

Editor's Desk

The Grand Duchy of Luxembourg whose history dates back to a thousand years features on our cover, and inside pages. These pages include an interview with H.E. Mr Jean Claude Kugener, the Ambassador of the Grand Duchy of Luxembourg in India.

The City of Luxembourg is one of the three official capitals of the European Union (EU), the others, of course, being Brussels and Strasbourg. Luxembourg remains one of the six founding members of the European Union in 1951—back then it was known as the European Coal and Steel Community. Luxembourg has held the Presidency of the Council of EU twelve times, the last during the second semester of 2015. The Grand Duchy was one of the 51 founding members of the United Nations in 1945.

India and Luxembourg are currently celebrating 70 years of diplomatic relations that were established on July 1, 1948. Also, 2019 is the celebratory year of the 90th anniversary of Luxembourg's first vice-consulate in Bombay, established on November 5, 1929.

As we interacted with Ambassador Kugener, we learnt that it was in the wine-producing town of Schengen in Luxembourg that borders Germany and France that the Schengen Agreement was signed back in 1985. This, of course, ushered in the Schengen Visa for travelling within countries within the European Union.

Arcelor-Mittal that has an obvious Indian link is headquartered in Luxembourg since the merger of Arcelor and Mittal Steel in 2006. Paul Wurth, the engineering firm set up in 1870 in Luxembourg, is based in India for a quarter century now.

Ambassador Kugener mentions in his interview that more Indians are now setting



out for this picturesque country than ever before. There was a 36 per cent rise in tourist and business visa applications in 2018 as compared to 2017. On the tourism front he says, "Luxembourg City has been marked by centuries of history, shaped by tradition and modernity in natural and green surroundings. The old city and its fortress around the Grand Ducal Palace have been on the UNESCO World Heritage list since 1994. The remains of centuries-old fortifications are among the many tourist attractions in Europe, called the *Casemates* with 17 km underground tunnels."

There is also a 24-year-old tryst that Luxembourg has had with the well-known artist Amar Nath Sehgal who went to this northern European nation in 1979 and lived there till

2004. He had been invited by Luxembourg to set up his studio. Luxembourg's amber, copper and gold hues gently seeped into his grey watercolors and his paintings would often find themselves on the cover of the cultural section of the daily *LuxemburgerWort*.

There are stories of other interests which you will find in the magazine. We do hope that you're able to enjoy what you read.

Sayantana Chakravarty

sayantanc@gmail.com

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and Political Connectivity

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Registered Office: N-126, II Floor, Greater Kailash I,
New Delhi - 110 048.
Contact: +91.11.2923.3647, +91.11.2923.1515.

Our Associate Offices:

Hyderabad: Abhijit Bhattacharjee,
Tel: +91.9848033874.

Mauritius: 28, Cnr. Jasmins and Lataniers Avenue
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ADVERTISEMENT AND SUBSCRIPTIONS

Email: contactindiaempire@gmail.com
info@indiaempire.com
sales@indiaempire.com
M: +91.9899117477, +91.98116.27971

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Sayantana Chakravarty is in a select group of 12 writers chosen by Scholastic Education to promote advanced English literature for schools worldwide. Included in the group are Nobel Laureate William Butler Yeats, R K Narayan (Padma Vibushan and Sahitya Award winner), journalist and poet Walt Whitman, writer Saki (Hector Hugh Munro), poet Nissim Ezekiel (Sahitya Akademi Awardee), writer Jerome K Jerome (author of *Three Men in a Boat*), poet Edward Lear, Roald Dahl (16th on Time Magazine's list of greatest British writers).

Sayantana Chakravarty's stories featured in *Best of Indian Express of 25 years* and among select stories in *Best of India Today's 25 years*.

Ambassador's Address



Dear Readers,

I am extremely happy to introduce you to this special issue of the India Empire magazine dedicated to Luxembourg. It is an excellent occasion to present my country in this exceptional year as we are currently celebrating the 70th Anniversary of the establishment of the diplomatic relations between the Grand Duchy of Luxembourg and the Republic of India, signed on 1 July 1948, as well as the upcoming 90th Anniversary of Luxembourg's first Vice-Consulate in Bombay, established on 5 November 1929.

When I had the honour to present my credentials to the Honorable President, His Excellency Mr Ram Nath Kovind at Rashtrapati Bhawan, a few weeks after my arrival in India 6 months ago, I was given the opportunity to highlight the

deep and longstanding relations between both our countries.

Over the decades, Luxembourg and India have become strong partners and our relations have been further strengthened since the inauguration of the resident Embassy in Delhi in 2002. It's a beautiful friendship that has been notably built on many bilateral high-level visits. Luxembourg ranks as 16th largest Foreign Direct Investor in India and has large economic, commercial and financial ties with India. Some of our companies that are present in or working with India will be presented in the following pages.

This publication offers also an excellent opportunity to highlight a few facts about Luxembourg, reaching from ICT to Steel and from Satellites to Manufacturing. The facts talk for themselves with a 36% increase in tourist and business visa applications in 2018 compared to 2017 and an increase of 22% of the Indian community living and working in the Grand Duchy last year. Some of our companies, leaders in their domain, have longstanding relations with India, some of which are presented in this special issue. Others are in the process of launching a new base here and we are certainly going to hear more about them in the coming years.

Luxembourg, marked by centuries of history, a cosmopolitan and multicultural country situated in the heart of Europe, between Belgium, France and Germany, has a growing and diversified economy. Being at the forefront of Fintech, ICT, Bio-Health, Green Bonds, Space Resources and having a striving Startup scene, we have identified many promising areas that are going to shape the next decades of our relationship with India.

There is much more to discover about the Grand Duchy of Luxembourg and I wish the readers a lot of pleasure in browsing through the following pages and express my sincerest thanks to the magazine's editor Mr. Sayantan Chakravarty and his entire team for this highly interesting and well-presented special issue.

H.E. Mr Jean Claude Kugener

Ambassador of the Grand Duchy of
Luxembourg to the Republic of India

Interview with H.E. Mr Jean Claude Kugener
Ambassador of Luxembourg to India

“Luxembourg–India Relations growing by the day”

H.E. Mr. Jean Claude Kugener, Ambassador of Luxembourg to India, touches on a variety of subjects that reflect the deep and strong relations of friendship ranging from the Luxembourg companies flourishing in India to the Schengen visas and wines in an interview
India Empire Magazine’s Editor and Publisher Sayantan Chakravarty

Considering that your recent posting here in New Delhi must assume great significance, what are the key areas you’d like to focus on, going forward?

