finland, Estonia, Latvia, Lithuania and Poland (both with Kaliningrad Oblast), Belarus, Ukraine, Georgia, Azerbaijan, Kazakhstan, China, Mongolia, and North Korea. It shares maritime borders with Japan by the Sea of Okhotsk and the US state of Alaska across the Bering Strait.

The nation's history began with that of the East Slavs, who emerged as a recognisable group in Europe between the 3rd and 8th centuries CE. Founded and ruled by a Varangian warrior elite and their descendants, the medieval state of Rus' arose in the 9th century. In 988 it adopted Orthodox Christianity from the Byzantine Empire, beginning the synthesis of Byzantine and Slavic cultures that defined Russian culture for the next millennium. Rus' ultimately disintegrated into a number of smaller states; most of the Rus' lands were overrun by the Mongol invasion and became tributaries of the nomadic Golden Horde in the 13th century.

The Grand Duchy of Moscow gradually reunified the surrounding Russian principalities, achieved independence from the Golden Horde, and came to dominate the



The Kremlin and Saint Basil's Cathedral at the Red Square in Moscow

cultural and political legacy of Kievan Rus'. By the 18th century, the nation had greatly expanded through conquest, annexation, and exploration to become the Russian Empire, which was the third largest empire in history, stretching from Poland in Europe to Alaska in North America.

Following the Russian Revolution, the Russian Soviet Federative Socialist Republic became the largest and leading constituent of the Soviet Union abbreviated to USSR, the world's first constitutionally socialist state and a recognised world superpower, and a rival to the United States which played a decisive role in the Allied victory in World War II. The Soviet era saw some of the most significant technological achievements of the 20th century, including the world's first human-made satellite, and the first man in space. By the end of 1990, the Soviet Union had the world's second-largest economy, largest standing military in the world and the largest stockpile of weapons of mass destruction (the state detonated in 1961 the Tsar Bomba, which was mankind's most powerful nuclear bomb ever built). Following the partition of the Soviet Union in 1991, 14 independent republics emerged from the USSR; as the largest, most populous, and most economically developed republic, the Russian SFSR reconstituted itself as the Russian Federation and is recognised as the continuing legal personality (the sole successor state) of the Soviet Union.

The Russian economy ranks as the tenth largest by nominal GDP and sixth largest by purchasing power parity in 2015. Russia's extensive mineral and energy resources, the largest reserves in the world, have made it one of the largest producers of oil and natural gas globally. The country is one of the five recognised nuclear weapons states and

A tourist train rides on the Circum-Baikal Railway, Lake Baikal, Russia

possesses the largest stockpile of weapons of mass destruction. Russia was the world's second biggest exporter of major arms in 2010-14, according to SIPRI data.

Russia is a great power and a permanent member of the United Nations Security Council, a member of the G20, the Council of Europe, the Asia-Pacific Economic Co-operation (APEC), the Shanghai Cooperation Organisation (SCO), the Organisation for Security and Co-operation in Europe (OSCE), and the World Trade Organisation (WTO), as well as being the leading member of the Commonwealth of Independent States (CIS), the Collective Security Treaty Organisation (CSTO) and one of the five members of the Eurasian Economic Union (EEU), along with Armenia, Belarus, Kazakhstan and Kyrgyzstan.

Being Russian

Russia has the most college-level or higher graduates in terms of percentage of population in the world, at 54 percent. Russia has a free education system, which is guaranteed for all citizens by the Constitution. However, entry to subsidised higher education is highly competitive. As a result of great emphasis on science and technology in education, Russian medical, mathematical, scientific, and aerospace research is generally of a high order.

Since 1990, the 11-year school education has been introduced. Education in state-owned secondary schools is free. University level education is free, with exceptions. A substantial share of students is enrolled for full pay (many state institutions started to open commercial positions in the last years).

The Government allocates funding to pay the tuition fees within an established quota or number of students for each state institution. In higher education institutions, students are paid a small stipend and provided with free housing if they are from out of town.

The oldest and largest Russian universities are Moscow State University and Saint

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Petersburg State University. In the 2000s, in order to create higher education and research institutions of comparable scale in Russian regions, the government launched a programme of establishing 'federal universities,' mostly by merging existing large regional universities and research institutes and providing them with a special funding. These new institutions include the Southern Federal University, Siberian Federal University, Kazan Volga Federal University, North-Eastern Federal University, and Far Eastern Federal University.

Folk culture and cuisine

There are over 160 different ethnic groups and indigenous peoples in Russia. The country's vast cultural diversity spans ethnic Russians with their Slavic Orthodox traditions, Tatars and Bashkirs with their Turkic Muslim culture, Buddhist nomadic Buryats and Kalmyks, Shamanistic peoples of the Extreme North and Siberia, highlanders of the Northern Caucasus, and Finno-Ugric peoples of the Russian North West and Volga Region.

Handicraft, like Dymkovo toy, khokhloma, gzhel and palekh miniature represent an important aspect of Russian folk culture. Ethnic Russian clothes include kaftan, kosovorotka and ushanka for men, sarafan and kokoshnik for women, with lapti and valenki as common shoes. The clothes of Cossacks from Southern Russia include burka and papaha, which they share with the peoples of the Northern Caucasus.

Russian cuisine widely uses fish, poultry, mushrooms, berries, and honey. Crops of rye, wheat, barley, and millet provide the ingredients for various breads, pancakes and cereals, as well as for kvass, beer and vodka drinks. Black bread is rather popular in Russia, compared to the rest of the world. Flavourful soups and stews include shchi, borsch, ukha, solyanka and okroshka. Smetana (a heavy sour cream) is often added to soups and salads. Pirozhki, blini and syrniki are native types of pancakes. Chicken Kiev, pelmeni and shashlyk are popular meat dishes, the last two being of Tatar and Caucasus origin respectively. Other meat dishes include stuffed cabbage rolls (golubtsy) usually filled with meat. Salads include Olivier salad, vinegret and dressed herring.

Russia's large numbers of ethnic groups have distinctive traditions regarding folk music. Typical ethnic Russian musical instruments are gusli, balalaika, zhaleika, andgarmoshka. Folk music had a significant influence on Russian classical composers, and in modern times it is a source of inspiration for a number of popular folk bands, like Melnitsa. Russian folk songs, as well as patriotic Soviet songs, constitute the bulk of the repertoire of the world-renowned Red Army choir and other popular ensembles.

Russians have many traditions, including the washing in banya, a hot steam bath somewhat similar to sauna. Old Russian folklore takes its roots in the pagan Slavic religion. Many Russian fairy tales and epic bylinas were adapted for animation films, or for feature movies by prominent directors like Aleksandr Ptushko (Ilya Muromets, Sadko) and Aleksandr Rou (Morozko, Vasilisa the Beautiful). Russian poets, including Pyotr Yershov and Leonid Filatov, made a number of well-known poetical interpretations of the classical fairytales, and in some cases, like that of Alexander Pushkin, also created fully original fairy tale poems of great popularity.

Architecture

Since the Christianisation of Kievan Rus' for several ages Russian architecture was influenced predominantly by the Byzantine architecture. Apart from fortifications (kremlins), the main stone buildings of ancient Rus' were Orthodox churches with their many domes, often gilded or brightly painted.

Aristotle Fioravanti and other Italian architects brought Renaissance trends into Russia since the late 15th century, while the 16th century saw the development of unique tent-like churches culminating in Saint Basil's Cathedral, By that time the onion dome design was also fully developed. In the 17th century, the 'fiery style' of ornamentation flourished in Moscow and Yaroslavl, gradually paving the way for the Naryshkin baroque of the 1690s. After the reforms of Peter the Great the change of architectural styles in Russia generally followed that in the Western Europe.

The 18th-century taste for rococo architecture led to the ornate works of Bartolomeo Rastrelli and his followers. The reigns of Catherine the Great and her grandson Alexander I saw the flourishing of Neoclassical architecture, most notably in the capital city of Saint Petersburg. The second half of the 19th century was dominated by the Neo-Byzantine and Russian Revival styles. Prevalent styles of the 20th century were the Art Nouveau, Constructivism, and the Stalin Empire style.

In 1955, President Nikita Khrushchev condemned the 'excesses' of the former academic architecture, and the late Soviet era was dominated by plain functionalism in architecture. This helped somewhat to resolve the housing problem, but created a large quantity of buildings of low architectural quality, much in contrast with the previous bright styles. The situation improved in the recent two decades. Many temples demolished in Soviet times were rebuilt, and this process continues along with the restoration of various historical buildings destroyed in World War II. A total of 23,000 Orthodox churches have been rebuilt between 1991 and 2010, which effectively quadrupled the number of operating churches in Russia.

Visual arts

Early Russian painting is represented in icons and vibrant frescos, the two genres inherited from Byzantium. As Moscow rose to power, Theophanes the Greek, Dionisius and Andrei Rublev became vital names associated with a distinctly Russian art.

The Russian Academy of Arts was created

The Bolshoi Theatre in Moscow

in 1757 and gave Russian artists an international role and status. Ivan Argunov, Dmitry Levitzky, Vladimir Borovikovsky and other 18th century academicians mostly focused on portrait painting. In the early 19th century, when neoclassicism andromantism flourished, mythological and Biblical themes inspired many prominent paintings, notably by Karl Briullov and Alexander Ivanov.

In the mid-19th century the Peredvizhniki (Wanderers) group of artists broke with the Academy and initiated a school of art liberated from academic restrictions. These were mostly realist painters who captured Russian identity in landscapes of wide rivers, forests, and birch clearings, as well as vigorous genre scenes and robust portraits of their contemporaries. Some artists focused on depicting dramatic moments in Russian history, while others turned to social criticism, showing the conditions of the poor and caricaturing authority; critical realism flourished under the reign of Alexander II. Leading realists include Ivan Shishkin, Arkhip Kuindzhi, Ivan Kramskoi, Vasily Polenov, Isaac Levitan, Vasily Surikov, Viktor Vasnetsov, Ilya Repin, and Boris Kustodiev.

The turn of the 20th century saw the rise of symbolist painting, represented by Mikhail Vrubel, Kuzma Petrov-Vodkin, and Nicholas Roerich.

The Russian avant-garde was a large, influential wave of modernist art that flourished in Russia from approximately 1890 to 1930. The term covers many separate, but inextricably related art movements that occurred at the time, namely neo-primitivism, suprematism, constructivism, rayonism, and Russian Futurism. Notable artists from this era include El Lissitzky, Kazimir Malevich, Wassily Kandinsky, and Marc Chagall. Since the 1930s the revolutionary ideas of the avant-garde clashed with the newly emerged conservative direction of socialist realism.

Soviet art produced works that were furiously patriotic and anti-fascist during and after the Great Patriotic War. Multiple war memorials, marked by a great restrained solemnity, were built throughout the country. Soviet artists often combined innovation with socialist realism, notably the sculptors Vera Mukhina, YevgenyVuchetich and Ernst Neizvestny.

Music and dance

Music in 19th century Russia was defined by the tension between classical composer Mikhail Glinka along with other members of The Mighty Handful, who embraced Russian national identity and added religious and folk elements to their compositions, and the Russian Musical Society led by composers Anton and Nikolay Rubinsteins, which was musically conservative. The later tradition of Pyotr Ilyich Tchaikovsky, one of the greatest composers of the Romantic era, was continued into the 20th century by Sergei Rachmaninoff. World-renowned composers of the 20th century include Alexander Scriabin, Igor Stravinsky, Sergei Prokofiev, Dmitri Shostakovich and Alfred Schnittke.

Russian conservatories have turned out generations of famous soloists. Among the best known are violinists Jascha Heifetz, David Oistrakh, Leonid Kogan, Gidon Kremer,

Lake Amutin the Khabarovsk region, Russia

and Maxim Vengerov; cellists Mstislav Rostropovich, Natalia Gutman; pianists Vladimir Horowitz, Sviatoslav Richter, Emil Gilels, Vladimir Sofronitsky and Evgeny Kissin; and vocalists Fyodor Shalyapin, Mark Reizen, Elena Obraztsova, Tamara Sinyavskaya, Nina Dorliak, Galina Vishnevskaya, Anna Netrebko and Dmitry Hvorostovsky.

During the early 20th century, Russian ballet dancers Anna Pavlova and Vaslav Nijinsky rose to fame, and impresario Sergei Diaghilev and his Ballets Russes' travels abroad profoundly influenced the development of dance worldwide. Soviet ballet preserved the perfected 19th century traditions, and the Soviet Union's choreography schools produced many internationally famous stars, including Galina Ulanova, Maya Plisetskaya, Rudolf Nureyev, and Mikhail Baryshnikov. The Bolshoi Ballet in Moscow and the Mariinsky Ballet in St. Petersburg remain famous throughout the world.

Modern Russian rock music takes its roots both in the Western rock and roll and heavy metal, and in traditions of the Russian bards of the Soviet era, such as Vladimir Vysotsky and Bulat Okudzhava. Popular Russian rock groups include Mashina Vremeni, DDT, Aquarium, Alisa, Kino, Kipelov, Nautilus Pompilius, Aria, Grazhdanskaya Oborona, Splean and Korol i Shut. Russian pop music developed from what was known in the Soviet times as estrada into full-fledged industry, with some performers gaining wide international recognition, such as t.A.T.u., Nu Virgos and Vitas.

Literature and philosophy

In the 18th century, during the era of Russian Enlightenment, the development of Russian literature was boosted by the works of Mikhail Lomonosov and Denis Fonvizin. By the early 19th century a modern native tradition had emerged, producing some of the greatest writers in Russian history. This period, known also as the Golden Age of Russian Poetry, began with Alexander Pushkin, who is considered the founder of the modern Russian literary language and often described as the 'Russian Shakespeare.' It continued into the 19th century with the poetry of Mikhail Lermontov and Nikolay Nekrasov, dramas of Alexander Ostrovsky and Anton Chekhov, and the prose of Nikolai Gogol and Ivan Turgenev. Leo Tolstoy and Fyodor Dostoyevsky have been described by literary critics as the greatest novelists of all time.

By the 1880s, the age of the great novelists was over, and short fiction and poetry became the dominant genres. The next several decades became known as the Silver Age of Russian Poetry, when the previously dominant literary realism was replaced by symbolism. Leading authors of this era include such poets as Valery Bryusov, Vyacheslav Ivanov, Alexander Blok, Nikolay Gumilev and Anna Akhmatova, and novelists Leonid Andreyev, Ivan Bunin, and Maxim Gorky.

Russian philosophy blossomed in the 19th century, when it was defined initially by the opposition of people advocating Western political and economical models, and Slavophiles, insisting on developing Russia as a unique civilisation. The latter group includes Nikolai Danilevsky and Konstantin Leontiev, the founders of Eurasianism. In its further development Russian philosophy was always marked by a deep connection to literature and interest in creativity, society, politics and nationalism; Russian cosmism and religious philosophy were other major areas. Notable philosophers of the late 19th and the early 20th centuries include Vladimir Solovyev, Sergei Bulgakov, and Vladimir Vernadsky.

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View of the old harbour with moored tourboats in Ghent, Belgium

FLANDERS – THE FOCUS REGION

FLANDERS is the Dutch-speaking northern portion of Belgium, although there are several overlapping definitions, including ones related to culture, language, politics and history. It is one of the communities, regions and language areas of Belgium. The demonym associated with Flanders is Fleming, while the corresponding adjective is Flemish. The official capital of Flanders is Brussels, although Brussels itself has an independent regional government, and the government of Flanders only oversees some

cultural aspects of Brussels life.

In historical contexts, Flanders originally refers to the County of Flanders (Flandria), which around AD 1000 stretched from the Strait of Dover to the Scheldt estuary. The core of historical Flanders is situated within modern-day Flanders and corresponds to the provinces West Flanders and East Flanders, but it sometimes stretched into what is now France and the Netherlands. Nevertheless, during the 19th and 20th centuries it became increasingly commonplace in English and some other languages to use the term 'Flanders' to refer to the entire Dutch-speaking part of Belgium, stretching all the way to the River Maas, as well as cultural movements such as Flemish art. In accordance with late 20th century Belgian state reforms the area was made into two political entities: the Flemish Community and the Flemish Region. These entities were merged, although geographically the Flemish Community, which has a broader cultural mandate, covers Brussels, whereas the Flemish Region does not.

Flanders has figured prominently in European history. During the late Middle Ages, cities such as Ghent, Bruges, Antwerp and Brussels made it one of the richest and most urbanised parts of Europe, weaving the wool of neighbouring lands into cloth for both domestic use and export. As a consequence, a very sophisticated culture developed, with impressive achievements in the arts and architecture, rivalling those of northern Italy. Belgium was one of the centres of the 19th century industrial revolution but Flanders was at first overtaken by French-speaking Wallonia. In the second half of the 20th century, however, Flanders' economy modernised rapidly, and today Flanders is significantly more wealthy than its southern counterpart.

Geographically, Flanders is generally flat, and has a small section of coast on the North Sea. Much of Flanders is agriculturally fertile and densely populated, with a population density of almost 500 people per sq km. It touches France to the west near the coast, and borders the Netherlands to the north and east, and Wallonia to the south. The Brussels Capital Region is an enclave within the Flemish Region. Flanders has exclaves of its own: Voeren in the east is between Wallonia and the Netherlands and Baarle-Hertog in the north consists of 22 exclaves surrounded by the Netherlands.

Launch of E-Catalogue series: www.ingineering-brands.com

BRAND EQUITY

EEPC INDIA

TILL as recent as the 18th century, India had dominated the global supply for some of the most valued products, commodities and knowledge. Today, the Government of India led initiatives such as Make in India, Smart Cities, Development of Industrial Corridors etc may be seen as an attempt in the same direction in order to re-engineer India's manufacturing excellence.

Brand India Engineering (BIE) is one such initiative led by the Ministry of Commerce & Industry, Government of India. The initiative aims to strengthen the value and recognition for quality and reliability for Indian engineering products and services in the global markets. The initiative is being implemented through India Brand Equity Fund (IBEF), a trust created by the Department of Commerce and EEPC India, which is the lead implementing agency. The initiative is being implemented in partnership with leading industry associations in different engineering sectors.

The BIE initiative was initiated in 2013 across major global trade shows and events. As part of the initiative, in November 2015, EEPC India had launched a product catalogue for the Pumps and Valves sector. The catalogue highlighted over 40 leading manufacturers of Pumps and Valves which are adhering to the highest product and systems quality standards accepted globally. The catalogue also represented the manufacturers who have committed to present their credentials and commitments to global buyers.

Official Brand India Directory of Indian Engineering Products and Services

The Brand India Engineering Catalogue is an official directory of the Ministry of Commerce and Industry, Government of India. The directory has been officially endorsed as the representative of leading quality manufacturers of engineering products and services. The catalogue is an integral part of the BIE initiative. It is being promoted across major trade shows and events across the world. The catalogue is intended to serve as the one-stop and reliable solution for global buyers looking to source products and services from India. According to the mandate set by the Ministry of Commerce and Industry, only those companies that fulfil the set criteria may qualify to be eligible for enlisting themselves in the catalogue.

Launch of E-Catalogue

EEPC India is launching an upgraded version of the product catalogue in the form of an E-Catalogue around March 2017. The E-catalogue launch and promotion is likely to coincide with sixth International Engineering Sourcing Show (IESS VI), Chennai. IESS, which is the flagship event of the Ministry of Commerce and Industry, Government of India, is hosting over 600 international buyers, 300 exhibitors and over 10,000 trade visitors. The theme of the 6th edition is Smart Tech for Smart Engineering, and Russia is the partner country for the show. Apart from several hi-tech display of technologies and innovations, the three day event would also host series of value added seminars and conferences.

The E-Catalogue would host many new upgraded features for easy user accessibility and functionalities. The new E-Catalogue has expanded the ambit of engineering products and services beyond Pumps and Valves to Electrical Machineries, Equipments and Components, Medical Devices and Textiles Machineries and Accessories. In due course, more products are envisaged to be added to cover all the products which are having significant exports from India.

New features on E-Catalogue

The E-Catalogue is being designed by

Snapshot of upgraded Brand India Engineering E-Catalogue

EEPC India keeping in mind the latest technologies that is trending in the global sourcing and supply chain. The E-Catalogue is envisaged to be a highly interactive and easily accessible platform, that would not only connect the interested buyers with potential suppliers, but will also infuse confidence in the buyers to make reliable decisions.

Some of the new features of the E-Catalogue are as follows:

i. Online uploading and accessibility for suppliers products catalogues, photos, certifications
ii. Interactive search tools for products and suppliers
iii. Up-to-date suppliers contacts
iv. SEO and SEM optimised website platform
v. Offline Save options for providing portability of the products and suppliers profiles

Further, EEPC India has assigned a dedicated team to handle queries for each and every product segment, to ensure that the E-Catalogue is updated with the latest information.

Target promotion avenues

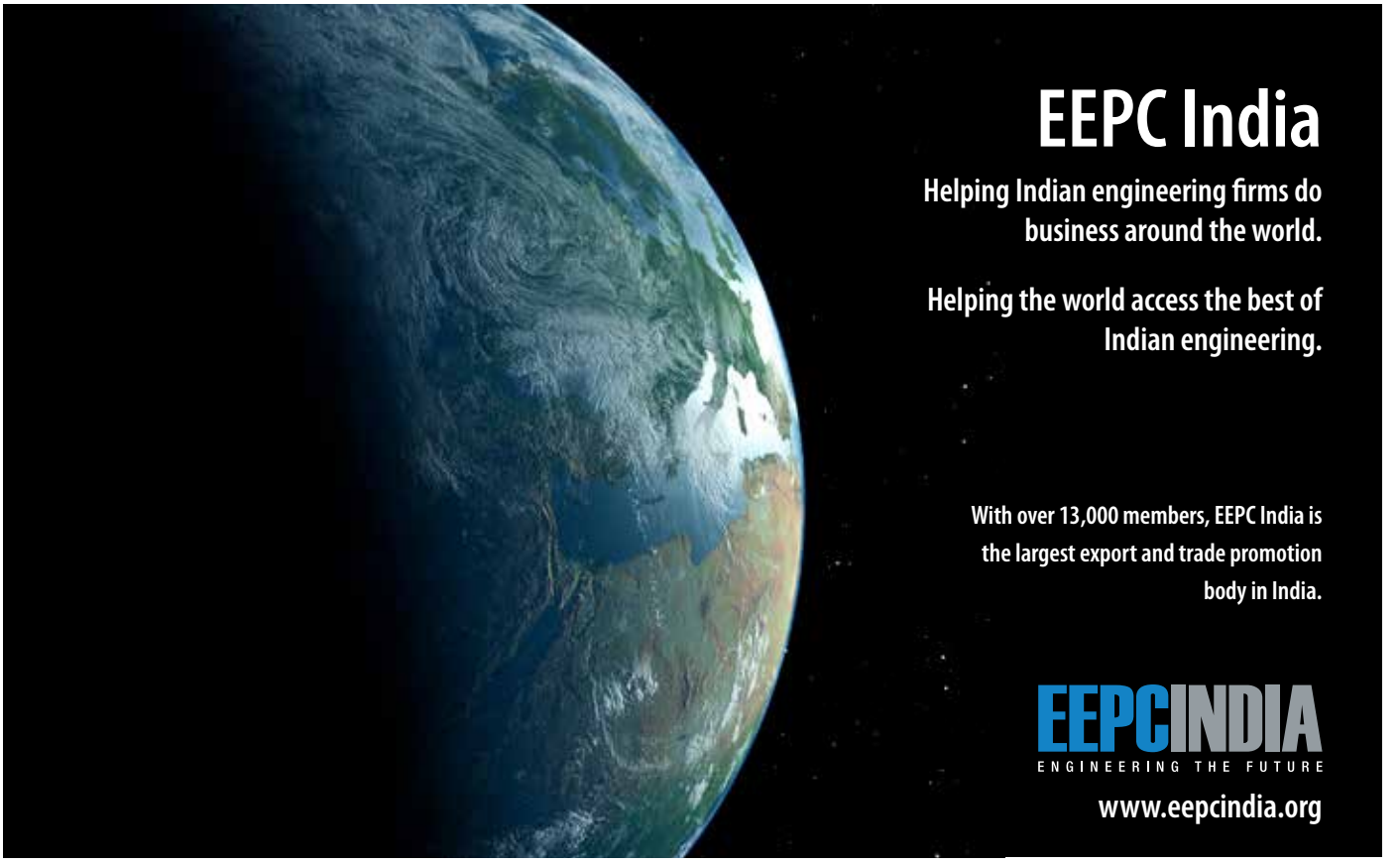
The Brand India Engineering Catalogue is intended to be promoted across all major national and international trade promotion venues such as in Trade Shows and Events, Business Delegations, Online and Digital platforms across all the major markets of products and services.

Product sectors

At the initial stage, E-Catalogue has identified four products segments among the most promising Indian engineering product and services. These includes: Pumps and Valves, Medical Devices, Electrical Machineries, Equipments and Components and Textiles Machineries and Accessories. The BIE initiative envisages inclusion of more products and services over the due course.

Conclusion

The E-Catalogue has added new dimension to the initiative of Brand India Engineering. The E-Catalogue would enable a sustained campaign on part of EEPC India and the Department of Commerce to promote Indian Engineering Brand and simultaneously exports from India in the global markets. The Government of India invites all leading manufacturers and suppliers to register themselves on the E-Catalogue (free of cost), and has encouraged leading industry associations and trade promotion bodies to promote the E-catalogue at the international level.



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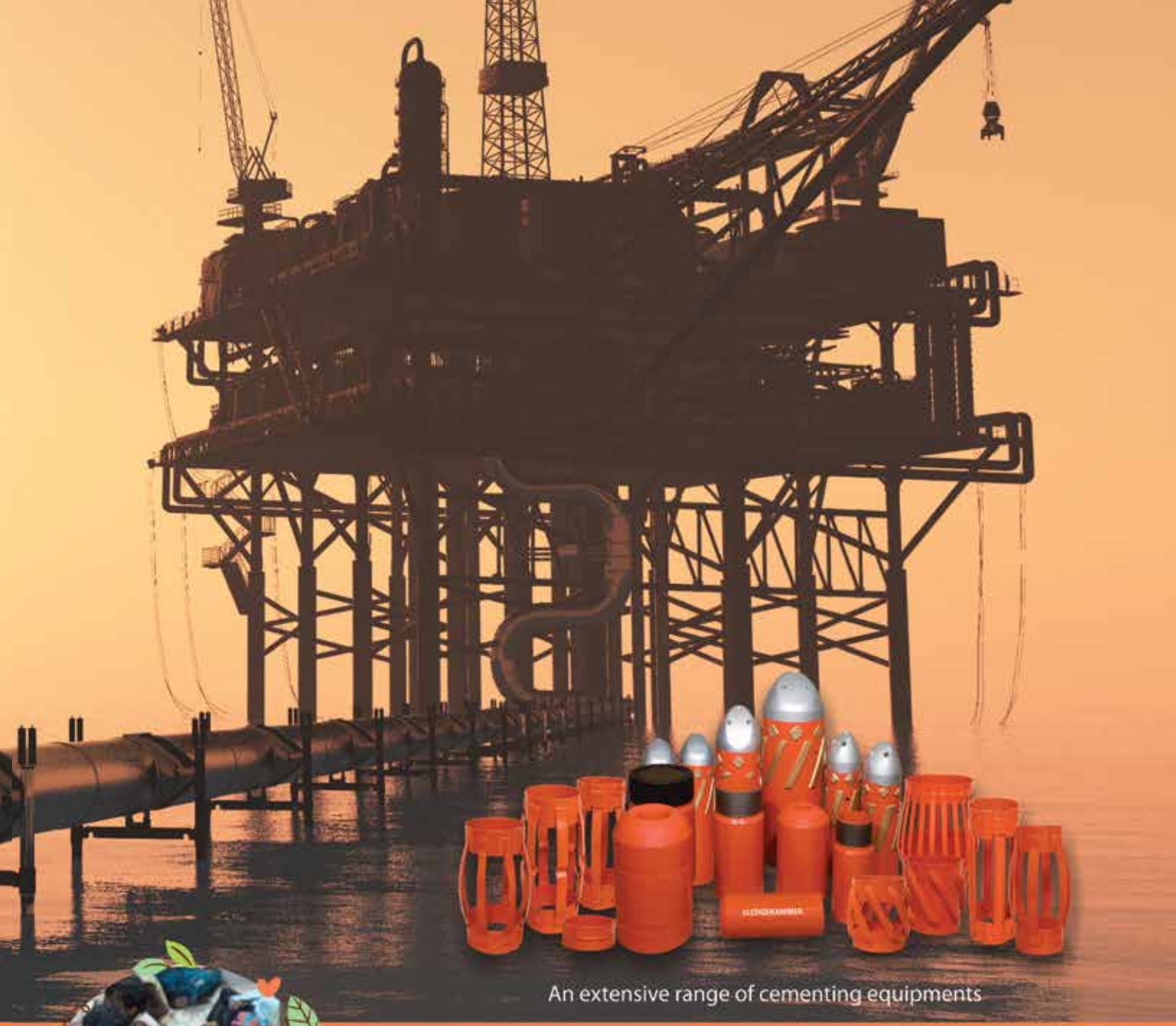

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Draft National Steel Policy 2017

India is the third largest producer of steel globally and has a vibrant steel industry, which has historically been the foundation of a nation's rapid industrial development. The Ministry of Steel, Government of India has prepared a draft National Steel Policy 2017 aimed at addressing the issues arising from the rapidly changing environment worldwide and in India to make the industry more dynamic and productive. The Ministry invites suggestions from the public on the draft. The draft Vision statement states: 'To create a self-sufficient steel industry that is technologically advanced, globally competitive and promotes inclusive growth.' We bring you edited excerpts of the draft Policy. The full text is available on the Ministry of Steel's website

POLICY

MINISTRY OF STEEL,
GOVERNMENT OF INDIA

STEEL is a product of large and technologically complex industry having strong forward and backward linkages in terms of material flows and income generation. It is also one of the most important products of the modern world and of strategic importance to any industrial nation. From construction, industrial machinery to consumer products, steel finds its way into a wide variety of applications. It is also an industry with diverse technologies based on the nature and extent of raw materials used. In India, steel has an output multiplier effect of nearly 1.4X on GDP and employment multiplier factor of 6.8X.

A vibrant Steel industry has historically been the foundation of a nation's rapid Industrial Development. On account of rapid industrial development, from a small capacity of 22 MT in FY 1991-92 prior to deregulation, India has become the 3rd largest steel producer in the world with a production of 91 MT and a capacity of 122 MT in FY 2015-16. The National Steel Policy 2017 (NSP 2017) is an effort to steer the industry to achieve its full potential, enhance steel production with focus on high end value added steel while being globally competitive.

The National Steel Policy 2005 (NSP 2005) sought to indicate ways and means of consolidating the gains flowing out of the then economic order and charted out a road map for sustained and efficient growth of the Indian steel industry. However, the unfolded developments in India as also worldwide, both on the demand and supply sides of the steel market, have warranted a relook at the different elements of the NSP 2005.

India's competitive advantage in steel production is driven, to a large extent, from the indigenous availability of high grade iron ore and non-coking coal – the two critical inputs of steel production. In addition, it also has a vast and rapidly growing market for steel, strong MSME sector and a relatively young work force with competitive labour costs.

Driven by the positive demand outlook and prevailing high prices of steel in the period post 2004, the Indian steel sector witnessed a wave of investments in the states of Odisha, Jharkhand, Karnataka and Chhattisgarh. Substantial new capacity was created and existing plants were modernised. A significant portion of these investments were funded by banks and other forms of borrowings.

India became the 3rd largest producer of steel in 2015 and is now well on track to emerge as the 2nd largest producer after China. There is significant potential for growth given the low per capita steel consumption of 61 kg in India, as compared to world average of 208 kg. Indian economy is rapidly growing with enormous focus on infrastructure and construction sector. Several initiatives mainly, affordable housing, expansion of railway networks, development of domestic shipbuilding industry, opening up of defence sector for private participation, and the anticipated growth in the automobile sector, are expected to create significant demand for steel in the country. Further, while the main focus of the industry is on the domestic market, being in close vicinity of the developed west and developing east, provides it a strategic location that augurs well for the industry seeking opportunities for exports of fin-

ished goods and imports of some scarcely available raw materials.

The Indian steel industry is structured in between three broad categories based on route wise production, viz. BF-BOF, EAF and IF. BF-BOF route producers have large integrated steel making facilities which utilise iron ore and coking coal for production of steel. Currently, the BF-BOF route had a combined capacity of around 50 MT at utilisation level of 82 percent (capacity utilisation calculated on pro-rata basis of April-December 2017 production – 30.88 MT). Unlike other large steel producers, the Indian steel industry is also characterised by the presence of a large number of small steel producers who utilise sponge iron, melting scrap and non-coking coal (EAF/IF route) for steelmaking. As on March 2016, there were 308 sponge iron producers that use iron ore/pellets and non-coking coal/gas providing feedstock for steel production; 1175 electric arc furnaces and induction furnaces that use sponge iron and/or melting scrap to produce semi-finished steel and 1392 re-rollers that rolls out semi-finished steel into finished steel products for consumer end use.