Since my arrival in India last September, I have been working together with my colleagues at the Embassy and our 3 Honorary Consuls in India, Mr. Rajat Dalmia in Kolkata, Mr. Perses Bilimoria in Mumbai and Mrs. Suhasini Mani Ratnam in Chennai, to strengthen the already excellent bilateral relations between India and Luxembourg. We are currently celebrating 70 years of diplomatic relations that were established on 1 July 1948. This Anniversary has been marked by many high-level visits and beautiful success stories. 2019 is a very special year, as we also celebrate the 90th Anniversary of Luxembourg’s first Vice-Consulate in Bombay established on 5 November 1929. Despite the size of both countries, we have become strong partners over the decades and have built deep relations in many areas.

Among the large amount of Luxembourgish industries and companies, big and small, active with and in India, I would like to highlight only but a few: the world’s largest steel producer Arcelor-Mittal has an obvious Indian link and is headquartered in Luxembourg since the merger between Arcelor and Mittal Steel in 2006. Based in Luxembourg since its creation in 1870, the international engineering company Paul Wurth has been present in India since more than 25 years. Its Indian office is the Group’s first Asian subsidiary and India counts among its most important markets after the European Union. In West Bengal,

we have, among others, 2 Luxembourgish companies Cera-tizit and Amer-Sil Ketex who have an impressive track record in their domain in the country. Amer-Sil, the reputed specialist for separators and gauntlets in industrial lead acid batteries, merged in 2015 with Ketex and has 3 production facilities in West Bengal, Himachal Pradesh and Karnataka.

In Finance and IT, we also wish to create new contacts and opportunities. Luxembourg is the Number 1 Investment Fund Centre in Europe. The Luxembourg Stock Exchange (LuxSE) listed its first Masala bond in 2008 and the number of INR denominated debt securities has gradually increased ever since. In 2016, Luxembourg created the 1st Green Exchange in the world, a dedicated platform for green, social and sustainable securities. These are but a few of the many projects we have launched to make Luxembourg better known in India and to further deepen the relations in the coming years.

...Luxembourg ranks again as 16th investor in India in terms of Foreign Direct Investment, which also explains the large presence of Luxembourgish companies in India

Political relations between Luxembourg and India have traditionally been cordial and excellent. Where do relations stand today?

In the context of the Diplomatic Anniversary, the Minister of External Affairs, Smt. Sushma Swaraj visited Luxembourg on 19 – 20 June 2018. The Minister had an excellent two-day-visit that included an audience with H.R.H. the Grand Duke, a meeting with the Prime Minister, Mr Xavier Bettel, and fruitful discussions with her Luxembourg counterpart, Mr. Jean Asselborn, before meeting the steadily increasing Indian Community in Luxembourg. This very special year where we commem-



H.E. Mr Jean Claude Kugener
Ambassador of Luxembourg to India

orate our anniversaries and deepen the relations for the future decades, will offer an excellent opportunity for further high-level visits.

A number of bilateral agreements in various sectors including steel technologies, social security, air services, double taxation among others have been signed between the two nations. We are currently reinforcing some or launching new MoU's including those with the various Indian Institutes of Technologies with which the University of Luxembourg has an excellent cooperation and helps to

deepen the people-to-people bonds. During my first visit to Chennai last month I had very fruitful exchanges with the Director of the IIT Madras in order to strengthen the relation between the Universities.

What is the extent of bilateral trade between the two countries?

Luxembourg and India have always had strong relations in terms of trade and investment. In the recently published official statistics, Luxembourg ranks again as



16th investor in India in terms of Foreign Direct Investment, which also explains the large presence of Luxembourgish companies in India. The Grand Duchy is often seen as a European hub for setting up a company's regional headquarters, primarily due to its central location and cosmopolitan population, which can speak fluently 3 languages, English, French and German, besides its national language Luxembourgish. We have therefore attracted a lot of interest from Indian companies, among others in the IT sector with companies like Tata Consultancy Services (TCS), Wipro, Tech Mahindra, which have their regional offices in Luxembourg.

In terms of trade in goods what are the main items that are exported from Luxembourg to India, and vice versa?

The main items in terms of trade in goods are machinery and mechanical appliances, electrical equipment and articles of base metal. The Luxembourgish company Rotarex for instance exports high performance valves, regulators and fittings for all gas applications serving its customers across various sectors including fire safety, automotive, oil and gas, energy and fertilizers in India.

Let me also highlight that we are currently working on importing Luxembourgish wines and Crémants to India. It is no coincidence that the Luxembourg Moselle is among

the major tourist attractions. Schengen is a small wine town with a unique position in the 3 Border signature of the Schengen Agreement abolishing the border-controls within the Members States of the Schengen area.

The Luxembourg company 'Boson Energy' develops clean and small-scale "first-mile" waste-to energy solutions that extract a maximum of energy from municipal solid waste and other mixed wastes using the next generation of Advanced Thermal Treatment. Boson is currently the only solid waste technology globally invited to the National Mission for the "Clean Ganga" Environmental Technology Verification process.

The Luxembourg headquartered and the world-leading satellite operator Société Européenne de Satellites (SES) provides satellite capacity into India via ISRO using 6 geostationary satellites and helps to fast-track "Digital India".

Let me finally highlight the example of IEE, the Luxembourg headquartered company with more than 30 years of experience in innovation, which has a global footprint in 11 different countries. The company is about to launch a Test-lab in India to design, produce and test SBR sensor technology. IEE, a world leader in vehicle safety and comfort, vehicle automation and electrification, will be ready to assist India with the implementation of its new directive to make it mandatory to have seat belt sensors in cars.

What has been the role of Indian chambers like the IBCL, FICCI, CII, ASSOCHAM and others in furthering trade and commercial ties between India and Luxembourg?

The Indian Chambers and industrial bodies have an important role in the trade and commercial promotion and engagement between our countries. Let me highlight as a recent example the participation of Luxembourg as one of the 12 'Partner Countries' at the 5th Bengal Global Business Summit in Kolkata, where FICCI was a partner and where we received an overwhelming response during our Country presentation and had excellent contacts and B2B exchanges at our Pavilion. During my courtesy calls, I have also engaged with a few chambers and we are working on the strengthening of our existing relations through MoU's with the Luxembourg Chamber of Commerce. I also had the pleasure of participating together with the president of ICC, Mr. Rudra Chatterjee, in an interactive session on Luxembourg during my first visit to Kolkata two months after my arrival in India.

What are the main sectors of investment in Luxembourg where you'd advise Indian businesses to focus and concentrate?

Among the various sectors, Manufacturing, Steel, IT, Finance, Fintech, Space and Logistics and are among our key interests. The Luxembourg Financial centre offers a diverse range of financial services connecting investors and markets around the world. It is the Leader in global Fund distribution and the 2nd largest Investment Fund centre in the world and a prime location for alternative funds. Over the last years, Luxembourg became The European centre for cross-border insurance and pension funds vehicles. Leading international non-life insurers have set up their EU continental hub in the Grand Duchy to service their European customers.