Over the past two decades, the Indian steel industry has developed capabilities of producing a wide range of sophisticated steel at par with global best practices addressing diverse needs of the end user industries. However, India still needs to make a special effort to domestically produce steel for high end applications, electrical steel (CRGO), special steel and alloys for Power equipment, Aerospace, Defence and Nuclear applications.

However, the Indian steel sector is disadvantaged due to limited availability of essential raw material such as high grade Manganese ore and Chromite, coking coal, steel grade limestone, refractory raw material, Nickel, Ferrous Scrap etc. Due to shortage of domestic coking coal, both in terms of quantity and quality, pig iron producers/BF operators in India have to significantly depend on import of coking coal.

In the recent past, multiple issues have also adversely impacted the steel sector, viz. cancellations of iron ore and coal mine allocations, delays in land acquisition, environmental clearances, which led to many of the projects facing significant cost and time overruns. Additionally, companies also faced substantially increased operating costs on account of increased logistics and raw material costs and other charges.

Post 2011, global prices of steel began to decline, marking the beginning of a down turn in the global steel industry triggered by slowdown in global demand and over capacities in a number of countries including China. By July 2015, prices had fallen by 50 percent compared to January 2011 – their lowest in decades, as cheap imports flooded world steel markets. This significant structural asymmetry between demand and supply also affected large number of Indian companies leading to surge in imports resulting in weak pricing conditions, low profitability, lower capacity utilisation and even closure of capacities in some cases.

In the new environment, the industry has to be steered with appropriate policy support to ensure that production of steel matches the anticipated pace of growth in consumption. Special emphasis is needed to ensure that the industry follows a sustainable path of development in respect of environmental friendliness, mineral conservation, quality of steel products, use of technology and indigenous R&D efforts to ensure that the country can, over time, reach global efficiency benchmarks to become a world leader in steel production technology, as well as in production of high end steel.

NSP 2017 – VISION, MISSION AND OBJECTIVES

Vision

To create a globally competitive steel industry that promotes inter-sectoral growth

or

To create a self-sufficient steel industry that is technologically advanced, globally competitive and promotes inclusive growth.

Mission

Provide environment for attaining:

- Self-sufficiency in steel production by providing policy support and guidance to private manufacturers, MSME steel producers, CPSEs and encourage adequate capacity additions.
- Development of globally competitive steel manufacturing capabilities
- Cost-efficient production and domestic availability of iron ore, coking coal and natural gas
- Facilitate investment in overseas asset acquisitions of raw materials.

Enhance domestic steel demand.

Objectives

The National Steel Policy aims at achieving the following objectives:

i. Build a globally competitive industry with a crude steel capacity of 300 MT by 2030-31

ii. Increase per capita steel consumption to 160 kg by 2030-31

iii. To domestically meet entire demand of high grade automotive steel, electrical steel, special steels and alloys for strategic applications by 2030-31

iv. Increase domestic availability of washed coking coal so as to reduce import dependence on coking coal to 50 percent by 2030-31

v. To be net exporter of steel by 2025-26

vi. Encourage industry to be a world leader on energy and raw material efficient steel

production by 2030-31, in a safe and sustainable manner

vii. Develop and implement quality standards for domestic steel products.

The current context and the long term perspectives on growth

The domestic demand backed growth of the Indian economy and consequently the steel consuming sectors has been a key trait of Indian steel industry. The decade before the liberalisation of the Indian steel industry in 1991 witnessed growth in crude steel production at a CAGR of 5.2 percent. Post liberalisation, witnessed a decadal CAGR of 6.1 percent which accelerated to 8.3 percent during 2000-01 to 2015-16.

However, today the steel industry in India faces challenging external conditions manifest in slow economic growth and idle steel capacity globally. With weak global economic prospects, the Indian steel industry will have to strongly depend on the growth of domestic consumption for its future.

THE POLICY

NSP 2017 covers the following policy areas:

a. Steel Demand
b. Steel Capacity
c. Raw Materials
d. Land, Water and Power
e. Infrastructure and Logistics
f. Product Quality
g. Technological Efficiency
h. MSME Sector
i. Value Addition in Stainless/Alloy Steel
j. Environment Management
k. Safety
l. Trade
m. Financial Risks
n. Role of CPSEs and Way Forward
o. Focus on High-End Research: Steel Research and Technology Mission of India

Steel demand

In 2015, India was the only large economy in the world where steel demand continued to demonstrate positive growth at 5.3 percent, as against negative growth in China -5.4 percent, and Japan -7 percent. India's growing urban infrastructure and manufacturing sectors indicate that demand is likely to remain robust in the years ahead. If India is to achieve the goal of being a 'developed nation,' the steel industry must play a crucial role as has been the case with all the major developed countries and East Asian countries like Japan, South Korea and China.

Notwithstanding the current challenges, Indian steel industry still has significant potential for growth, underscored by the fact that the per capita steel consumption in the country at 61 kg (incl. rural consumption at 10 kg) is much lower than the global average of 208 kg. Going forward, the accelerated spend in infrastructure sector, expansion of railways network, development of domestic shipbuilding industry, opening up of defence sector for private participation, anticipated growth in automobile and capital goods industry and the construction in urban and rural areas, are expected to create significant demand for steel in the country.

Growth in steel consumption in a country is typically linked to the economic growth and steel intensity. While growth in GDP is a crucial determinant of growth in overall consumption, steel intensity is the definitive parameter for an economy and determines the growth rate of steel demand vis-à-vis consumption over time.

It is expected that at the current rate of GDP growth, the steel demand will grow threefold in next 15 years to reach a demand of 212-247 MT by 2030-31. However, even with this demand of finished steel by 2030-31, India's per capita consumption would reach only to 160 kg, lower than the current global average of 208 kg.

Currently around 40 percent of the steel consumption is from construction and infrastructure sectors which is expected to increase to 59 percent by 2030-31.

Creation of steel demand in the country is one of the major task to be undertaken in this direction. To drive steel demand, Ministry has identified construction and manufacturing sectors like Rural development, Urban infrastructure, Roads and Highways, Railways etc. to be the key focus areas and will take necessary steps to achieve the same through the following:

- Steel structures are highly cost effective and have shorter lead time for erection and have greater durability with high design comfort. Hence usage of steel needs to be encouraged in all buildings and structures. Efforts will be made to emphasise the lower lifecycle costing while evaluating projects rather than looking at just the upfront cost in isolation, which would encourage greater usage of steel in Government as well as the private sector.
- The government has chalked out an extremely ambitious plan of Housing for all by 2022 as well as schemes such as Pradhan Mantri Awas Yojna, Saansad Adarsh Gram Yojna etc. These provide a huge opportunity for use of steel intensive structures and designs, usage of prefabricated and precast steel structures, etc. Hence, Ministry will take all necessary measures to promote the increased usage of steel intensive structures/ designs under these schemes.
- Commercial, residential buildings and flyovers also provides immense opportunities. Necessary efforts will be made in conjunction with Ministry of Road, Transport and Highways to evaluate the replacement benefits of the existing bridges, pavements and crash barriers used in Roads and Highways and consider for projects in steel bridges, steel reinforced pavements and steel crash barriers respectively.
- Usage of steel in railways is limited to laying of railway tracks, rolling stocks, wagons, platforms and coaches. Efforts will be made to increase the steel usage in making railway station, foot over bridges, rail coaches, construction of steel based railway colony

buildings especially in seismic prone areas, construction of dedicated freight corridors and superfast rail corridors and construction of more steel bridges for saving time and capital expenditure.

The 'Make in India' initiative is expected to witness significant investments in Construction, Infrastructure, Automobile, Shipbuilding and Power sectors, which will stimulate steel demand. Hence, efforts will be made to pass on such benefit to the domestic steel producers. Use of cost efficient and competitive 'Indian made steel' will pave the way for infrastructure development and construction activities in the country.

Steel capacity

It is anticipated that a crude steel capacity of 300 MT will be required by 2030-31, based on the demand projections as mentioned above. However, achieving crude steel capacity up to 300 MT will require extensive mobilisation of natural resources, finances, manpower and infrastructure including land.

Considering the competitive advantage of steel production in India, the country also has the potential to export sufficient quantities of steel and become a major player in the global market, thus mitigating the foreign exchange risk emanating out of the exposure of the industry to the global raw materials market especially for coking coal.

The BF-BOF route will contribute about percent of the crude steel capacity and production in 2030-31. The DRI-EAF and IF route is expected to contribute percent while other emerging routes are expected to contribute the balance percent of the crude steel capacity and production. (***Under discussion***)

Demand for pig iron for merchant use, such as for castings and supplementary metallic in the electric arc or induction furnaces, is forecast to increase to 23 MT by 2030-31. Similarly, demand for sponge iron is expected to increase to MT by 2030-31. It is expected that the sponge iron capacity may increase to MT by 2030-31 with around percent share of gas based capacities under increased environmental considerations and long term availability of gas. (***Under discussion***)

Creation of additional capacity for fulfilling the anticipated demand will require significant capital investment of about Rs10 lakh crore by 2030-31 and will also generate significant employment in the range of 36 lakh by 2030-31 from the current level of 25 lakh depending on the degree of automation resulting from adoption of different technologies.

In order to ensure optimal growth of the industry and to avoid situations of over or under capacity, the Ministry will work with all the stakeholders to monitor investments in the steel industry on a continuous basis and will also facilitate setting up of SPVs in mineral rich states of Odisha, Chhattisgarh, Jharkhand and Karnataka.

Establishment of steel plants along the coast under the aegis of Sagarmala project will be undertaken. Such plants would be based on the idea of importing scarce raw materials and exporting steel products. The Ministry will also promote cluster based approach particularly in MSME steel sector with common infrastructure on consortium approach for optimum land use, easy availability of raw materials and economies of scale.

Necessary policy environment will also be provided to promote gas based steel plants, electric/induction furnaces and other technologies which will bring down usage of coking coal in blast furnaces.

Raw materials

Availability of raw materials at competitive rates is imperative for the growth of the steel industry.

Iron ore

The government has already come up with Mines and Minerals (Development and Regulation) Amendment Act, 2015 which gives greater emphasis on time bound mine development and increased stress on mineral exploration and sustainable mining operations. The Act has brought clarity on mine allocation process (through auction) and procedure for mining lease renewal and provides for reservation of any particular mine for a particular end use and put conditions permitting auction among such eligible end users.

To ensure adequate availability of iron ore and other minerals, suitable efforts will be made in conjunction with Ministry of Mines to facilitate auction of mineral blocks in a regular manner.

Utilisation of low grade fines lying at mine sites of captive iron ore miners will be promoted and any regulatory changes that may be required will be evaluated in conjunction with concerned ministries. Beneficiation and agglomeration industries would be strengthened through suitable support.

Transportation of iron ore fines to pelletisation units will be targeted through slurry pipelines and conveyors as it will reduce pollution and de-congest transportation infrastructure in mining areas. To encourage this environment friendly transportation, Ministry of Steel will pursue timely completion of on-going slurry pipeline projects and their further expansion in the coming years.

To ensure long term supply of iron ore, intensive and deeper exploration would be promoted to augment resource base. Eco-friendly viable underground mining technique for gainful exploitation of magnetite ore deposits locked in Western Ghats would also be explored in conjunction with mining research institutes.

In order to develop a strategic footprint in the global natural resource industry, acquisition of mineral assets overseas will also be facilitated through bilateral talks with the prospective nations. Steel sector players will be encouraged to acquire and develop global projects individually or on partnership basis.

The Ministry of Steel in conjunction with Ministry of Mines, will facilitate creation of a uniform country-wide sales platform for bringing transparency and predictability in the process of sale of iron ore.

Iron ore pellets

During mechanised mining, 60 to 70 percent output is generated as fines below 10 mm size. Fines are also generated during transportation and handling. To economically utilise these fines, suitable agglomeration process is necessary for converting them into sinters or pellets.

Till the recent past, domestic steel industry was mainly using higher grades of iron ore and a higher proportion of lumps due to their easy accessibility and availability. However, there is a pressing need to utilise low grade iron ores including slimes and dump fines which are stockpiled at different mine heads. Hence, optimal use of existing low grade iron ore resources with special emphasis on conservation of high grade ores will be encouraged. As of 2015-16, there exists pelletisation capacity of about 85 MT with a capacity utilisation 32.5 percent. Impetus will be given to Pellet industry as it helps in mineral conservation by acting as direct feedstock in Blast Furnace in place of high grade iron ore.

Coking coal and non-coking coal

About 70 percent of the coking coal requirement of the domestic steel industry is presently being met through imports. Ministry of Steel will coordinate with Ministry of Coal to increase availability of coking coal through overseas asset acquisition and will also ensure that sufficient number of modern coking coal Washeries get established. Suitable fiscal measures will also be taken to support the rising requirement in the steel sector.

Furthermore, deliberations will be held with Ministry of Coal to persuade CIL to create special coal linkage e-auction window for steel players to ensure supply of coal to steel sector. Ministry of Steel will also facilitate periodic auction of coking coal blocks as it will encourage the steel industry to develop its own dedicated coking coal mines.

To ensure long term availability of coking coal, Ministry of Steel in conjunction with Ministry of Coal will facilitate exploration and exploitation of deep seated coking coal reserves. Efforts will also be made to expeditiously implement Jharia Action Plan to improve the domestic availability of coking coal.

Natural gas

Under the Paris Treaty (COP 21), India intends to reduce the emission intensity of its GDP by 33-35 percent by 2030 from 2005 levels. In order to achieve this target, India needs to find energy efficient resources that are affordable and also available. Natural Gas is one such greener alternative available.

Given the future potential of gas-based technology, in terms of up-gradation of coal based DRI capacities in the MSME sector to gas based route, need for captive gas based power plants for the sector and the alternative of injecting natural gas in blast furnace to reduce dependence on imported metallurgical coal (both coking and PCI), ensuring firm supply of natural gas is imperative to boost the confidence and investment in the gas based steelmaking technology.

In case of gas-based steel plants which have been stranded due to lack of supply of natural gas from domestic sources, options will be evaluated in coordination with Ministry of Petroleum and Natural Gas for restoration of domestic gas supply to steel sector. Efforts will also be made to remove the cascading effect of anomalies in the tax structure.

To ensure long term availability of natural gas, Ministry of Petroleum and Natural Gas will be approached to explore new reserves of natural gas.

Limestone, Manganese Ore and Chromite Ore

The Ministry will suitably facilitate the increased exploration efforts to raise resources of limestone, manganese and chromite ore in the country. In the case of steel grade limestone, high grade low phosphorus manganese ore and high grade chromite lumpy ore, the steel industry is likely to remain dependent on imports. Suitable measures will be taken to encourage imports of these materials since they are available in limited quantities. The industry may also be encouraged to acquire such assets globally to maintain a steady supply of these materials to the growing industry. Necessary efforts will be made for greater exploration of manganese and chromite ore.

Ferro-Alloys

Ferro-alloy is a power-intensive industry. Hence, captive power generation in the ferro-alloys plants will be extensively supported. Since the demand for ferro- alloys is likely to grow along with steel production in the country, the industry may be encouraged to set up larger units to achieve adequate economies of scale. Efforts will be made to provide necessary raw materials linkages and stable supply of power to grow Ferro-alloys units on priority.

Refractory raw material

India is not endowed with high quality reserves of key refractory raw materials viz. bauxite (refractory grade) and magnesite and is largely dependent on imports. Suitable measures and procedural simplifications will be done to support the rising requirement of refractories in the steel sector.

Geologically, fire clay, an important raw material for making refractories, exists concurrently with coal deposits. However, there have been difficulties in full utilisation of the domestic resources found alongside coal deposits. The potential of fire clay extraction will be examined in order to raise supplies of the same to the domestic industries.

Nickel

Nickel has been under constant demand from the ferro-alloys and alloy/stainless

steel industry. Nickel is practically unavailable in the country and the entire quantity of unwrought and other forms of the nickel needs to be imported. Hence, the industry may be encouraged to acquire such assets globally to maintain a steady supply to the industry. Simultaneously, R&D will be pursued to extract Nickel from the lateritic ore overburden available in Sukinda Valley, Orissa.

Ferrous scrap

In order to promote use of scrap based steel-making technologies inter-alia to reduce GHG emission intensity in the country, actions will be initiated to increase availability of ferrous scrap. Options will also be evaluated in coordination with other concerned ministries to develop a scrap segregation (quality-wise), collection, processing and recycling policy.

In order to ensure availability of sufficient quantities of good quality scrap, establishment of an organised and environment friendly steel scrap processing units within the country will be facilitated by promoting modern steel shredding plants.

In order to promote increased use of scrap based steel-making in the country, efforts will be made in coordination with Ministry of Power to ensure availability of electricity to the sector.

Land, water and power

The growth plans of the Indian steel industry have also been hindered by difficulties in land acquisition. Many projects have stuck due to delays in acquisition of adequate land at the preferred locations due to policy and procedural issues. In order to reach crude steel capacity of about 300 MT, additional land requirement is estimated to be ~91,000 acres considering greenfield expansion. To help in early implementation of projects, Ministry will coordinate with respective State Governments to ensure timely availability of litigation-free lands to the industries.

The formation of steel clusters (especially for MSME steel units), service centres and steel processing centres will be facilitated. Creation of related common infrastructure on partnership basis will be promoted to optimise land use. Small and medium steel enterprises, including FDI projects, will be encouraged to be set up in industrial corridors and in clusters under PPP (public private partnership) to ease land acquisition.

It has been observed that the water allocation for steel industry is generally accorded low priority. But it is forecast that by 2030-31, the steel industry will annually require approximately 1500 million cu m of water. Keeping this in view, the Ministry will coordinate with respective State governments to allocate water to steel projects on priority basis. Water conservation at all levels will be encouraged and the industry's efforts will be supported.

Considering the importance of water as a scarce resource, there has been a major thrust by the Government on reduction of discharge from the steel plants which will require innovative solutions and techniques to effectively recycle treated waste water. Hence, the steel industry will be encouraged to pursue plans and strategies to reduce specific water consumption per tonne of steel produced.

Since steel is an energy intensive industry, Ministry will focus on availability of power to steel making facilities. The power required by the industry is estimated to increase to 27,717 MW by 2030-31. Post de-allocation of coal blocks, various units in the steel sector, especially sponge iron plants, have been procuring power at high cost. Ministry of Steel will deliberate with Ministry of Power to make power available to such units through open access.

The Ministry of Steel will facilitate the use of waste heat recovery in Steel plants in consultation with other ministries. Efforts will also be made to facilitate usage of captive power for MSME sector and remove the cascading effect of anomalies in the tax structure.

In view of impending growth scenario in steel sector, Ministry of Steel will facilitate mechanism of Special Purpose Vehicles (SPVs) for Greenfield capacity additions. Steel SPV would acquire the land, get the necessary statutory approvals, water linkage and iron ore linkage and develop the minimum necessary infrastructure for setting up of steel plants. The Steel SPV would thereafter be put to open bidding in a transparent manner for setting up of the steel plant by interested parties. Similarly, the mining SPV will provide long term iron ore linkage to the Steel SPV.

Infrastructure and logistics

Since bulk of the capacity additions are likely to come up in the three eastern states of Odisha, Chhattisgarh and Jharkhand, Ministry of Steel will pursue for the adequate and timely infrastructure growth in these regions to address the increased industry requirement in areas such as railways, roadways, power generation and distribution etc. With the increase in steel demand and production, the requirement of adequate infrastructure will further increase. Government will need to invest heavily in development of evacuation infrastructure to minimise turn-around-time as well as to build the necessary linkages to reduce the length of haulage. Ministry of Steel will also encourage steel players to promote better plant layout design, engineering, technologies and optimum use of economic capacity.

With plans to have large number of blast furnaces in future, the use of pellets shall also increase, requiring grinding of ores/fines to ultra-fine size, hence increased investment in slurry pipelines. This will be encouraged through suitable policy support from the government.

Alternative modes for transportation of raw materials such as slurry pipelines and conveyors will go a long way in reducing the problems of pollution and congested transportation network in the mining areas. To

encourage environment friendly transportation of raw material, efforts will be made to accord all the benefits available to the infrastructure industries, to slurry pipelines also.

To exploit export opportunities and be competitive on account of low cost of ocean freight, the Government of India is contemplating port-led development of steel clusters under the aegis of Sagarmala programme. Establishment of coast based steel plants will suitably be undertaken in conjunction with Ministry of Shipping.

Given the expected growth in demand in steel production and the corresponding requirement for raw materials, the port infrastructure in the country, especially at coking coal importing ports needs to be significantly strengthened. Such ports will be identified in conjunction with the steel industry and would be taken up with Ministry of Shipping to ensure uninterrupted supply of coking coal to steel industry.

Product quality

Bureau of Indian Standards (BIS), has formulated a large number of Indian Standards for most of the iron and steel products produced in the country. Actual implementation of these standards by the industry is however limited, resulting in large scale production, imports and use of sub-standard material, putting infrastructure and public safety at risk.

Quality Control Order: Adoption of the standards by producers and users will be facilitated and mandatory quality certification will be ensured. Recently the Steel and Steel Products (Quality Control) Order and Stainless Steel (Quality Control) Order that mandates Bureau of Indian Standards certification for certain products was introduced. The implementation of this order will be closely monitored in conjunction with Bureau of Indian Standards. Thirty Three (33) steel products have already been notified under the mandatory quality certification mark scheme of BIS. Efforts will be made to bring in additional steel products, which are used in critical end-use applications, under the mandatory scheme to ensure protection of human health, environment, and safety.

MSME sector units, particularly the small re-rolling mills and Induction Furnace Units lack in-house testing facilities. Testing facilities would be set up in steel hubs and already established facilities would be further strengthened to cater to possible rise in demand.

Apart from the adherence to conditions under Steel and Steel Products (Quality Control) Order, Ministry of Steel is also facilitating the production of quality steel, particularly in MSME sector by carrying out R&D and technological interventions and providing financial assistance. More steps in this direction will be encouraged.

Technological efficiency

Though the choice of technology will be determined by entrepreneurs based on techno-economic considerations, Ministry of Steel would encourage adoption of technologies, which:

- are conducive to effective and efficient utilisation of domestic resources with minimum damage to environment and production of high-end and special steel required for sophisticated industrial and scientific applications.
- minimise environmental damage at various stages of steel making.
- optimise resource utilisation and facilitate modernisation of the steel industry so as to achieve global standards of productivity and efficiency.
- led to the development of front end and strategic steel based materials.

Improving the techno-economic performance of steel units is crucial to improving competitiveness of the industry. The Ministry of Steel, in association with suitable agency, will constantly monitor techno-economic performance of all the steel plants within the country vis-à-vis the global best practices. Furthermore, increased use of prepared burden in charge mix and greater use of PCI in blast furnaces will also be promoted.

Steel companies will be encouraged to have strategic joint ventures for production and development of technologically more advanced products. Transfer of technology for production of automotive steel and other special steels will be facilitated by helping set up JV's with global leaders in such products.

The Ministry will encourage the research institutes within the country to develop less resource intensive and less energy intensive steelmaking technologies as well as new products.

MSME steel sector

India over the years has developed a strong MSME sector (comprising of DRI- EAF/ IF route based steel producers and rolling mills) which is unique to India. It embodies the entrepreneurial and innovative strengths of Indian steel industry which turned the unavailability of coking coal – a key input for BF-BOF route into an opportunity.

However, there exist large variations amongst various units in terms of scale of operations, product-mix and technology. The MSME sector, including sponge iron industry, plays an important role in providing employment, meeting demand of some special products required in small volumes and local demand of steel in hinterlands. Apart from this, the sector is also highly export oriented which helps in earning foreign exchange for the country.

Various measures as mentioned below will be taken to improve the performance of MSME steel sector and sponge iron industry:

- Availability of raw materials will be facilitated by providing long term linkages of non-coking coal to sponge iron industry and increasing the iron ore availability in the domestic market.
- Adoption of energy efficient technologies in the MSME steel sector will be encouraged

to improve the overall productivity and reduce energy intensity.

• Small and medium iron and steel making units will be encouraged to be set up in the proposed industrial corridors and clusters for optimal utilisation of land and reach economies of scale.

Value addition in stainless/ alloy steel

Though India is 3rd largest producer of steel globally, it is still a net importer of stainless steel and alloy steel used in high-end applications. With increased demand of steel and need to build 200 MTPA additional capacity by 2030-31, considerable capacity addition of stainless/alloy steel (specialty steel) will also be required. Like most segments of the Indian steel sector, stainless steel industry has also been facing difficulty over the last 3-4 years. Today, the domestic stainless steel industry has a low capacity utilisation of around 50 percent due to the surge in low priced imports and fall in prices. Hence, necessary efforts will be made to protect the existing and upcoming stainless steel facilities from unfair trade practices through suitable trade remedial measures.

Besides, price consideration, import of stainless steel takes place on quality considerations. Country is dependent on import of most of the super duplex, super austenitic and high alloyed varieties of stainless steel for stringent end use applications. Ministry will encourage steel producers to have strategic ventures in production and development of technologically more complex products including high end varieties of stainless steel, alloy steel and electrical steel.

To counter threats from competing materials, promotion of stainless steel through mass campaigns, particularly in rural areas will be encouraged. Greater use of stainless steel in residential or commercial constructions in coastal and earthquake prone areas of the country will also be promoted. Use of high quality stainless steel in drinking water pipelines, packaging of food grains etc. will be promoted to prevent intake of hazardous impurities.

Environment management

While steel companies are themselves addressing the energy and environment issues in the plants through technological upgradation/modernisation, and/or diffusion of energy efficient and environment friendly technologies in the plants, Ministry will facilitate improvement in the energy and environment scenario of steel plants through various forums/mechanisms.

The Ministry will facilitate the formation of a forum to chalk out best practices and promote policies and programs that encourage and expedite the transition to a clean energy economy. Apart from the adherence to these stringent energy efficiency parameters, steel companies will also be encouraged to adopt best available technologies and practices to provide clean and green environment.

Energy and environment management is an on-going process and is directly related to the technologies adopted by the iron and steel plants. So far, Ministry has successfully implemented certain mechanisms such as NEDO model projects in CPSEs and UNDP-AUSAID-MOS steel project in steel re-rolling mills to facilitate improvement in energy efficiency. Efforts will further be made to scale up these mechanisms with enlarged coverage in steel re-rolling mills and induction furnace units.

Considering all waste materials as an economic asset, Ministry will encourage the steel companies to develop a Waste Management Plan for additional impetus on zero-waste or complete waste recycling. Concrete efforts will further be made by Ministry to promote use of iron and steel slag in alternate uses like road making, rail ballast, construction material, soil conditioner etc. Simultaneously, steel plants will be pursued to set up SMS slag weathering/ steam ageing plants to enable them to supply processed/sized SMS slag for road making, rail ballast etc.

The Ministry of Steel will also facilitate the formulation and adoption of standards at par with global best practices with regard to particulate matter emissions, SOx and NOx, water consumption and zero or near zero liquid discharge.

India has recently signed Paris Declaration (COP 21) under which intends to reduce the emission intensity of its GDP by 33-35 percent by 2030 from 2005 levels. Towards this end, Ministry of Steel has already submitted the Intended Nationally Determined Contributions (INDC) for reducing GHG emissions in iron and steel sector which inter-alia projects CO2 emission of 2.2-2.4 tonnes per tonne of crude steel in BF-BOF route and 2.6-2.7 tonnes per tonne of crude steel in DRI-EAF route by the terminal year of 2030. Ministry will find ways and means in consultations with industry to achieve aforesaid targets or even better targets at par with global best practices, wherever possible.

Capacity additions through coal based routes will have far reaching implications for India in terms of environmental degradation. Hence, necessary efforts will be made to have a judicious mix of production routes to reduce the carbon footprint of steel sector in line with the INDC targets.

Safety

Ministry of Steel will continuously monitor the safety performance of all its steel companies including those in private sector through periodic reviews. Necessary efforts will be made to encourage the development of clearly defined safety standards and goals to become a zero accident workplace.

Ministry of Steel will coordinate with steel companies to ensure that on the job trainings on maintaining a safe workplace are provided to employees of the steel companies. Small sized units which cannot afford to conduct such trainings on their own will be facilitated by Steel Research and Technology Mission of India (SRTMI) for organising the same

Trade

India was a net exporter of steel in 2013-14. However, due to global downturn in steel demand and excess capacities in major steelmaking countries such as China and Japan, India witnessed a significant surge in imports in 2014-15, which continued in 2015-16 as well.

Given the current overcapacity and volatility in the global steel industry, appropriate measures in form of MIP mechanisms, Anti-Dumping Duty, Safeguard Duty and Quality Control Order has been taken. Given the cyclical nature of steel industry, there would be situations of trade and financial stress in the sector. Hence, Government will take suitable trade remedial measures in line with WTO guidelines and/or India's Foreign Trade Policy, if need so arise in future.

Steel sector will be encouraged to be globally competitive and develop export market for Indian steel products. Such markets where demand for steel is expected to grow will be targeted.

In addition, certain trade restrictions have been imposed on Indian steel products by other countries. Hence, domestic steel industry will be encouraged to convey their grievances during trade remedial proceedings with those countries.

Considering the importance of information in today's world, the existing institutions such as Joint Plant Committee (JPC) and the Economic Research Unit (ERU) will be further strengthened to meet the requirement of industry and market information related to steel and its raw materials. Continuous strategic research in the steel and related areas, constant tracking of developments in global trade, global investment in the steel industry, emerging technologies in steel and its related areas and data on new mining assets in iron ore, coal, etc. in foreign countries will also be supported. Continuous research on international and domestic steel demand will also be encouraged and risks of investments in foreign countries in steel and related industries will be continuously assessed.

Financial risks

Given the enormity of requirement of financial resources to add the required steel capacity and the current conditions of steel industry, mobilising adequate capital for the industry will be a challenging task in future. Hence, the steel industry will be encouraged to reduce capital costs and remain innovative in developing appropriate structure of the capital to minimise debt and service equity.

The Ministry of Steel will also make necessary efforts to identify bad debts in the steel sector. Such companies will be encouraged to lower their Debt/EBITDA ratio by adopting appropriate debt restructuring in consultation with banks as per the RBI guidelines.

Role of CPSEs and way forward

The Companies Act, 2013 was enacted on 29th August 2013 replacing the Companies Act, 1956. In addition, the Ministry of Corporate Affairs has also notified Companies Rules 2014 on Management and Administration (March 2015), Appointment and Qualification of Directors (January 2015), Meeting of Board and its powers (March 2015) and Accounts (October 2014). The Companies Act 2013 together with the Companies Rules provide a robust framework for corporate governance. These statutory provisions are also applicable to CPSEs.

In the current scenario, steelmaking CPSEs need to not only compete with private integrated steel players and cater to the requirements of the MSME steel sector but are also required to be globally competitive. In order to provide economies of scale, CPSEs will be encouraged to increase focus on their core competencies and divest their non-core assets through mergers and restructuring.

As of now, CPSEs have primarily focused and invested more in brown-field expansion of similar steel capacity with limited value addition in terms of high end product development. Ministry will encourage the CPSEs to develop a policy for future investment, so that impetus could be given for development of value added steel capacity and adoption of latest technologies at par with global best practices.

Besides, the CPSEs will also be encouraged to take leadership role in development of steel industry and the community, adopt a more inclusive business model, increase their CSR spends, invest in R&D for indigenous design and engineering and product development for replacement of import. Further, CPSEs will also be encouraged to take lead in promoting steel usage through developing steel intensive structural designs for roads, railways, bridges, crash barriers etc. with proper technical consultations and setting up of service centers for more customised and de-centralised product delivery.

Further to encourage synergy across similar CPSEs, efforts will be made to ensure appointment of independent directors across similar/independent CPSEs.

Focus on high-end research: Steel Research and Technology Mission of India (SRTMI)

In India, substantial R&D in Iron and Steel sector is currently being carried out by the leading steel companies like SAIL, Tata Steel, JSW Steel, etc. who have accomplished some significant work in the areas of raw material beneficiation, agglomeration and product development. However, in general, major focus of R&D is limited to day to day operations and hence, lacks disruptive innovation.

India's R&D investment in steel sector is limited not only in absolute terms but also as percentage of turnover which is 0.05-0.5 percent as against 1 percent in leading steel companies abroad. The Indian steel companies need to evolve a time bound action plan to enhance their R&D expenditure to at least 1 percent of the turnover.

Efforts will be made through joint collaborative R&D programmes to create manufacturing capabilities for development of process and products in synergy

with natural resources of the country with an aim to minimise damage to the environment.