A considerable number of FinTech companies, including leading industry players in e-commerce and e-payments, such as PayPal, Amazon and Rakuten, have chosen Luxembourg as their European hub. Its tech friendly regulatory environment help Fintech projects to flourish. The Grand Duchy is also a pioneer in sustainable finance labels. Already in the early 1990s Luxembourg actively engaged in the microfinance industry. Today, the country is the global leader in inclusive finance and has a 61% market share of global assets under management in Microfinance Investment Vehicles. The Luxembourg Green Stock Exchange, the first ever global platform dedicated to green, socially responsible and sustainable securities has the largest share of listed green bonds worldwide.

Region with France and Germany is not only known for its wines but it is also the place where European history was written in 1985 with the Luxembourg as a startup's gateway to Europe. The activities range from Indutech to eco-innovation technologies, HealthTech as well as Automotive and Space technologies and the country offers a wide range of initiatives to help kick-start the start-up business. Let me highlight for example the "Fit4Start" Programme, which supports start-ups in their establishment phase by offering them early-stage funding and coaching.

As far as India's flagship Mission Mode programmes are concerned—such as Make in India, Digital India, Smart Cities, Clean Ganga, Startup India—what has been the engagement like thus far?

Luxembourg has contributed significantly to the programmes of the Government of India. Let me highlight as an example the 2 Luxembourg companies Paul Wurth and Ceratizit that have been "Make in India" for over two decades. Paul Wurth has for example engineered and built the largest Coke Oven Plant in Asia at the Tata Steel BSL plant in Meramandali. Ceratizit, which has been developing and producing sophisticated hard material cutting and wear protection solutions, has a constantly growing presence in India with a few production sites.

What is the picture in Tourism in terms of tourist arrivals in Luxembourg from India?

Taking into consideration the 36% increase in tourist and business visa applications in 2018 compared to 2017, we see a highly promising trend with great satisfaction. A trend, which is reflected by the very close relationship we have built over the last decades.

The capital, Luxembourg City, has been marked by centuries of history, shaped by tradition and modernity in natural and green surroundings. The old city and its fortress around the Grand Ducal Palace have been on the UNESCO World Heritage list since 1994. The remains of the centuries-old fortifications are among the many tourist attractions in Europe, called the *Casemates* with 17 km underground tunnels.

Due to its geological location, Luxembourg is home to an array of different landscapes, which include the dense woodlands and valleys of the Ardennes, the fascinating rock formations of the Mullerthal region and the region of the "Red Earth" with its former mining landscapes as well as the vineyards of the Moselle region. The Grand Duchy has one of the densest certified hiking networks in Europe, all laid out in breath-taking settings. Many other touristic attractions in the capital and throughout the country are worth discovering.

On the cultural front what kind of exchanges has taken place between the two countries in recent times?

Luxembourg has beautiful cultural ties with India. Allow me to highlight two in particular from Sculptures to Bollywood films. The modernist artist Amar Nath Sehgal (1922-2007) had a very rich and sustained relationship with Luxembourg where he lived for more than two decades. The artist left a remarkable heritage with numerous sculptures, paintings and drawings in private and public collections and every Indian tourist will find the bust of Mahatma Gandhi created by the artist in the Municipal Park in the Capital.

The film actress Niharica Raizada, born and grown up in Luxembourg, is our "Bollywood connection". She acted in many Bollywood productions and likes to recall that "India taught her patience and Luxembourg taught her diversity". We also keep on showing Luxembourg film productions regularly at global film festivals throughout India. □

MULTILATERAL LUXEMBOURG IN THE HEART OF EUROPE

The Grand Duchy of Luxembourg is a cosmopolitan country located in the heart of Europe with a thousand-year-old history and known for its multilingualism, its hospitality and its cultural diversity

The history of Luxembourg can be traced back to the year 963, when Count Siegfried of the Ardennes, founder of the House of Luxembourg, acquired the rocky outcrop, which today is at the middle of the country's capital. On the remains of a Roman "castellum", called Lucilinburhuc, he built a castle, which eventually became a towering fortress, also called "Gibraltar of the North". During the Middle Ages, the House of Luxembourg produced four Emperors of the Holy Roman Empire and several Princes Elect. The country has always been in the middle of Europe's tumultuous history and gained its status of a Grand Duchy at the Congress of Vienna in 1815 and finally its independence in 1839. It is today the last remaining Grand Duchy in the world.

Luxembourg is one of the six founding members of the European Coal and Steel Community in 1951, which evolved to become the European Union. Luxembourg City is one of the three European capitals and home to a number of European institutions like the European Investment Bank (EIB), the European Investment Fund (EIF), the European Court of Justice (ECJ) and the European Court of Auditors, among others. The country has held the Presidency of the Council of the European Union twelve times, with the last one during the second semester of 2015. Luxembourg has always played and continues to be a force for ideas at the heart of the European Union. It is therefore no coincidence that in 1985, the Schengen Agreement was signed in the Luxembourgish wine-producing town of Schengen, which borders on Germany and France. After Luxembourg City in both 1995 and 2007, it is the southern city of Esch-sur-Alzette, at the heart of the steel industry over last decades, which will be the European Capital of Culture in 2022.

Luxembourg is a proud member of the Benelux Union, which unites the Kingdom of Belgium, the Kingdom of the Netherlands and the Grand Duchy of Luxembourg since the Benelux Agreement signed in 1947, which established a customs union between the three countries and later in 1958 was extended to become the Benelux Economic Union. Luxembourg is also a member of the International Organisation of the Francophonie since 1970, as French is one of its three official languages.

Luxembourg and India are currently celebrating 70 years of friendship since the establishment of their diplomatic relations on 1st July 1948. The number of high-level visits over the years reflects the cordiality of our bilateral relations. Among these important visits, we count the three-day State visit of the President of India Shri K.R. Narayanan in Luxembourg from 14 to 16 September 1998 or more recently the two-day visit of the Minister of External Affairs Smt Sushma



The Minister of Foreign and European Affairs, Mr. Jean Asselborn, welcoming the Minister of External Affairs of India, Smt Sushma Swaraj in Luxembourg in June 2018
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Swaraj, to Luxembourg on the eve of the 70th Anniversary of the Diplomatic Relations. Minister Swaraj had an audience with HRH. the Grand Duke at the Palace and held meetings with the Prime Minister Mr. Xavier Bettel and her Luxembourg counterpart to discuss our strong bilateral relations. During her visit, the Minister attended a concert by the famous Indian violinist, Ambi Subramaniam, at the Grand Duke Jean Museum of Modern Art (MUDAM), and met the growing Indian community living and working in Luxembourg.

It is also in the context of the United Nations that Luxembourg has excellent relations with India. Both countries have worked as partners in multilateral fora with shared values on democracy, the rule of law and climate change to name but just a few areas of mutual understanding.