Ministry of Steel has taken full cognisance of the technological scenario in Indian Steel Industry and has initiated a fresh move for preparation of a comprehensive blue print for promotion of R&D in Iron and steel Sector. To bring in all the stakeholders into one platform and promote steel research on themes of critical and vital national importance, an institutional platform called 'Steel Research and Technology Mission of India' has been established with an objective to spearhead R&D of national importance in iron and steel, creating state-of-art facilities to conduct cutting-edge research, develop expertise and skill development, manage human resources and bolster a tripartite synergy amongst industry, national R&D laboratories and academic institutes.

In order to boost innovation in the steel sector (future technologies), a time bound action plan will be evolved under the aegis of SRTMI to enhance the R&D expenditure of Indian steel CPSEs. The Ministry through SRTMI will also encourage corporates in steel sector, private and public sector alike, to direct certain sums from their profits towards continuous industry collaborative research. Apart, they would also be encouraged to set up their own steel technology centres and steel sector oriented research and education wings at universities in order to focus on technology based solutions for development of high quality, low cost steel products and to build greater interface between academia, R&D institutions and industry.

Product development is yet another challenge faced by the Indian steel industry which has given rise to import of most of the value added products like automotive steel for high end applications, electrical steel like CRGO and amorphous steel as well as special steel and alloys for the Power Equipment, Aerospace, Defence and Nuclear applications. Production of these value added, front end, and strategic products will be facilitated through acquisition of foreign technology by setting up of joint ventures, or subsidiaries of foreign companies or by indigenous development. Measures will also be taken to ensure development of all such special steel and alloys to minimise import dependence.

Indian steel industry is currently importing technology and critical equipment and systems for steel plants. Hence, necessary efforts will be made under the aegis of SRTMI to raise the level of R&D and acquire best in class manufacturing capabilities to develop all these equipment and systems.

CPSEs will be encouraged to reduce manpower and overhead expenses based on domestic and peer group benchmarking. Besides, the CPSEs will also be encouraged to right size their manpower over time through Superannuation/Separation/intakes in conformance with technological advances and suitably exercise the option of Voluntary Retirement Scheme (VRS) to improve labour productivity.

The Ministry through SRTMI will also work in association with Ministry of Skill Development and Entrepreneurship to re-structure the pedagogy within its associated technical institutes. As a part of skill development initiative, the Ministry will coordinate with the technical institutes under its aegis and INSDAG to re-align the education system to attract, facilitate and generate steel domain experts.

Power to amend the Policy

Notwithstanding anything contained in the foregoing paras, the Ministry of Steel, with the approval of Competent Authority, may amend various aspects of this Policy from time to time depending upon the experience gained during implementation, market dynamics, end user interest etc.

List of Abbreviations

BF-BOF	Blast Furnace – Blast Oxygen Furnace
CAGR	Compounded Annual Growth Rate
CDI	Coal Dust Injection
CDR	Corporate Debt Restructuring
CIL	Coal India Limited
CIS	Commonwealth of Independent States
COP	Conference of the Parties
CPSE	Central Public Sector Enterprises
CRGO	Cold Rolled Grain Oriented
DPE	Department of Public Enterprises
DRI	Direct Reduced Iron
EAF	Electric Arc Furnace
EBT	Eccentric Bottom Tap
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GDP	Gross Domestic Product
GST	Goods and Services Tax
IF	Induction Furnace
INDC	Intended Nationally Determined Contribution
MMSCMD	Million Metric Standard Cubic Metre per Day
MoPNG	Ministry of Petroleum and Natural Gas
MoS	Ministry of Steel
MT	Million Tonnes
MTPA	Million Tonnes per Annum
NMDC	National Mineral Development Corporation
NPA	Non-Performing Assets
PPP	Public Private Partnership
R&D	Research and Development
REC	Renewable Energy Certificates
R-LNG	Regasified Liquefied Natural Gas
UHP	Ultra High Power
UNDP	United Nations Development Programme
VAT	Value Added Tax
WTO	World Trade Organisation

Steady rise in engineering exports

Optimism over rise in engineering exports following positive signs of growth in global export markets

OVERSIGHT

POLICY WONK

INDIA'S merchandise exports grew for the fourth straight month and reached its 21-month high in absolute terms during December 2016. Exports were recorded at $23.8 billion during the last month of 2016 as against $22.6 billion registering 5.72 percent growth mainly due to rise in oil prices and depreciation of Indian rupee despite no substantial change in the global demand. Cumulative value of exports during April-December 2016-17 rose to $198.81 billion as against $197.33 billion during the same period last year registering a positive growth of 0.75 percent.

Sectors such as petroleum, engineering, gems and jewellery and pharmaceuticals performed well during December 2016 and remained top contributors to Indian exports.

Imports also rose for the third consecutive month in December 2016 but this time it was meagre at 0.5 percent. Merchandise imports went up to $34.3 billion in December 2016 from $34.1 billion during the same month last year. Cumulative value of imports, however, recorded a decline of 7.42 percent during the first nine months of fiscal 2016-17 as it was down to $275.4 billion during April-December 2016-17 from a higher $297.4 billion during the same period last year.

Trade deficit declined to $10.3 billion in December 2016 as against a wider $13 billion in November 2016. Cumulative figures

HIGHLIGHTS

India's overall external trade scenario

- India's overall exports grew 5.7 percent in December and imports by 0.5 percent, compared to the year-ago period, leaving a trade deficit of $10.3 billion;
- Outbound shipments were $23.8 billion, the highest in close to two years; it was $20 billion in November.
- A weaker rupee against the dollar lent competitiveness to Indian exports. It went to 67.93 a dollar in December, from Rs 66.62 in September and Rs 67.53 in June.

Engineering exports scenario

- India's engineering exports growth accelerated to 15.42 percent in the third quarter.
- Exports during April-December 2016 witnessed a 2.9 percent growth YoY due to substantial decline during the months of April and July 2016.
- Overseas shipment of engineering products from India was recorded at $5.7 billion in December 2016 as against $4.7 billion in December 2015 registering a growth of 20.8 percent over the same month last year.
- The growth in exports was higher in December 2016 as compared to the 11.7 percent recorded in the previous month.
- Out of 33 engineering panels, 23 panels recorded positive growth in exports.
- Iron and steel exports jumped by over 100 percent during December 2016 with an overseas shipment of $785.05 million from $392.33 million in the same month last year.
- Electrical machinery, automobiles, medical and scientific equipments, railway and transport equipments, office equipments, accumulator and batteries also registered positive growth during April-December 2016 over the same period last year.
- EU ranks as the region with highest shipment of engineering products from India during December 2016 with a share of more than 21 percent of total engineering exports.
- India's engineering exports to CIS and ASEAN+2 countries recorded highest noteworthy positive growth in April-December 2016-17.
- Sharp decline in engineering exports observed in Africa, Latin America, Middle East and West Asia (MEWA) and North America.

also reflected the same trend as trade deficit for April-December 2016-17 was estimated at $76.5 billion, which was 23.51 percent lower than that of the same period last year.

Engineering exports

India's engineering exports followed the broader merchandise trend during December 2016 by securing year-on-year growth for the fifth straight month. Overseas shipment of engineering products from India was recorded at $5.7 billion in December 2016 as against $4.7 billion in December 2015 registering a growth of 20.8 percent over the same month last year. The growth was higher in December 2016 as compared to the 11.7 percent recorded in the previous month. The share of engineering exports in India's total merchandise exports was marginally down to 23.5 percent in December 2016 from 24.1 percent in the previous month. Cumulative engineering exports during April-December 2016, however, witnessed a much lower 2.9 percent growth year-on-year due to substantial decline during the months of April and July 2016. The monthly engineering figures for the first nine months of 2016-17 vis-à-vis 2015-16 are depicted in **Table1. Figure1** depicts the monthly trend in engineering exports for 2015-16 and 2016-17.

Engineering sector is an important component of the broader manufacturing sector and the share of engineering production in overall manufacturing output is quite significant. Now, as production and exports are directly correlated, some correlation between manufacturing production growth and engineering export growth is very likely to exist. Hence, a broad analysis of industrial production, especially of manufacturing sector is effective in the context of engineering export analysis as manufacturing has over 75 percent weightage in India's industrial production. The downfall in Indian engineering exports has been arrested in May 2016 after 8 months and growth continued in June 2016. During fiscal 2015-16, November was the first month to concede a decline in year-on-year manufacturing production when engineering export suddenly dropped by around 30 percent. Decline in exports moderated slightly in December 2015 when decline in manufacturing also moderated. However, manufacturing output declined at a faster pace in January 2016 while engineering exports witnessed slightly slower decline. The month of February witnessed a substantial slowdown in the pace of year-on-year decline in engineering exports

and manufacturing also came to growth path. However, in March 2016, manufacturing output again declined while the rate of decline in exports was largely flat over the month. April 2016 saw a higher decline in engineering exports accompanied by a bigger fall in manufacturing production but during the next three months, both engineering exports and manufacturing production moved in the same direction. During May and June 2016, both engineering exports and manufacturing bounced back to year-on-year growth while in July 2016, both of them slipped to negative growth. In the month of August and September 2016 also both moved in the same direction. In August, engineering exports came back to growth path and accelerated further in September. Manufacturing output, on the other hand, saw a lower decline in August and then witnessed growth in September. In October, engineering exports recorded a sudden jump in growth but manufacturing saw just the reverse, a decline in production from feeble growth in September 2016. In November 2016 however, both moved in the same direction showing accelerated year-on-year growth over the previous month. The overall IIP, the standard measure for industrial output, stood at 175.8 in November 2016 as against 178.1 in October and 179.4 in September.

The growth rates in engineering exports and the growth in manufacturing in the country in the current fiscal in given in **Table2.**

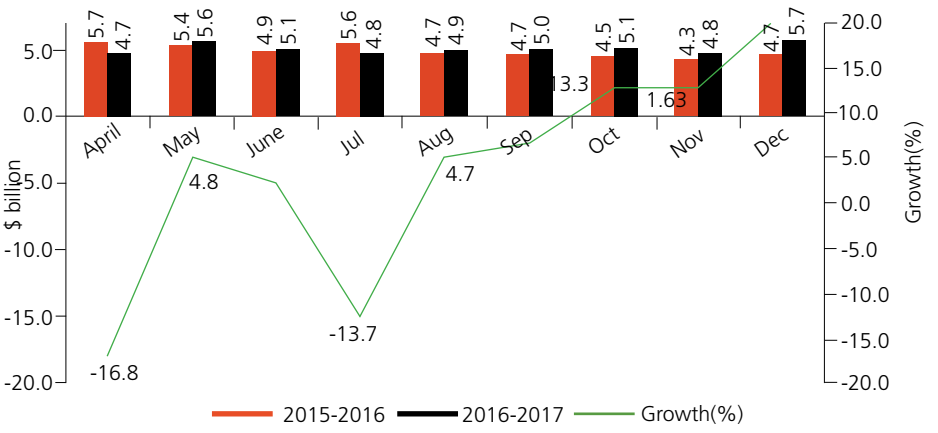
An analysis of the engineering export and manufacturing growth data for the last fiscal also established some correlation between the two. India's engineering exports conceded bigger decline during May 2015 in comparison to the previous month while manufacturing growth also decelerated. The pace of decline in export growth slowed down in June and manufacturing growth also strengthened. Exports registered marginal growth during July 2015 but growth of manufacturing production decelerated.

Table1: Engineering exports ($ million)

Month	2015-16	2016-17	Growth (%)
April	5676.59	4724.22	-16.78%
May	5354.43	5613.87	4.85%
June	4936.26	5053.85	2.38%
Quarter 1	15967.28	15391.94	-3.60%
July	5559.65	4768.09	-14.24%
August	4653.93	4877.27	4.80%
September	4699.73	5026.28	6.95%
Quarter 2	14913.31	14671.64	-1.62%
October	4475.58	5076.35	13.42%
November	4321.78	4826.7	11.68%
December	4690.16	5663.89	20.76%
Quarter 3	13487.52	15566.94	15.42%
April-December	44368.11	45630.52	2.85%

Source: Department of Commerce, Government of India

Figure1: Trends in monthly engineering exports for 2016-17 vis-à-vis 2015-16 ($ billion)



Source: EEPC India analysis

Export growth and manufacturing growth moved in opposite directions in August and September 2015 but the last three months of 2015 saw both of them moving in the same direction. Decline in engineering exports decelerated in October and manufacturing growth reached its several years' high. November 2015 just saw the reverse when engineering exports declined to its highest pace of the last fiscal and manufacturing production declined for the first time in 2015-16. Then in December 2015, fall in exports moderated slightly while the pace of decline in manufacturing also slowed down to nearly half the rate of the previous month. January 2016, however, saw a slower rate of decline in engineering exports coupled with a bigger fall in manufacturing growth. The month of February reflected the link between these two when decline in engineering export slowed down significantly and manufacturing bounced back to growth. In the last month of fiscal 2015-16, decline in manufacturing was largely the same over the month but manufacturing growth again went back to negative.

We also present the month-wise corresponding revised engineering export figures for 2015-16 as opposed to 2014-15 in **Table3**.

Impact of exchange rate

How has the exchange rate been in December 2016 vis-à-vis December 2015? In **Table4** we look at the average exchange rate for December 2016 vis-à-vis December 2015.

The official exchange rate of the rupee vis-à-vis the dollar during December 2016 has depreciated by 1.96 percent to that of the same month last year.

Engineering panel-wise export analysis

We begin by looking at the engineering panel-wise exports for the month of December 2016 vis-à-vis December 2015. The data is given in **Table5**.

Some factors that need to be noted in the panel-wise analysis of the December 2016 engineering export data are:

• The overall scenario was somewhat improved as compared to that of November 2016. Out of 33 engineering panels, 23 panels recorded growth in exports over the same month last year (as against 19 in November 2016) while the remaining 10 panels conceded decline during the month of December 2016.

• Iron and steel exports jumped by over 100 percent during December 2016 with an overseas shipment of $785.05 million from $392.33 million in the same month last year. Cumulative figure showed 23.6 percent growth of exports during April-December 2016 to $5334.07 million from $4315.89 million during the same period last fiscal. Products of iron and steel, however, managed to export only 2.9 percent more during December 2016 over the same month last year while its cumulative exports declined by 7.4 percent to $4254.2 million during April-December 2016 from $4596.32 million during the same period last in 2015.

Table2: Engineering exports growth vis-à-vis manufacturing growth (2015-16)

Month/Year	Engg exports growth (%)	Manufacturing growth (%)
April-March 2015-16	**-16.93**	**2.0**
April 2016	-16.78	-3.6
May 2016	4.84	0.7
June 2016	2.38	1.0
April-June 2016	**-3.61**	**-0.6**
July 2016	-14.24	-3.5
August 2016	4.80	-0.3
September 2016	6.95	0.9
July-September 2016	**-1.62**	**-1.0**
October 2016	13.42	-2.4
November 2016	11.68	5.5
December 2016	20.76	N A

Source: Department of Commerce and CSO

Table3: Revised engineering exports, 2015-16 ($ million)

Quarter	Month	2014-15	2015-16	Growth Rate in %
Quarter 1	April	5708.04	5676.57*	-0.55*
	May	6013.33	5354.44*	-10.96*
	June	5205.21	4936.26*	-5.17*
Quarter 2	July	5499.76	5559.65*	1.09*
	August	6380.66	4653.93*	-27.06*
	September	6329.07	4699.73*	-25.74*
Quarter 3	October	5007.85	4475.58*	-10.63*
	November	6403.45	4321.78*	-32.51*
	December	6710.57	4690.16*	-30.11*
Quarter 4	January	6707.02	4757.43	-29.07
	February	4975.32	4419.95	-11.16
	March	5829.71	5175.65	-11.22
Total exports		**70769.99**	**58721.13***	**-17.03***

**Revised figures as per latest estimates by DGCI&S*

Table4: Average exchange rate

December	Average exchange rate 1 USD to INR
2015	66.59
2016	67.90

Source: Calculated from RBI archive

• Among the 7 nonferrous metals and products made of nonferrous metals, only nickel and its products recorded a decline in exports during December 2016 and the fall was substantial at 81.8 percent. During November 2016, the fall in the exports of nickel and products was 79 percent. Among the gainers, exports of zinc and its products grew by around 100 percent while lead and its products recorded around 54 percent growth. The highest exporting nonferrous metal aluminium and its products recorded

Table5: Trends in engineering panel-wise exports for December2016 and April-December 2016-17 ($ million)

Sl no.	Panel	Dec 15	Dec 16	Growth %	Apr-Dec 2015-16	Apr-Dec 2016-17	Growth %
1. Iron and steel and products made of iron and steel							
A	Iron and steel	392.33	785.05	100.10	4315.89	5334.07	23.59
B	Products of iron and steel	497.94	512.12	2.85	4596.32	4254.2	-7.44
Subtotal		**890.27**	**1297.17**	**45.71**	**8912.21**	**9588.27**	**7.59**
2. Nonferrous metals and products made of nonferrous metals							
A	Copper and products	207.09	309.23	49.32	1979.92	1821.25	-8.01
B	Aluminium and products	249.85	326.74	30.77	1963.58	2286.05	16.42
C	Zinc and products	52.15	104.22	99.85	455.92	361.66	-20.67
D	Nickel and products	32.22	5.88	-81.75	437.58	83.53	-80.91
E	Lead and products	16.11	24.8	53.94	143.24	126.38	-11.77
F	Tin and products	0.43	1.8	318.60	41.02	5.46	-86.69
G	Other nonferrous metals	37.33	39.22	5.06	319.6	325.51	1.85
Subtotal		**595.18**	**811.89**	**36.41**	**5340.86**	**5009.84**	**-6.20**
3. Industrial machinery							
A	Industrial machinery like boilers, parts, etc	61.83	47.06	-23.89	489.55	499.88	2.11
B	IC engines and parts	189.2	158.33	-16.32	1595.73	1600.23	0.28
C	Pumps of all types	61.4	80.8	31.60	532.57	559.62	5.08
D	Air condition and refrigerators	81.67	84.72	3.73	775.1	716.57	-7.55
E	Industrial machinery for dairy, food processing, textiles etc	446.25	421.96	-5.44	3453.08	3356.93	-2.78
F	Machine tools	34.86	34.76	-0.29	298.22	336.55	12.85
G	Machinery for injecting moulding, valves and ATMs	106.55	117.53	10.31	931.87	928.98	-0.31
Subtotal		**981.76**	**945.16**	**-3.73**	**8076.12**	**7998.76**	**-0.96**
4. Electrical machinery		**291.68**	**385.33**	**32.11**	**2733.82**	**3375.96**	**23.49**
5. Auto and auto components							
A	Motor vehicle/cars	593.41	791.68	33.41	5004.41	5706.26	14.02
B	Two and three wheelers	166.11	141.58	-14.77	1372.27	1213.67	-11.56
C	Auto components/part	383.69	378.43	-1.37	3112.38	3141.51	0.94
Subtotal		**1143.21**	**1311.69**	**14.74**	**9489.06**	**10061.44**	**6.03**
6. Aircrafts and spacecraft parts and products		**151.9**	**220.7**	**45.29**	**2904.15**	**2260.02**	**-22.18**
7. Ships, boats and floating products and parts		**115.31**	**73.25**	**-36.48**	**2414.01**	**2518.65**	**4.33**
8. Miscellaneous items							
A	Medical and scientific instruments	108.99	124.22	13.97	876.51	1018.69	16.22
B	Railway transport	6.4	21.71	239.22	58.6	140.49	139.74
C	Hand tools and cutting tools	55.13	53.39	-3.16	487.44	475.1	-2.53
D	Electrodes, accumulators	3.15	3.58	13.65	31.67	31.05	-1.96
E	Accumulator and batteries	15.62	18.07	15.69	143.29	163.86	14.36
F	Bicycle and parts	24.72	26.28	6.31	215.9	214.75	-0.53
G	Cranes, lifts and winches	31.78	28.34	-10.82	285.52	299.47	4.89
H	Office equipments	3.92	14.88	279.59	64.56	91.1	41.11
I	Other construction machinery	99.02	131.35	32.65	818	781.08	-4.51
J	Prime mica and mica products	1.24	1.81	45.97	13.06	13.54	3.68
K	Other misc. items	170.88	195.07	14.16	1503.33	1588.45	5.66
Subtotal		**520.85**	**618.7**	**18.79**	**4497.88**	**4817.58**	**7.11**
Grand total		**4690.16**	**5663.89**	**20.76**	**44368.11**	**45630.52**	**2.85**

Source: Department of Commerce, Government of India

Table6: Engineering exports country wise, 2016-17 ($ million)

Country	Dec 2015	Dec 2016	Growth %	Apr-Dec 2015-16	Apr-Dec 2016-17	Growth %
USA	575.41	648.94	12.78	5211.53	4960.07	-4.83
China	204.45	253.86	24.17	1624.32	1227.27	-24.44
UK	159.86	248.90	55.70	1656.32	1858.49	12.21
Mexico	205.26	234.44	14.21	1314.80	1826.14	38.89
UAE	319.17	226.72	-28.97	3098.42	2872.81	-7.28
Germany	160.45	214.46	33.66	1511.11	1605.67	6.26
Singapore	79.45	202.92	155.40	1556.43	1615.25	3.78
Italy	124.21	201.79	62.45	1094.46	1371.27	25.29
Bangladesh	115.72	185.27	60.10	1061.92	1435.44	35.17
Malaysia	93.24	166.61	78.69	1134.75	1691.15	49.03
Nepal	88.25	154.33	74.89	926.57	1597.74	72.44
Belgium	57.53	146.17	154.08	521.42	810.66	55.47
Korea	138.89	141.93	2.19	973.83	976.80	0.31
Taiwan	33.52	131.87	293.43	352.24	533.21	51.38
Vietnam	61.70	121.59	97.07	491.42	633.70	28.95
South Africa	99.73	115.50	15.81	1059.78	779.61	-26.44
Turkey	124.18	105.43	-15.10	959.62	1189.87	23.99
France	98.19	104.51	6.44	798.15	1009.45	26.47
Saudi Arabia	145.68	100.70	-30.88	1007.18	887.01	-11.93
Indonesia	61.22	100.44	64.07	592.85	975.04	64.47
Sri Lanka	96.97	96.37	-0.62	2052.19	1048.75	-48.90
Netherlands	63.43	94.98	49.74	691.24	668.51	-3.29
Spain	50.48	88.82	75.96	515.50	688.42	33.55
Thailand	65.20	80.72	23.81	621.15	636.00	2.39
Japan	64.95	70.37	8.36	861.58	581.95	-32.46

Note: Highlighted figures indicate negative growth,
Source: Department of Commerce, Government of India

30.8 percent growth during December 2016. Cumulative results just showed the opposite trend where five out of seven panels conceded negative growth during April-December 2016 barring aluminium and its products and other nonferrous metals.

• Industrial machinery recorded decline in exports both on a monthly basis in December 2016 and on a cumulative basis during April-December 2016. However, exports of pumps recorded decent growth in December 2016 and marginal growth during April-December 2016. The highest exporting segment of the industrial panel, industrial machinery for dairy, food processing, textiles etc, registered decline in exports both on monthly and cumulative basis. Exports of another major segment, IC engines and parts, grew marginally on a cumulative basis but recorded noticeable decline during December 2016.

• The electrical machinery and equipments panel achieved sizeable growth in December at 32.1 percent. On a cumulative basis, the growth was somewhat lower at 23.5 percent during April-December 2016 over the same period last fiscal.

• Exports of aircrafts and spacecraft parts and products recorded 45.3 percent growth during December 2016 but conceded 22.2 percent decline cumulatively during the first eight months of the current fiscal over the same period last year.

• Among other panels, motor vehicles/cars grew 14 percent during April-December 2016. Medical and scientific equipments, railway and transport equipments, office equipments, accumulator and batteries also registered positive growth during April-December 2016 over the same period last year.

Top 25 destinations for engineering exports

We now look at the export scenario of the top 25 nations that had the highest demand for Indian engineering products during December 2016 over December 2015 in absolute value. Country-wise cumulative figures

Table7: Region-wise exports trend ($ million)

Region	Dec 2015	Dec 2016	Growth %	Apr-Dec 2015-16	Apr-Dec 2016-17	Growth %
Africa	539.57	528.22	-2.10	5121.18	4276.49	-16.49
ASEAN+2	479.53	798.88	66.60	5369.45	6617.18	23.24
CIS	59.49	55.91	-6.03	417.32	545.54	30.73
EU	874.61	1263.86	44.51	8150.11	9667.33	18.62
Latin America	279.01	281.28	0.82	2209.84	2074.88	-6.11
Middle East and West Asia (MEWA)	680.35	595.65	-12.45	6279.26	5782.49	-7.91
N. America	827.83	920.76	11.23	6880.29	7095.06	3.12
NE Asia	419.63	478.15	13.95	3603.76	2885.96	-19.92
South Asia	350.47	477.55	36.26	4368.57	4458.53	2.06
Others	179.66	263.50	46.66	1968.32	2226.80	13.13
Grand total	**4690.16**	**5663.77**	**20.76**	**44368.10**	**45630.28**	**2.84**

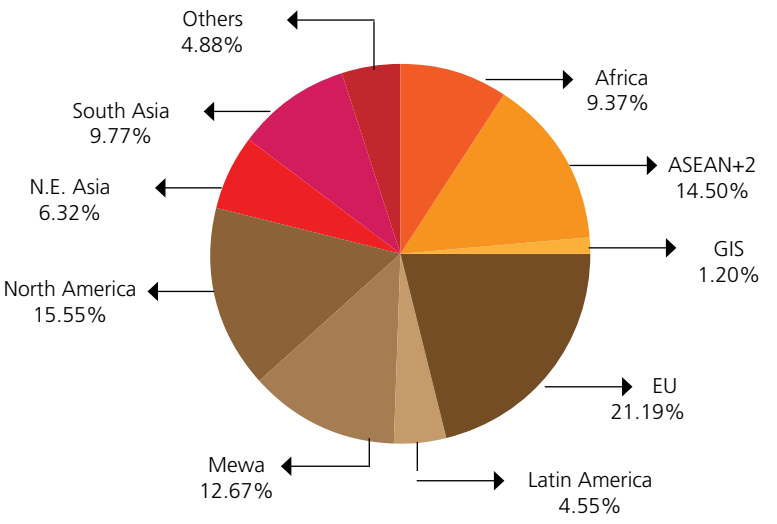
*Note: *Figures have been rounded off. **Myanmar has been included in ASEAN+2 and not in South Asia, since ASEAN is a formal economic grouping.*
Source: DGCI&S; Department of Commerce, Government of India

for April-December 2016-17 have also been taken into consideration to see the trend of India's engineering exports in the current fiscal.

The country wise engineering export figures for December 2016 show the following:

- In December 2016, 21 out of the top 25 countries recorded year-on-year growth in engineering exports from India while the remaining six conceded decline over the same month last year.
- Although USA ranked to be the top exporting destination for India's engineering products in December 2016, it registered negative growth both monthly and cumulatively April-December 2016-17 over the same period last fiscal.
- Like the previous month all European nations falling under the top 25 engineering export destinations such as UK, Germany, Italy, Belgium, France and Spain, recorded positive growth during April-December 2016-17 over April-December 2015-16 as well as in December 2016 over December 2015.
- Only in the case of the Netherlands, India's engineering exports recorded positive growth in December but negative growth in terms of cumulative exports.

Figure2: India's region wise exports during April-December 2016-17



Source: EEPC India analysis

- Among the ASEAN countries Indonesia recorded the highest growth in engineering exports from India in April-December 2016-17.
- Out of 224 exports destinations of Indian engineering goods, top 25 nations accounted for 73.37 percent of India's total engineering exports during April-December 2016-17.
- Overall, India's engineering exports to its top 25 destinations registered a rise in growth of 5.65 percent in April-December 2016 over the same period in the previous year.

Regional distribution of engineering exports

We now look at the regional distribution of engineering exports for April-December 2016-17 as opposed to April-December 2015-16. We also look at the trend in December 2016 vis-à-vis December 2015. **Table7** and **Figure2** gives this picture.

- EU ranks as the region with highest ship-

ment of engineering products from India during December 2016 with a share of more than 21 percent of total engineering exports.

• India's exports to Africa registered sharp decline both in monthly and cumulative terms.

• India's engineering exports to CIS countries recorded highest positive growth in April-December 2016-17 over the same period in the previous year.

• Engineering exports to ASEAN+2 also recorded noteworthy positive growth both in monthly and cumulative terms.

• India's exports to the following regions registered sharp decline in the period under consideration:

• Latin America
• Middle East and West Asia (MEWA)
• N America
• NE Asia

Performance of important products

We now analyse the performance of some of the important products during December 2016. We have taken the major panels and computed high growth and sharp declines to get an idea of the current trade pattern (**Tables 8-16**).

Export of iron and steel

• Malaysia recorded highest growth in exports of Indian iron and steel during April-December 2016 followed by Vietnam.

• Exports to Iran, USA and Netherlands declined sizeably during April-December 2016 over the same period last year.

Export of products of iron and steel

• In case of iron and steel products, exports to USA conceded decline during April-December 2016. Some of the Major European nations also recorded decline in exports from India during the same time period.

• Kuwait saw highest growth in imports of Indian iron and steel products followed by Oman and Nepal. All of these three nations achieved triple-digit growth in exports during the first nine months of the current fiscal.

Export of industrial machinery

• Once again, USA recorded nearly 15 percent decline in import of India's industrial machinery during April-December 2016. Canada recorded highest decline during this period followed by Saudi Arabia.

• Along with iron and steel products, Kuwait also recorded highest growth in imports of India's industrial machinery among all nations on a cumulative basis. Russia witnessed second highest growth in this regard.

Export of automobiles

• In case of automobiles, Israel and Indonesia are the highest growth achievers in their Indian exports on a cumulative basis.

• Nigeria and UAE conceded substantial decline in imports of Indian automobiles during the first nine months of 2016-17.

Export of nonferrous metals

• Exports of India's nonferrous metal to Italy recorded highest growth among all exporting nations during April-December 2016 while Spain registered second highest growth during this time period.

• China continued to see decline in imports from India on a cumulative basis.

Table8: Export of iron and steel ($ million)

Export partners	Dec 15	Dec 16	Growth %	Apr-Dec 15-16	Apr-Dec 16-17	Growth %
HIGH CUMULATIVE GROWTH						
Malaysia	8.67	12.15	40.12	36.57	139.01	280.16
Vietnam	3.99	66.49	1566.27	58.26	209.65	259.87
Belgium	22.64	92.71	309.53	197.31	453.58	129.88
Spain	12.79	23.44	83.24	93.58	204.58	118.63
Mexico	3.70	4.74	28.13	52.31	112.72	115.50
Bangladesh	10.35	40.25	288.82	151.49	304.25	100.84
Indonesia	11.32	32.42	186.34	103.50	173.53	67.66
Taiwan	10.52	34.15	224.72	98.01	162.44	65.75
China	17.05	48.36	183.57	119.34	194.74	63.18
SHARP CUMULATIVE DECLINE						
Germany	6.72	12.46	85.25	80.88	70.65	-12.64
Poland	7.45	9.70	30.18	64.08	52.68	-17.79
Netherlands	7.38	14.25	93.01	112.70	91.54	-18.78
USA	18.74	36.31	93.81	330.83	215.81	-34.77
Iran	26.95	5.76	-78.64	303.62	72.87	-76.00

Source: Department of Commerce, Government of India

Table9: Export of products iron and steel ($ million)

Export partners	Dec 15	Dec 16	Growth %	Apr-Dec 15-16	Apr-Dec 16-17	Growth %
HIGH CUMULATIVE GROWTH						
Kuwait	8.70	15.49	78.02	36.21	138.43	282.34
Oman	8.53	5.67	-33.55	47.32	100.79	112.99
Nepal	2.37	3.74	57.53	31.33	66.08	110.91
Saudi Arabia	18.33	25.68	40.11	202.22	250.73	23.99
Italy	11.51	13.29	15.50	113.80	127.35	11.91
Belgium	8.97	9.13	1.71	63.79	70.89	11.13
SHARP CUMULATIVE DECLINE						
Australia	7.73	8.49	9.84	73.96	62.11	-16.03
Canada	11.72	13.25	13.11	108.09	94.20	-12.84
Germany	31.07	27.76	-10.66	272.49	254.97	-6.43
Spain	7.09	6.94	-2.12	77.44	60.72	-21.58
UK	23.65	22.88	-3.26	221.76	188.14	-15.16
USA	105.31	121.76	15.62	952.90	863.28	-9.41

Source: Department of Commerce, Government of India

Table10: Export of industrial machinery ($ million)