The Grand Duchy was one of the 51 founding members of the United Nations in 1945. In 2013-14, the country was a non-permanent member of the Security Council of the UN and held its presidency in March 2014 with the Minister of Foreign and European Affairs, Mr. Jean Asselborn, assuming the role of president. Luxembourg is also a member of the main UN agencies, including UNESCO, the World Health Organisation (WHO), the United Nations Conference on Trade and Development (UNCTAD), the International Labour Organisation (ILO), the World Food Programme (WFP), the International Monetary Fund (IMF) and the World Bank. Luxembourg is a signatory of most of the organization's declarations and conventions, among which the Universal Declaration of Human Rights. □

LEADER OF TODAY—DRIVER OF TOMORROW



LEFT: Visit of the Ambassador with members of the Embassy to the Paul Wurth HQ welcomed by the CEO Anil Anand in October 2018. RIGHT: Tata Steel Jamshedpur, Blast Furnace “1”

The Paul Wurth Group is a leading player in the global market for design and supply of equipment and plant facilities for the ironmaking industry. Headquartered in Luxembourg since its beginnings back in 1870, the company has developed in the course of its history into an engineering company which is active on the international market. The Group is today an established technology provider and supplier of complete plants for the primary stage of integrated steelmaking, i.e. blast furnaces, coke oven plants, direct reduction plants as well as environmental protection technologies for the iron and steel industry. In addition to its core competence in development and execution of new construction projects and modernisations, Paul Wurth also offers a full range of products and services in engineering, project management, site supervision, commissioning assistance, operator consulting and after-sales.

Driven by its pioneering spirit that has marked traditional iron-making, Paul Wurth is today committed to lead the transformation towards carbon-free iron ore reduction. This move towards “green steel” becomes necessary as a result of environmental measures to limit climate change, considering that the Iron and Steel industry is responsible for about 7% of the global CO₂ emissions. On this journey, Paul Wurth is accompanying their customers as a Leading Partner by offering solutions for a step-wise reduction of their CO₂ footprint and by investigating hydrogen-based alternatives for a more radical technological shift, substituting coal-based steel making.

With the ever-faster and ever-increasing integration of digital data and functionalities, the vision of an intelligent, self-learning steel plant is no longer just a distant dream. For Paul Wurth, the global trend towards digitalisation offers large opportunities to create additional value for its customers. Relying on sound process know-how and mechanical expertise, Paul Wurth’s digital experts develop attractive solutions and new business models, directly addressing the customers’ real needs.

Through its modern and performing subsidiary, CTI Systems, Paul Wurth also supplies and installs integrated and au-

tomated intralogistics solutions for heavy-load applications, mainly in the field of aircraft, surface treatment and intralogistics. Moreover, the daughter company Paul Wurth Energy allows the Group to widen its competence towards solutions for decentralised energy production, basically waste-to-energy and biomass-to-energy plants. In line with its commitment to continuously innovate, Paul Wurth launched in 2016 an incubator and co-working space in the heart of Luxembourg City, next to its headquarters. Paul Wurth InCub is a business incubator devoted to develop successful entrepreneurs in the Industrial Technologies’ sector.

With more than 1 500 employees and entities in around 20 countries, the Paul Wurth Group has a strong presence primarily in those regions of the world where a significant iron and steel industry operates.



Paul Wurth in India

Paul Wurth was incorporated in India in 1993 as the first Asian subsidiary of the Group. Since then, Paul Wurth has made a sub-

stantial contribution to the development of India’s steel industry by supplying state-of-the-art technology and equipment for ambitious ironmaking projects.

Paul Wurth has always pursued a policy of close contact with its customers and, thus, has established a trustful relationship with the most eminent Indian steel producers both from the public and private sector, who appreciate Paul Wurth for the quality and excellence of its products and services.

In 2014, Paul Wurth established a service workshop in Bhubaneswar (Odisha) for the manufacture, repair and maintenance of blast furnace charging equipment and other components. This step is in line with the “Make in India” concept and will increase even more our proximity and responsiveness towards our Indian customers.

Considering the office of Paul Wurth India Pvt. Ltd in New Delhi, some site offices across India and the service workshop in Bhubaneswar, the Paul Wurth group has today a workforce of about 150 persons in India. □

LUXEMBOURG—A hub for ICT and Start-ups

The development and promotion of the information and communication technologies (ICT) sector is one of the major focal points of the economic diversification strategy in Luxembourg. Whether in terms of infrastructure (data centres, connectivity and internet traffic) or services (especially data protection and data security), this approach is essential, as it supports the sustainable development of many other important sectors such as Finance, Media, Cleantech, Logistics, Automotive and the Space industry. The emerging field of biotech is also directly concerned, as it is particularly affected by issues of confidentiality of medical data.

As a "Big Data" hub, Luxembourg is well positioned as a location of choice for the development and internationalisation of ICT companies, as well as for innovation. Supported by an efficient public research infrastructure and projects, the country offers many opportunities for start-ups, SMEs and large companies.

Industry 4.0, targeting the application of digital technologies in the high-tech industry, is considered as a priority in the implementation of the National Sustainable Economic Development Policy. Recent substantial investments have been made by major players in the sector (Goodyear, Husky, Ceratizit ...) with the support of the government.

Alongside this Industry 4.0 approach, the choice of the European Commission to set up in Luxembourg EuroHPC, the European supercomputer network manager, was motivated by the fact that the country is a recognised innovator and ready to play a leading role in the implementation of the European Action Plan with regard to digitisation.

In the latest edition of the Digital Transformation Scoreboard, published in the summer of 2018 by the European Commission, Luxembourg ranks 5th (out of 28 states) in terms of the progress made in digitising the economy. In particular, the country ranks highly in digital infrastructure (2nd), e-leadership - ability to facilitate digital skills (3rd), and investments and access to finance (4th).

These excellent rankings overlap those mentioned in another European indicator published a few weeks earlier: the

Digital Economy & Society Index, in which Luxembourg (5th out of 28) is one of the leading countries for connectivity, human capital and use of the internet. In this fruitful climate and given the positioning of ICT as a new vector of Luxembourg's economic development, start-ups have a key role to play, as an essential driver for the development of the national economy, creating new jobs and innovation. In the space of a few years, a vibrant ecosystem that has been set up in the country, to support the emergence of innovative start-ups, which is an indispensable element in the implementation of an efficient economic diversification policy in key technology sectors.



In addition to the presence of public and private reception facilities (incubators, accelerators, co-working spaces), companies that want to settle and develop from Luxembourg can also rely on support services and attractive financial assistance. As a result, the Fit 4 Start acceleration programme, initiated in 2015 by the Ministry of the Economy and managed by Luxinnovation, with the collaboration of the incubators Technoport and Luxembourg-City Incubator, has become, in a few years, Luxembourg's reference programme to support start-ups, with an international dimension. Twice a year, it offers entrepreneurs and creators of innovative start-ups in the ICT and Health-tech fields, 16 weeks of intensive coaching, an attractive pre-seed funding of up to 150,000 euros and access to key networks.