Export partners	Dec 15	Dec 16	Growth %	Apr-Dec 15-16	Apr-Dec 16-17	Growth %
HIGH CUMULATIVE GROWTH						
Kuwait	4.01	26.30	555.53	35.21	200.79	470.28
Russia	8.03	6.22	-22.45	68.79	157.25	128.61
Bhutan	5.40	5.79	7.29	37.91	73.40	93.63
Malaysia	8.21	42.56	418.61	114.12	212.85	86.52
Nepal	12.82	25.70	100.41	129.27	222.68	72.26
Myanmar	4.08	9.95	143.81	38.38	56.62	47.53
Brazil	10.44	20.48	96.19	115.51	152.17	31.74
Australia	7.03	12.97	84.53	57.25	74.26	29.70
Ethiopia	4.80	4.49	-6.43	44.61	53.05	18.93
Bangladesh	34.65	37.74	8.91	274.39	322.59	17.56
SHARP CUMULATIVE DECLINE						
Canada	19.91	7.00	-64.81	114.52	64.41	-43.76
Saudi Arabia	58.73	17.98	-69.39	299.03	172.20	-42.41
Nigeria	18.51	11.49	-37.96	164.11	113.08	-31.10
Netherlands	12.21	10.75	-11.99	118.52	88.75	-25.12
UK	33.99	31.23	-8.11	382.63	289.16	-24.43
Belgium	8.85	10.65	20.35	99.19	77.30	-22.07
South Africa	16.93	10.89	-35.69	113.55	88.66	-21.92
Japan	13.70	8.61	-37.13	115.63	90.33	-21.88
USA	144.42	137.72	-4.64	1289.91	1098.13	-14.87
Oman	11.20	9.90	-11.59	97.47	83.29	-14.55

Source: Department of Commerce, Government of India

Table11: Export of automobiles ($ million)

Export partners	Dec 15	Dec 16	Growth %	Apr-Dec 15-16	Apr-Dec 16-17	Growth %
HIGH CUMULATIVE GROWTH						
Israel	4.58	6.05	32.17	19.63	65.89	235.74
Indonesia	1.78	13.66	665.96	26.16	78.29	199.26
Nepal	25.61	34.41	34.39	151.03	369.15	144.42
Belgium	0.62	17.72	2758.17	26.82	63.95	138.44
Turkey	2.15	0.57	-73.64	26.44	62.21	135.26
Germany	2.53	18.41	626.93	72.06	150.50	108.85
Netherlands	8.78	25.19	186.95	84.70	145.36	71.61
Mexico	136.82	177.04	29.40	731.87	1209.46	65.26
SHARP CUMULATIVE DECLINE						
Nigeria	31.56	13.57	-57.01	298.43	123.30	-58.68
UAE	23.88	13.01	-45.52	185.65	88.16	-52.51
Colombia	45.74	22.42	-50.99	258.83	158.77	-38.66
Sri Lanka	46.30	39.89	-13.84	609.59	388.05	-36.34
Kenya	5.72	7.27	27.19	85.44	57.76	-32.40
Egypt	13.73	4.25	-69.07	145.60	99.73	-31.50
Australia	3.14	2.47	-21.16	70.85	50.79	-28.32
South Africa	47.87	71.69	49.76	514.27	430.77	-16.24

Note: Automobiles sector includes motor vehicles and two- and three-wheelers, Source: Department of Commerce, Government of India

Table12: Export of nonferrous metals ($ million)

Export partners	Dec 15	Dec 16	Growth %	Apr-Dec 15-16	Apr-Dec 16-17	Growth %
HIGH CUMULATIVE GROWTH						
Italy	3.01	26.04	764.23	27.41	117.28	327.92
Spain	0.91	11.80	1201.71	19.76	57.13	189.18
Bangladesh	6.63	21.54	224.93	50.97	98.38	93.02
Oman	2.76	9.94	259.45	37.56	68.91	83.47
Taiwan	12.59	89.99	614.57	174.79	272.28	55.78
Netherlands	3.61	9.45	161.86	38.51	57.61	49.59
Indonesia	2.27	14.56	540.41	69.34	94.56	36.37
Japan	6.48	11.17	72.34	50.44	63.04	24.99
SHARP CUMULATIVE DECLINE						
China	132.08	137.83	4.35	961.07	469.24	-51.17
Thailand	4.11	10.38	152.56	63.31	50.78	-19.79
Nepal	5.87	9.34	58.97	82.64	73.50	-11.05
Mexico	23.00	9.41	-59.07	156.77	141.88	-9.50

Source: Department of Commerce, Government of India

Table13: Export of electrical machinery and components ($ million)

Export partners	Dec 15	Dec 16	Growth %	Apr-Dec 15-16	Apr-Dec 16-17	Growth %
HIGH CUMULATIVE GROWTH						
Algeria	1.43	13.53	847.80	15.03	78.26	420.53
Turkey	6.02	15.72	161.29	48.42	139.56	188.21
Kuwait	3.09	6.83	120.87	19.10	52.65	175.59

Table13: Export of electrical machinery and components ($ million) contd

Export partners	Dec 15	Dec 16	Growth %	Apr-Dec 15-16	Apr-Dec 16-17	Growth %
HIGH CUMULATIVE GROWTH						
Japan	4.42	9.99	125.87	42.92	97.02	126.06
Malaysia	6.71	5.72	-14.78	39.56	71.55	80.84
Nepal	2.47	5.84	136.21	41.89	70.09	67.31
UK	13.79	29.24	112.05	158.63	237.93	49.99
USA	41.78	57.85	38.46	391.32	525.57	34.31
SHARP CUMULATIVE DECLINE						
Saudi Arabia	6.72	3.93	-41.43	71.82	38.07	-47.00
Nigeria	4.26	3.94	-7.60	53.49	34.65	-35.22
Kenya	4.07	4.49	10.29	47.84	33.14	-30.73
Oman	5.28	4.50	-14.76	42.17	35.25	-16.40
Indonesia	3.03	3.66	20.56	43.73	37.29	-14.73

Source: Department of Commerce, Government of India

Table14: Export of aircrafts and spacecrafts ($ million)

Export partners	Dec 15	Dec 16	Growth %	Apr-Dec 15-16	Apr-Dec 16-17	Growth %
HIGH CUMULATIVE GROWTH						
Bulgaria	0.03	0.00	-100.00	0.04	93.70	266301.8
Switzerland	1.42	1.89	33.60	14.87	111.51	649.91
Turkey	5.91	3.66	-37.95	14.61	103.45	608.03
Singapore	9.91	22.25	124.58	48.51	193.90	299.74
Malaysia	0.62	4.88	685.94	9.15	26.38	188.25
Israel	5.72	9.07	58.64	41.86	90.21	115.52
France	24.64	22.50	-8.66	99.44	212.71	113.90
UK	10.65	33.95	218.72	115.29	179.13	55.37
SHARP CUMULATIVE DECLINE						
Germany	9.72	17.76	82.67	116.21	104.30	-10.25
Sri Lanka	0.10	0.02	-81.80	972.17	78.24	-91.95
UAE	0.40	0.49	23.15	722.40	150.82	-79.12

Source: Department of Commerce, Government of India

Table15: Export of ships, boats and floating structures and parts ($ million)

Export partners	Dec 15	Dec 16	Growth %	Apr-Dec 15-16	Apr-Dec 16-17	Growth %
HIGH CUMULATIVE GROWTH						
Indonesia	0.00	0.00		1.14	233.32	20399.07
Malaysia	0.00	16.11		190.61	518.16	171.84
Sri Lanka	0.00	5.99		59.60	139.98	134.89
UAE	107.45	10.96	-89.80	368.64	771.24	109.21
SHARP CUMULATIVE DECLINE						
Bahrain	0.00	0.00		122.62	45.81	-62.64

Source: Department of Commerce and CSO

Table16: Export of auto components ($ million)						
Export partners	**Dec 15**	**Dec 16**	**Growth %**	**Apr-Dec 15-16**	**Apr-Dec 16-17**	**Growth %**
HIGH CUMULATIVE GROWTH						
Nepal	6.82	10.11	48.26	64.42	149.58	132.19
Canada	3.80	6.21	63.33	26.40	43.07	63.14
Sweden	2.46	3.18	29.14	18.19	27.40	50.63
Spain	5.44	6.03	10.75	35.76	49.98	39.78
Philippines	3.73	2.52	-32.47	15.69	21.29	35.66
Bangladesh	16.04	16.26	1.36	101.76	136.68	34.32
South Africa	4.88	4.20	-13.97	38.95	51.22	31.50
Russia	3.16	5.34	69.09	34.35	43.42	26.40
SHARP CUMULATIVE DECLINE						
Brazil	13.05	14.90	14.10	128.13	107.79	-15.87
UAE	12.73	9.10	-28.54	99.83	83.99	-15.86
Colombia	12.06	4.00	-66.86	38.71	32.85	-15.14
USA	74.18	72.47	-2.30	667.47	577.32	-13.51
Egypt	9.51	6.78	-28.69	82.39	72.93	-11.48
Italy	12.64	10.64	-15.84	99.22	88.08	-11.22

Source: Department of Commerce and CSO

Thailand also witnessed lower imports of nonferrous metals from India during April-December 2016.

Export of electrical machinery and components

• The largest importer of India's electrical machinery and components, the USA recorded 34.3 percent growth in imports of Indian electrical machinery during April-December 2016. Highest growth in imports was recorded by Algeria during this time period.

• Among the losers, Saudi Arabia recorded 47 percent decline and Nigeria saw 35.2 percent fall in exports on a cumulative basis.

Export of aircrafts and spacecrafts

• Exports of India's aircraft and spacecrafts to Bulgaria was low but that showed a sudden growth during April-December 2016 while some other nations also recorded growth in triple digit.

• Exports to UAE and Sri Lanka recorded maximum declines on a cumulative basis.

Export of ships, boats and floating structures and parts

• Indonesia recorded robust growth in imports of India's ships, boats and floating structures during April-December 2016.

• Exports to Bahrain recorded significant decline during the same time period.

Export of auto components

• In case of exports of Indian auto components, Nepal recorded triple-digit growth during the first nine months of fiscal 2016.

• Brazil, UAE and Colombia are the three top losers with nearly same rate of decline in imports during April-December 2016.

Conclusion

India's engineering exports witnessed positive growth for the fifth straight month in a row. Substantial rise in exports observed in the case of iron and steel, electrical machinery, automobiles, medical and scientific equipments, railway and transport equipments, office equipments, accumulator and batteries. EU ranks as the region with highest shipment of engineering products from India during December 2016 with a share of more than 21 percent of total engineering exports. India's engineering exports to CIS and ASEAN+2 countries, too, recorded noteworthy positive growth in the said period.

We expect the upsurge in Indian engineering exports is likely to continue in the rest of the fiscal year as hardening of crude oil prices in the international market is not expected to see any reversal of trend at least in the near term. Other commodity prices have also been rising. Moreover, developed regions have escaped economic slowdown and now are expected to see a weak but steady growth going forward that will increase the demand from overseas. Global sentiments have started showing positive signs and the major markets for Indian engineering exporters – the US and Europe, which account for around 30 percent of total exports – are yet to show signs of demand revival.

HOME AFFAIRS

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Vibrant Gujarat Global Summit 2017

The government of Gujarat, as part of its journey towards sustainable long term growth and inclusive development organised the 8th edition of the Vibrant Gujarat Global Summit over 10- 13 January 2017 at Mahatma Mandir, Gandhinagar. The central focus of the 8th edition of the Vibrant Gujarat Global Summit was 'Sustainable Economic and Social Development.' At the session on Make in Gujarat – Engineering, Heavy Engineering & Automotive – Opportunities in the Era of Technological Transformation.

Mr TS Bhasin, Chairman, EEPC India addressed the participants on the Export Potential for Engineering Goods. Mr Bhasin said Gujarat offers a model for economic progress and development for the developing nations. Its significant contribution to the Indian economy has made India visible to a competitive market in spite of the downturn in the world economy. Emerging as an 'investor friendly' destination in the country, Gujarat highlights a luxurious lifestyle of leisure, pleasure, business and investments.
Outlining the various initiatives taken by EEPC India for the development of the engineering sector, Mr Bhasin said that EEPC India is committed to work with the government, especially the government of Gujarat, in making successful programmes of Make in India, Digital India, Skill India and Standup India. An exhibition spreading over 1,25,000 sq m with exclusive demo sessions showcasing the latest trends and technology, products and services across sectors was held during the Global Summit.
(**1**) Mr TS Bhasin, Chairman, EEPC India, addressing the session on Make in Gujarat – Engineering, Heavy Engineering & Automotive – Opportunities in the Era of Technological Transformation. (**2**) Mr RJ Shah, Former PCIA, Government of Gujarat; Mr Lokesh Saxena, Vice-President, SKF India; Mr TS Bhasin, Chairman, EEPC India; Mr Kenichi Ayukawa, MD & CEO, Maruti Suzuki India Ltd; Mr Vinnie Mehta, Director-General, Automotive Components Manufacturers Association; Mr V Sridhar, Vice-President, Honda Motorcycle and Scooter India Ltd; and Mr AB Shah, GIIC (Gujarat Industrial Investment Corporation Ltd), Government of Gujarat; at the summit.

The government of West Bengal organised the Bengal Global Business Summit 2017 in Kolkata. (**3**) Ms Mamata Banerjee, Chief Minister of West Bengal, with Mr Anupam Shah, Immediate Past Chairman, EEPC India; Mr Arun Kumar Garodia, Regional Chairman (ER), EEPC India; and Mr Ravi Sehgal, Sr Vice-Chairman, EEPC India during the summit.

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IESS VI 2017

With EEPC India's flagship event, IESS VI, just over a month away, EEPC India offices were the scene of hectic activities with seminars, workshops and conferences being held at regular intervals.

Business Opportunities in Iran and IESS VI

In New Delhi a seminar was held on Business Opportunities in Iran and IESS VI for Indian Exporters (**4**) Mr RP Jhalani, Former Chairman, EEPC India, delivering a Special Address. On his left Mr Ishnath Jha, Regional Manager (NR), ECGC who spoke of the ECGC scheme in Iran; Dr Hossein Bamari, Attaché Commercial Embassy of Iran; Mr Pradeep Aggarwal, Dy Regional Chairman (NR), and Mr Rakesh Suraj, Regional Director (NR), EEPC India. Mr Rakesh Suraj informed the participants about Export Incentives and Role of EEPC India for engineering exporters.
(**5**) The speakers pose for a photograph.
(**6**) Dr Hossein Bamari responding to a question during a presentation by Ms Ruchika Gupta, Sr Executive Officer, EEPC India, on Indee-Iran including incentives to MSME units and IESS VI at Chennai.
(**7**) A view of the participants

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Chennai Trade Centre, Chennai
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PRADEEP AGGARWAL
RAKESH SURAJ

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EEPCINDIA

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Energy seminar

In Vasai, a roadshow and seminar was held on the Importance of Energy Efficiency in India for MSMEs, SME Funding & on Prudence of Trade Finance, ZED Certification Scheme of MSME & Business Opportunities at IESS 2017. (**8**) Mr Rajat Srivastava, Regional Director (WR), EEPC India, Mr Ashok Grover, Chairman, Gowalis Industries Association, Vasai, Mr Shivaji Patil, Deputy Director, MSME DI, Mumbai, Mr Sujat Faxwala, Director, Global Marketing, Elconn Energy Systems India Pvt. Ltd, were the speakers among others. (**9**) Welcome address by Mr CA Anto, President, Gowalis Industries Association, Vasai. (**10**) Mr Shishir Chaturvedi, GEVP & Regional Business Leader, YES Bank, being welcomed by a member of Gowalis Industries Association. (**11**) Mr Abhijeet Angane, SVP of YES Bank, speaking on SME Funding & Prudence of Trade Finance. (**12**) Mr Rajat Srivastava speaking on schemes of EEPC India.

Chennai roadshow

In Chennai, host to IESS VI, (**13**) a roadshow on IESS 2017 was addressed by Mr MV Robert, Secretary, Ambattur Industrial Estate Manufacturers' Association (AIEMA). Mr CH Nadiger (seated), Regional Director (SR), EEPC India, made a presentation on IESS VI.