Luxembourg has also set up two public-private investment funds to attract foreign start-ups in the growth phase to settle in the Grand Duchy: the Digital Tech Fund, dedicated to ICT companies, and the Luxembourg Future Fund, in collaboration with the European Investment Fund to support start-ups, with an international dimension. □



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Luxembourg, the heart of ArcelorMittal's global operations

ArcelorMittal's presence in Luxembourg dates back to 1882, when Nord-Est, one of our predecessor company's was founded. Today, the company is headquartered and registered in Luxembourg and is the largest company, by market capitalization, listed on the Luxembourg stock exchange. With 4,244 employees comprising 53 nationalities, ArcelorMittal is also one of the largest private sector employees in the country.

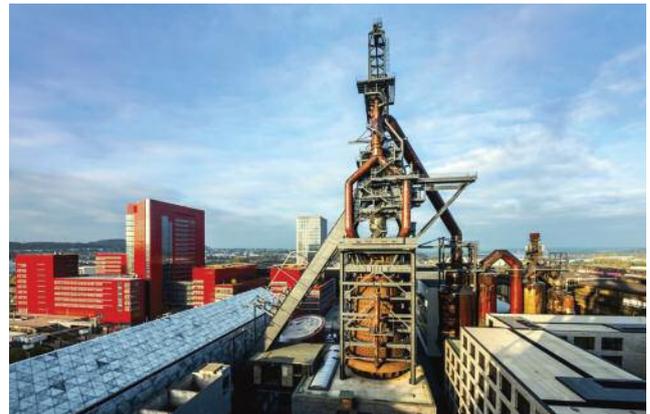
We produce more than two million tonnes of crude steel annually in Luxembourg across nine industrial facilities, including electric arc furnaces at Belval and Differdange, rolling mills at Rodange; galvanising lines at Dudelange, wire mills at Bissen and Bettembourg, a special processing unit at Cofralux, a research and development centre in Esch-sur-Alzette and a mechanical workshop in Dommeldange.

These facilities have provided steel solutions for many landmark building projects. Recent examples include beams for the One World Trade Center in New York City and the Mistral Tower in Izmir, Turkey, and metallic coating (Aluzinc) for cladding and roofing for the new Geoffroy-Guichard stadium in Saint-Etienne. ArcelorMittal also produces its flagship advanced high-strength steel for the automotive sector, Usibor®, from our Dudelange facility, and Crapal® wire, some 6,000 kilometres of which we supplied to the Bordeaux vineyards in 2013 and 2014.

The company maintains a corporate responsibility (CR) network with CR executives at each site, who have developed stakeholder engagement plans based on the group's four pillars of corporate responsibility. Since 2010, they have actively contributed to the annual Luxembourg CR report. Since 2011, this report has been aligned with the Global Reporting Initiative framework.

The flagship project of ArcelorMittal is one closest to its heart – the construction of a new global headquarters in Kirchberg, Luxembourg. This project confirms ArcelorMittal's commitment to maintaining its presence in Luxembourg, while also ensuring its employees enjoy a state-of-the-art working environment, and one which demonstrates the environmental advantages of using steel in construction. Once constructed, the building will become a significant landmark in Luxembourg, with its vision of steel used for both the building's internal structure and external façades. Construction is expected to start in 2019 and should be completed within two years.

In India, ArcelorMittal is in the process of acquiring, via a



© ArcelorMittal Belval, Luxembourg



© ArcelorMittal global Headquarters near the Philharmonie, Kirchberg

joint venture with Nippon Steel & Sumitomo Metal Corporation, Essar Steel India Limited (ESIL) via a corporate resolution process. ArcelorMittal's Resolution Plan, which was verbally approved by the Indian National Company Law Tribunal on 8 March 2019, includes an upfront payment of 42,000 crore rupees (approximately \$5.7 billion) towards ESIL's debt resolution, with a further 8,000 crore rupees (approximately \$1.1 billion) of capital injection into ESIL to support operational improvement, increase production levels and deliver enhanced levels of profitability.

ArcelorMittal's core philosophy is to produce safe, sustainable steel, with the health and safety of our employees being our number one priority.

This philosophy sits at the heart of our approach in Luxembourg, and will be central to our efforts as we establish our presence in India. □



ArcelorMittal

IEE's SBR business in India

a
sense
for
innovation

Luxembourg-based sensing specialist IEE, was founded in 1989 and currently has operations in Europe, America and Asia. This innovation driven company is a worldwide pioneer in Passenger Presence Detection and one of the leading suppliers of advanced automotive interior sensing solutions. IEE is the global market leader for Occupant Detection Systems, selling their Seat Belt Reminder (SBR) system to almost every Original Equipment Manufacturers (OEMs) worldwide. SBR, an occupant detection sensor, triggers an audiovisual warning reminding unbelted occupants to put on their seat belts. It provides a highly effective way to increase seat belt wearing rates and as a result saves lives, since a crash at only 30km/h can be fatal for an unbelted occupant.

In the near future, the Indian automotive market will see a rapid market penetration of Occupant Detection Sensors due to an upcoming national legislation. The Indian government has decided to promote vehicle safety via a new Automotive Industry Standard (AIS-145) which will mandate, among others, the use of driver airbags and SBR systems on the front seats of passenger cars. On the front passenger seat, an SBR sensor is used to confirm the presence of an occupant. Starting from July 2019 onwards, all Indian and foreign OEMs, will have to quickly and mandatorily implement SBR sensors into all cars sold on the Indian market.

IEE became active in the Indian automotive market in March 2016 with the appointment of Quanzen Consultants as IEE's local sales representative. With the signing of a sales agreement with Quanzen, IEE started offering local sales and engineering support for all Indian OEMs. Founded in 2009, Quanzen is a Pune-based consulting company that offers sales and technical support to international companies in the automotive industry. They represent international automotive suppliers in sectors such as Powertrain, Safety, Sensing or Electric mobility.

IEE's goal is to achieve the same market leader position in the Indian market for Occupant Detection Systems as it has in the rest of the global market. Therefore, IEE has used its existing global infrastructure for fast response to



Request for Quotes from Indian OEMs and to design, develop, produce and test their sensor technology to ensure a successful market introduction.

Over the past 2 years, IEE has been successfully building its market leader position, especially with Indian OEMs by promoting implementation of SBR Sensors in the seats of current, facelifted and new vehicles by 2019. As a result, they have been winning significant SBR business. Much of this has been possible due to IEE's already "pre-legislative" initiative to introduce low cost SBRs to Indian OEMs. At the time of the announcement of the new legislation, the companies were already primed to continue working with IEE. The ability of IEE to leverage Quanzen's support and local market knowledge at that time, as well as being able to offer local sales and engineering support, resulted to a large extent in securing IEE's current SBR business in India.

The Indian automotive market is continuously growing and poised to be the world's 3rd largest by 2020. By 2026, passenger vehicle production expected to reach 9.4 million units annually making India one of the fastest growing automotive markets worldwide and a focal point of IEE's business interests. IEE is committed to its Indian customer base and the strengthening of its Indian ties is a major part of the company's strategy for the upcoming years. □

IEE is a worldwide pioneer in passenger presence detection and one of the leading suppliers of advanced automotive interior sensing solutions. Founded in 1989 and headquartered in Luxembourg, it has operations in Europe, America and Asia. The innovation driven company has a long history in developing and manufacturing cutting-edge sensing systems for automotive industry, building management and eHealth. IEE employs 4,100 people worldwide and more than 10% of the company's workforce is engaged in Research & Development www.iee.lu

The CERATIZIT Group—Passion and pioneering spirit for carbides



© Ceratizit India Headquarter in Kolkata, West Bengal



© Ceratizit India Round Tool Solutions, Bengaluru

The CERATIZIT Group is one of the world's five leading carbide manufacturers. The Mamer, Luxembourg, based company develops and manufactures highly specialised carbide cutting tools, inserts and rods made of hard materials as well as wear parts and successfully develops new types of carbide, cermet and ceramic grades. CERATIZIT's innovative carbide solutions are used for instance in mechanical engineering, tool construction, the wood and stone working industry and many other industries including the automotive, aerospace, oil and medical sectors.

More than 95 years of hard material experience

The company, which is the result of the merger of the Luxembourg based CERAMETAL and the Austria based Plansee Tizit in 2002, can look back on more than 95 years of experience in the hard material business and has grown significantly over the last years, today boasting more than 9,000 employees, 34 production sites and a sales network of over 70 branch offices. In the last fiscal year, the CERATIZIT Group was once again able to achieve a new record turnover of more than 1.2 billion euros. With a year-to-year growth of over 15% and a turnover that has more than quintupled over the last ten years, the Indian subsidiaries contributed significantly to this success story.



The fourth largest cutting tool supplier in India

Since the opening of the first production site in Kolkata more than 20 years ago, the Group has come a long way in India and is now the fourth largest cutting tool supplier in the country. Today, the Group has three production sites – one in Kolkata and two in Bengaluru – and more than 630 employees in India and attaches great importance to producing in India.

The three Indian sites are not only capable of producing almost the complete range of the Group's cutting tools. Their know-how also includes the design and production of special tools for partners in the industry and end-to-end solutions that include the fixture and the programming of machines, thereby offering the Group's customers a complete package for all machining applications.

Organic and strategic growth

An important step for the recent growth on the Indian market was undertaken in 2012 with the investment in the German solid carbide tool specialist Günther Wirth (GW), which marked the Group's entry into a new market segment and expanded its presence in India by adding the first production facility in Bengaluru. The acquisition of Cobra Carbide India, another Bengaluru based solid carbide specialist, in 2015 was the next step on the strategic growth path in India. Today, the former GW and Cobra Carbide employees work together on the same premises and form CERATIZIT India Round Tool Solutions.

The third Indian production site became part of the CERATIZIT Group in October 2017 as part of the acquisition of the KOMET GROUP. CERATIZIT Bengaluru complements the production capacities of the two other Indian production sites and is an important building block for further growth in India. However, this growth should not only come from the Indian market. In the future, the Indian production sites will increasingly serve as production hubs for the rest of Asia.

Investments pave the way for further growth

To prepare for this growth, the CERATIZIT Group is continuously investing in the Indian sites. Apart from continuous investments in modern equipment, there have been two big infrastructure projects in recent years. In 2013, the company inaugurated a modern, employee friendly new plant in the Uluberia Industrial Growth Centre near Kolkata that replaced the old Kolkata site used since the mid-1990s. The 25,000 m² site not only includes 5,700 m² of production area with modern machines and well-organized material flows, but also a new logistics centre, office space, a canteen and even a wellness centre for the employees. The efforts have paid off, as the state government of West Bengal has acknowledged the new plant as one of the best production facilities in the state.

The second big site extension is currently taking place in Bengaluru, where additional space was dearly needed to accommodate further growth. With the cornerstone having been laid last April, the former KOMET of India site is currently being extended with a new building, which will more than double the available space from just short of 3,400 to around 7,900 m². This will not only create additional space for new machines, but also numerous new jobs in the coming years. □

SES: Ready to fast-track Digital India

For the past 50 years the Indian Space Research Organization (ISRO), the largest government space agency in the world has empowered Indian communities and businesses via satellite.

In the last two decades, SES has had an important relationship with ISRO India in helping to meet the communications needs of India. Today, SES provides satellite capacity into India via ISRO using six geostationary (GEO) satellites – NSS-12, SES-8, NSS-6, SES-7, SES-9 and SES-12. These satellites host two of India's major DTH platforms that are viewed by some 30 million satellite TV subscribers. We also provide capacity to five of India's major VSAT providers, serving more than 200,000 VSAT terminals spread across the length and breadth of India. These VSAT providers use our capacity for banking, enterprise, education, telemedicine and e-government networks serving even the most remote parts of India. We are proud to have helped India grow its vibrant broadcasting sector, and to have helped increase rural connectivity, and we have not stood still.

Empowering India with the right solutions

India's Digital National Communications Policy sets a goal of providing 50 Mbps of broadband connectivity to every citizen by 2022. This includes creating "Broadband Highways" to 250,000 villages in India, many of them in remote locations. If these goals are to be achieved cost effectively and by 2022, a massive amount of additional satellite bandwidth will be needed. ISRO itself will be adding more capacity over the next few years, but more will be required to achieve the goal that has been set.

SES stands ready and is willing to help accelerating achievement of this goal. We have made investments in satellite assets that can be put to immediate use over India. These include our newest high-throughput satellite, SES-12, and our innovative O3b Medium Earth Orbit (MEO) constellation that can serve connectivity needs across India -- be it the Northeast or the Andaman and Nicobar Islands. Since 2014, our MEO constellation has been delivering extremely high capacity, fibre-like connectivity to customers around the world and is a perfect fit for isolated geographies in India having concentrated bandwidth demand.

The multi-orbit solutions that we have will enable us to complement ISRO satellite assets to fast track deployment of high-speed broadband and mobile services in remote locations and bridge the digital divide. Our fully-funded MEO system is ideal to meet the burgeoning demand for connectivity at sea and in the skies and is key in driving the digital transformation and increasing cloud adoption as we seamlessly integrate satellite-based services into the broader global terrestrial network.

At the same time, the satellite can help support India's



SES Headquarters in Luxembourg *Copyright: Toby Smith*

growing direct-to-home (DTH) TV market, as more and more consumers in rural India embrace the medium.

We believe that our unique combination of GEO and non-GEO (NGSO) satellite connectivity solutions can further accelerate the country's push towards a Digital India. The Government of India needs only be willing to embrace our investments that have already been made over India and develop new partnerships with us.