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Niryat Bandhu Seminar

In Anand Gujarat, EEPC India in association with Jt DGFT, Vadodara organised Niryat Bandhu Seminar & Role of EEPC India to boost the Exports & Business Opportunities at IESS 2017. The event was held to raise awareness about Niryat Bandhu schemes offered to the exporting community by the Directorate-General of Foreign Trade, Ministry of Commerce and Industry, Government of India. Welcoming the participants, Mr Arvind Patel, Regional Committee member, EEPC India, said that the scheme facilitates entrepreneurs wishing to enter exports through training, counselling and info sessions through the active network of 36 DGFT offices spread across the country. Dr Ashis Kumar Dash, Deputy Director General of Foreign Trade, Vadodara, made a presentation on Export Incentives and the various requirements under different schemes/ eligibility of the scheme and the necessary documents. Mr Lachman Kewalani, Branch Manager, ECGC Ltd, Baroda, briefed the participants on the activities of ECGC Ltd and made a presentation on Risk in Exports and Mitigating Role of ECGC. Mr Rajat Srivastava, Regional Director (WR), EEPC India made a presentation on the Role of EEPC India in boosting exports and business opportunities at IESS 2017. More than 40 participants attend the programme, and the feedbacks received on the event were excellent. (**14**) Mr Lachman Kewalani, Branch Manager, ECGC Ltd, Baroda; Mr Rajat Srivastava, Regional Director (WR), EEPC India; Dr Ashis Kumar Dash, Deputy DGFT, Vadodara; and Mr Sudhakaran Nair, Sr Assistant Director, EEPC India.

Interactive session

In Kolkata, EEPC India organised an interactive session with BASIMA (Baruipur Surgical Instruments Manufacturers Association) on Technology Upgradation in the Baruipur Cluster and IESS VI. (**15**) Mr Pradosh Roy Choudhury, Vice President, and Mr Kamal Das, Secretary, BASIMA; Mr Arun Kumar Garodia, Regional Chairman (ER), Ms Anima Pandey, Regional Director (ER), and Mr D J Moulick, Assistant Director, RO Kolkata, EEPC India at the session chaired by Mr Arun Kumar Garodia.

GST and IESS VI roadshow

EEPC India organised an awareness session on GST and roadshow on IESS VI in Kolkata. (**16**) The speakers, Ms Anima Pandey, Regional Director (ER), Mr Suranjan Gupta, Addl Executive Director, and Mr Arun Kumar Garodia, Regional Chairman (ER), EEPC India; Ms Shivani Shah, CA, Shivani Shah & Associates; and Mr Sugam Madhogaria, Director, NIF Ispat Ltd.

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Pune seminar

(**17**) Mr Neeraj Madhekar, Regional Business Leader – Emerging Business Banking, YES Bank, Mr Shivaji Patil, Deputy Director, MSME DI, Mumbai, Mr Rajiv Kumar, DGM, Energy Efficiency Centre, SIDBI, Mr SH Kopardekar, Director, MCCIA, Pune, Mr Manish Arora, President & Country Head-Small Business Banking, YES Bank, listening to a presentation on IESS VI by Mr Rajat Srivastava, Regional Director (WR), EEPC India. (**18**) The audience.

EU antidumping duty

A meeting was held in Kolkata on Initiation of Antidumping Duty by EU on Casting Products chaired by Mr RP Sehgal, Sr Vice Chairman, EEPC India. (**19**) Mrs Anima Pandey, Regional Director (ER), EEPC India, Mr Suranjan Gupta, Addl. Executive Director, EEPC India; Mr Arpit Bhargav, CA, S. Bhargav & Associates; Mr RP Sehgal, Mr Arun Kumar Garodia, Regional Chairman (ER), EEPC India in the meeting. (**20**) A follow-up meeting was chaired by Mr Arun Kumar Garodia. Mr B D Agarwal, Dy Regional Chairman (ER), EEPC India, Mr B N Agarwal, Director, RB Agarwalla & Company Pvt Ltd; Mr Arun Kumar Garodia, Ms Anima Pandey, Regional Director (ER); EEPC India Mr G K Madhogaria, Dy Regional Chairman (ER); EEPC India and Mr O P Agarwal, Director, RBA Ferro Industries Pvt Ltd in the meeting.

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Trade barriers in SAARC countries

EEPC India (ER) jointly with Federation of Indian MSMEs (FISME) and FOSMI (Federation of Small and Medium Industries) organised a Public Private Dialogue Forum in Kolkata with Policy Advisory Group represented by both private and government officials from Nepal, Bhutan and Bangladesh. The deliberation of the programme was on non-tariff barriers as well as other issues pertaining to the border trade with our neighbours and bringing them to the notice of government authorities of Nepal, Bhutan and Bangladesh and India for redress. (**21**) Mr RP Sehgal, Sr Vice Chairman, EEPC India, welcoming the participants. Ms Anima Pandey, Regional Director (ER), EEPC India; Mr Biswanath Bhattacharya, President, FOSMI; Mr RP Sehgal, Mr Shafquat Haider, Director, FBCCI; Mr VN Sastry, Joint Secretary (Projects), FISME are in the centre. (**22**) Mr Biswanath Bhattacharya, President, FOSMI. On the extreme left is Mr C James Lalremruata, Branch Manager, ECGC Ltd, and on the extreme right Mr Ayush Siddhi, Programme Officer, German Technical Corporation.

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REX system and CoO

An Interactive Workshop on REX System/Certificate of Origin was held in Kolkata. (**23**) Ms Anima Pandey, Regional Director (ER), and Mr Suranjan Gupta, Addl Executive Director, EEPC India; Mr Vijay K Singh, Joint Director (Incharge), and Mr SS Chauhan, Deputy Director (CoO), Export Inspection Agency (EIA); listening to the Welcome Address by Mr Arun Kumar Garodia, Regional Chairman (ER), EEPC India.

61st Annual General Meeting

The 61st Annual General Meeting of EEPC India was held in Kolkata. (**24**) & (**27**) From right: Mr B N Agarwal, Working Committee Member, Mr PK Shah, Past Chairman, Mr MC Shah, Past Chairman, Mr SS Kejriwal, Convenor, Sanitary Casting Panel, Mr Arun Kumar Garodia, Regional Chairman (ER), Mr Suranjan Gupta, Additional Executive Director, Mr TS Bhasin, Chairman, Mr Bhaskar Sarkar, Executive Director and Secretary, Mr Rakesh Shah, Past Chairman and Chairman, Publicity, Exhibition and Delegation, Mr Surendra Kayal, Working Committee Member, and Ms Anima Pandey, Regional Director (ER), all EEPC India at the Annual General meeting. (**25**) Mr TS Bhasin, Chairman, EEPC India listening to a speaker. (**26**) Mr Bhaskar Sarkar, Executive Director and Secretary, making a presentation. (**28**) A light moment at the AGM.

Panel meetings

Panel P-16: (**29**) Mr Arun Kumar Garodia, Panel Convenor & Regional Chairman (ER), EEPC India, welcoming participants to the meeting of the Steel Structure Including Transmission Line Tower Panel (P-16). On his right, Mr C James Lalremruata, Branch Manager, ECGC Ltd, and on his left Ms Anima Pandey, Regional Director (ER), EEPC India.

Panel P-36: (**30**) Mr Anupam Shah, Former Chairman, EEPC India & Panel Convenor, addressing panel members of the Railway Rolling Stock and Components, Signalling Equipments and other Transport Equipments including AirCrafts, Ship-building and Repairing Panel (P-36). On his right are Mr LR Murali, Jt Vice President (M) RSD, Texmaco Rail & Engineering Pvt Ltd; Mr Abhyudaya Sharma, Asst Manager, Titagarh Wagons Ltd; and Mr CB Mukherjee, Recon Engineering Co (P) Ltd while Ms Anima Pandey, Regional Director (ER), EEPC India, is on his left.

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Training programme

EEPC India organised a two-day Training Programme on Export Incentives and Export Documentations in Mumbai. (**31**) & (**32**) Mr Rajat Srivastava, Regional Director (WR), EEPC India, and Mr Ajit Shah, Faculty of the Training programme, addressing the trainees.

New members

(**33**) A meeting of new members was held at EEPC India Mumbai office. Mr Rajat Srivastava, Regional Director (WR), EEPC India was present.

Hannover Messe 2017

A Press Conference was held in Mumbai on Hannover Messe scheduled to be held over 24-28 April in Hannover, Germany. (**34**) Mr Mehul Shah, Managing Director, Hannover Milano Fairs India and Mr Marc Siemering, Senior Vice President, Deutsche Messe AG, look on as Mr Rajat Srivastava, Regional Director (WR), EEPC India, addresses the Press Conference

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INADEQUATE SANITATION COSTS INDIA $54 BILLION EVERY YEAR

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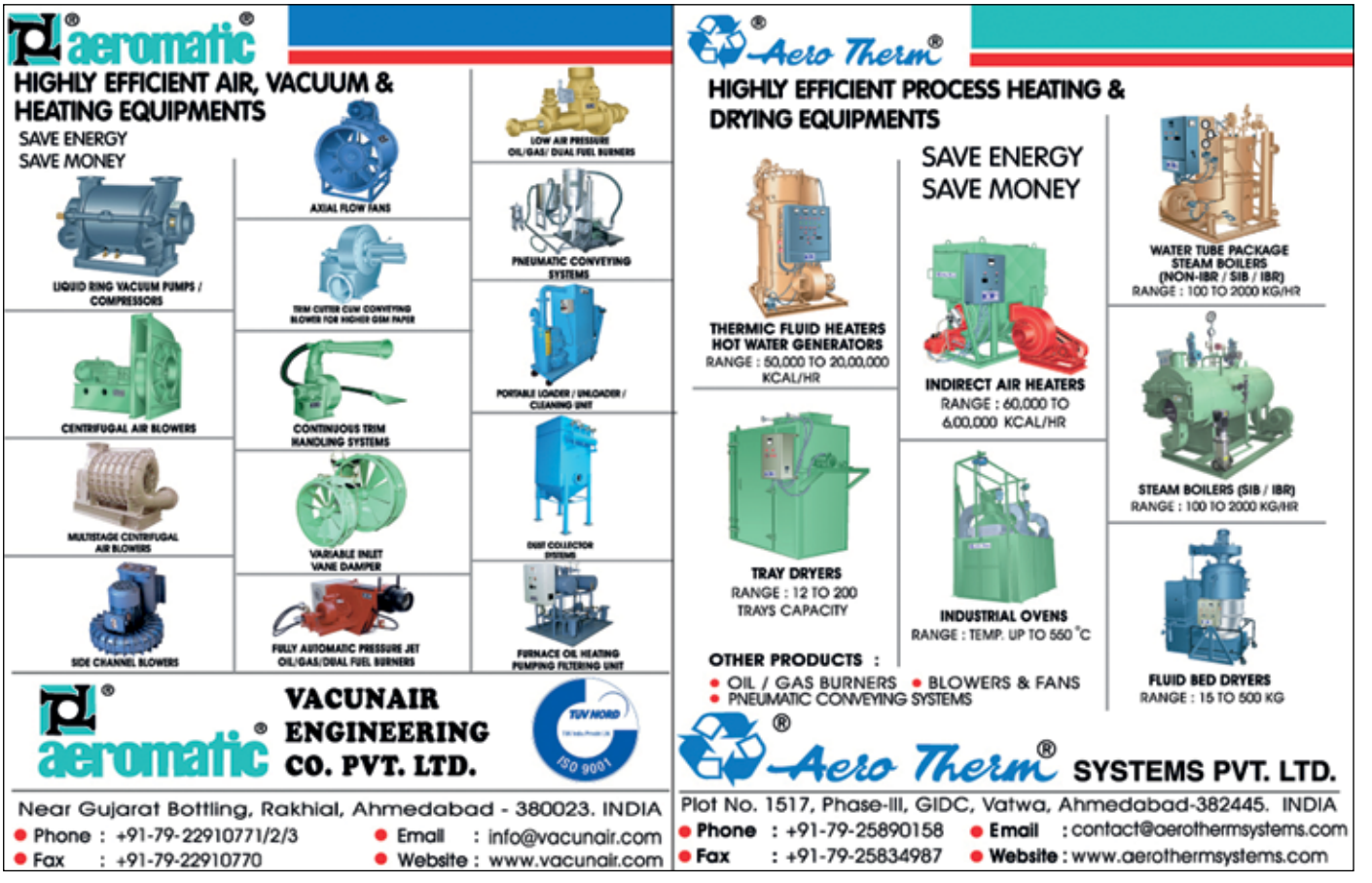
EEPC INDIA CALENDAR OF EVENTS

Name of the Event	City/Country	Date	Scheme
RBSM in Bengaluru, India (Coinciding with IMTEX & ToolTech 2017)	Bengaluru, India	26 January - 1 February 2017	MAI
India Pavilion in Arab Health 2017	Dubai, UAE	30 January - 2 February 2017	MAI
International Engineering Sourcing Show (IESS) – 6th Edition Buyer Seller Meets in South Africa, Mozambique, Botswana and Zambia	Chennai, India	16 - 18 March 2017 26 March - 5 April 2017	MAI
India Pavilion at Vietnam Saigon Textile & Garment Industry Expo 2016 (SAIGONTEX)	Ho Chi Minh City, Vietnam	5 - 8 April 2017	MAI



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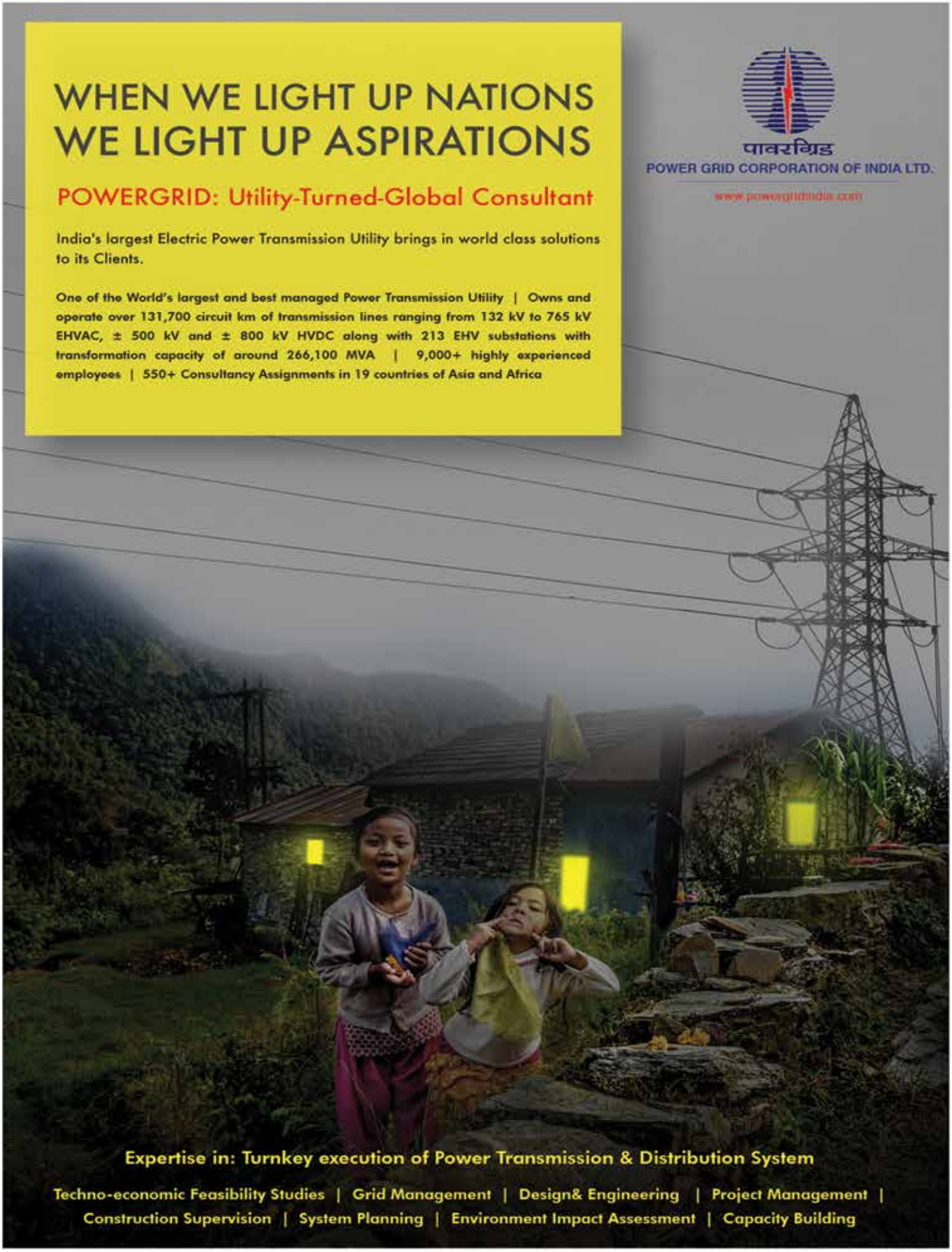

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