SES Worldwide

Worldwide, SES's fleet of over 70 satellites provides reliable and high-performance connectivity to broadcasters, content and internet service providers, mobile and fixed network operators, governments and institutions around the world.

Today, over 1 billion people globally are able to access and enjoy television services thanks to SES. We lead the industry by delivering more than 8,000 number of TV channels worldwide to over 350 million TV homes. With consumers' viewing habits evolving in the last couple of years, we are also now enabling broadcasters and content owners with new distribution platforms so that they can enter new markets.

Via our end-to-end managed services and capacity, we are also connecting communities and businesses in underserved rural areas, and are delivering premium connectivity experience to businesses and passengers ranging from the skies to the seas. Through our partnership with four leading Inflight Connectivity (IFC) operators and biggest cruise operators, we are now connecting the majority of passengers both in the skies and at sea.

Finally, in the move towards Digital India coupled with the growing trends of a global cloud-scale, IoT and 5G world, we should not be surprised to see major Indian cities be early adopters. What's important is for us to show our worth in our high-performance satellite and provide secure and dependable connectivity solutions. □



Photo caption: SES-12 roaring into space onboard a SpaceX Falcon 9 rocket at Cape Canaveral *Photo credit: SpaceX*

ROTAREX, the Gas control Industry's Innovation Leader “Made in Luxembourg”

In addition to the many business sectors where Luxembourg excels, like Banking, Steel and Space Mining, the Grand Duchy is also a major global hub for pressurized gas valves and control equipment technology. The technology epicenter is Lintgen, a small village north of the capital Luxembourg City. There, stands the global headquarters for ROTAREX – the world leader in cylinder valves and equipment for pressurized gas applications. They operate in almost all sectors where pressurized gas is used - not only to industrial uses of gas – but also to fire suppression, LPG, specialty and ultra-high purity, cryogenic, automotive and water carbonation applications.

ROTAREX is the story of how a successful global company leverages the best of “Made-In-Luxembourg” Quality and Advanced Technology – with the best of local Indian market expertise and on-the-ground service. All products are designed and manufactured at their Luxembourg Headquarters – so they can tightly control quality and technical performance – but they rely on their team of experts in India (service offices in Mumbai, Delhi, Bangalore), as well as 33 other countries around the world - to provide the local support and service that most other manufacturers cannot.

Luxembourg has been ROTAREX' home for almost 100 years. The historical core of the company is as a valve manufacturer for industrial gases. Up until the 1970's they were a strong regional player, and were known for their exceptionally robust and high-quality valve designs. Their leap to world-leader started in 1976 when Jean-Claude Schmitz became CEO, and executed his vision to become a global innovator.

He created 4 in-house testing laboratories, and hired a small army of the best-and-brightest engineers to develop innovative new products. Add to that an in-house materials laboratory, and electronics laboratory, a simulation laboratory and advanced technology group... the result is a truly world-class innovation and technology infrastructure that is far superior to any competitor capability.

ROTAREX has over 100 patents – most of them representing major industry-breakthrough technologies. They created the tied-diaphragm cylinder valve technologies now widely used in Ultra High Purity Gas (Electronic gases) applications. They pioneered the integrated valve technologies now widely used in medical gas applications. The European Space Agency (ESA) chose ROTAREX when they needed special cryogenic valves for their Ariane Rocket fuel coolant systems – as did the CERN particle accelerator project when they needed high-performance pneumatic line valves to power their billion-euro particle collider. Today, ROTAREX enjoys the reputation as the innovation and technology leader in its industry.

95% of their products are manufactured in Luxembourg – where high-precision machining and rigorous quality proce-

© ROTAREX India Team



dures ensure that each product meets the ROTAREX standard of technical excellence. In the world of gas equipment, “Made-in-Luxembourg” became the leader in terms of technical quality. Although ROTAREX is such a fast-growing global industry leader – it maintains a focus on local service. ROTAREX is a fourth-generation Luxembourg family-owned business who values customer relationships, and working face-to-face with customers to ensure their needs are met.

The ROTAREX India subsidiary is a perfect example of this successful model in action. Established in 2011, the full-service ROTAREX India Team is 11 persons strong – all Indian nationals. Together they serve the country from their

Head office in Mumbai, two satellite offices in Delhi and Bangalore and a Logistics hub in Kharghar, Navi Mumbai. 8 members of the Team are trained engineers, experts in

gas equipment with a strong collective experience in the gas industry, and who are highly qualified to consult customers across our entire global product range. The Indian subsidiary maintains a strong bridge to the Luxembourg headquarters, and has access to the full global product range and expertise – but they act entirely independently as if they were a fully Indian business. They are. Their operating independence means they act according to the market needs – can better understand their customers and provide better service.

In fact, the Indian Team saw the unmet need to provide system engineering and installation support services, in addition to the gas equipment – and had the authority to create an infrastructure to provide those services. It is currently a pilot project which, if successful, will be expanded to other countries. It clearly illustrates how a Headquarter can benefit by listening to their local teams, and letting them take leadership.

It's a model that works. By leveraging the Luxembourg technical excellence with the local Indian market know-how will continue to be the backbone of the ROTAREX way of doing business in India. And because of that, the future looks bright. □



Exploring Luxembourg in the life and art of Amar Nath Sehgal

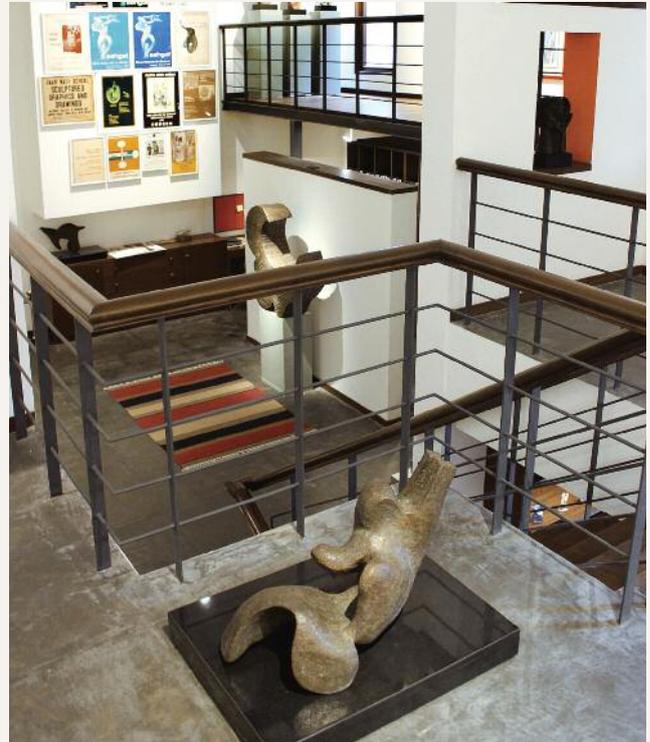
The Amar Nath Sehgal Private Collection, the first single artist museum of the country is an ode to the sixty years long story of reconciliation of the life and art of the Indian modern artist, Amar Nath Sehgal, a man in constant struggle for nearly six decades with the memories of Partition. For Amar Nath Sehgal, the challenges of media mirrored his grappling with his inner turmoil and tensions. He explains his creative conceptual convictions: "The problem concerning the sculptor is chiefly to construct in material the form that conveys a mood, a feeling or an attitude. But when the feelings are not clear and well defined, when they lie dormant in the conscious mind, it is through hard and concentrated efforts that they are diagnosed and their meaning properly understood."¹

He treated the material and the resulting form as a means of reconciliation with his past: a spiraling journey cutting inwards and onwards: exhuming and horizontal, where memories were revisited and renegotiated everyday to break open the existing layer of creative expression, to delve deeper and grab onto the next layer to allow a purer and cleaner understanding of the past to take form. The resulting artwork had a strong rhythm and fluidity; as if Time flowed through the medium, eroding the jagged and hard edges of memories only to leave behind glistening forms with smooth lines retelling the story of mankind. This was the artistic parcours of the artist-sculptor-poet, Amar Nath Sehgal.

The artist had a 24 year long romance with Luxembourg which began in 1979 and went on even after his departure from Luxembourg in 2004. He was invited by Luxembourg to set up his studio and live in the country by Prime Minister Pierre Werner. Luxembourg slowly seeped in amber, copper and gold hues into his grey watercolour works. These exquisite and vibrant watercolours would often find themselves on the cover of the cultural section of the daily, Luxemburger Wort.

His seminal work, Mahatma Gandhi inaugurated in 1972 (photo) still exists in the Municipal Park of Luxembourg and some of his large, abstract sculptures are part of the collection of the Musée national d'histoire et d'art in Luxembourg City.

The Embassy of Luxembourg in India through H.E. Mr. Jean-Claude Kugener has played a pivotal role in reigniting the Indo-Luxembourg connection in India through the art of the artist, Amar Nath Sehgal. The Embassy has been for the past one year, through private previews and curatorial walkthroughs helped the museum create a deeper awareness and appreciation of the artist's contribution to Indian art among art lovers in Delhi.



© The Amar Nath Sehgal Private Collection

The museum in turn is happy to have some of the seminal works from its collection at the Ambassador's Residence to celebrate the 70 years of friendship between the two nations. His Excellency noted "It is a great honour that the Luxembourg Embassy in Delhi has been given a collection of fascinating works of art on loan by the family of the renowned artist Amar Nath Sehgal. This generous gesture is particularly meaningful as we currently celebrate the 70th Anniversary of the establishment of the diplomatic relations between Luxembourg and India. These seven decades of friendship have been marked by people like Amar Nath Sehgal and his family. Moving to the Grand Duchy in 1979/80, Mr. Sehgal's extraordinary work contributed to the strengthening of bonds between both countries while promoting cultural diversity through the "Creative Fund", the artist established during his Luxembourg years. His bust of Mahatma Gandhi in the Municipal Park in Luxembourg City is till this very day a landmark for every Indian in Luxembourg. With his departure in 2004, the artist has left a remarkable heritage in Luxembourg with numerous sculptures, paintings and drawings in private and public collections." □



Sehgal

¹ SEHGAL Amar Nath, *Sculpture Becoming*, Indian Sculpture, Indian Sculptors' Association, Bombay, 1961, p.16.

Amer-Sil Ketex—the Luxembourg presence in West Bengal

AMER-SIL KETEX Private Limited (ASKPL) (www.ketex.com) originated as an entrepreneur-driven manufacturing organisation in Kharagpur in West Bengal about forty-two years ago. Having successfully handled several inflection points in the journey, ASKPL keeps experiencing exponential growth year-on-year.

Currently, a medium sized enterprise, the aspiration is to scale up well to be counted as a large entity within a few years. The Company has a second unit in Himachal Pradesh, and a subsidiary in Bangladesh.

In 2016, KETEX Private Ltd. joined force with AMER-SIL S.A. (ASL) of Luxembourg, to be a dominant player in India as well as overseas in its chosen lines of business. A third domestic unit has been set up in Bengaluru, and went into commercial production in 2017.

ASKPL's products are technical textiles, lead acid battery components (gauntlets or pluri tubular bags, separators, float valves, bottom bars), and various fibreglass applications. Fibreglass applications include products for automobile industry, electrical insulation, molten metal filtrations for aluminium industry, filter fabrics for boiler houses, high temperature applications for up to 1200°C, etc.. With a best in class pool of manpower, the Company also has expertise in research and commercialisation of developed products.

ASKPL collaborates with premier scientific institutions like the Indian Institute of Technology Kharagpur, the Indian Institute of Engineering Science and Technology Shibpur, and the University of Calcutta Science College for exploration of possibilities with advanced materials.

Repeat export of gauntlets for submarine battery for the Turkish Naval Force is a significant achievement for the Government of India's "Make in India" mission. A key strategic strength of the Company is the ability to be cost competitive in the market in spite of a superior quality delivery. The customer base consists of multiple blue chips, and the Company enjoys single vendor relation with many of these.

ASKPL's technical textiles weaving plants have the capability to convert a range of new generation man-made yarns — polyester, nylon, fibreglass, kevlar fibre, carbon fibre. ASL has been supporting ASKPL's requirement of PVC sheets, and cutting edge stitching machines. The oft-quoted line from Rudyard Kipling's ballad "East is East, and West is West, and never the twain shall meet", was contradicted by the poet himself a couple of lines later "But there is neither East nor West, Border, nor Breed, nor Birth, When two strong men stand face to face"! The joint venture between ASL and ASKPL is a testimony to Kipling's observation in late nineteenth century. The Grand Duchy of Luxembourg played a pivotal role in unifying the WWII-torn nations of Europe, by being one of the first six members of EEC (European Economic Community), which was



© Amer-Sil Ketex Private Ltd.

a precursor to today's European Union (EU). And, magical synergy got created with the signing of the Joint Venture Agreement (JVA). India, a subcontinent, is a shining example of "Unity in Diversity", a cultural melting pot. The concept of Vasudhaiva Kutumbakam (or, The world is a family) is ingrained in the psyche or soul of most Indians. This translates into our business dealings.

ASKPL's human resources are a blend of experience and youth. The young Engineers and other qualified professionals are hungry to demonstrate application of skills. The collective brainware is ready to leap the organisation to the next level. □



AMER-SIL KETEX PRIVATE LIMITED



THE LUXEMBOURG FINANCIAL CENTRE AND INDIA: A POTENTIAL FOR GROWTH

India and Luxembourg can look back with pride on years of excellent economic and trade relations. In order to strengthen these further, the Grand Duchy of Luxembourg has been working to become India's main partner in international finance. The Grand Duchy, which has a well-established reputation in Asia as a member of the Asian Infrastructure Investment Bank (AIIB) and as the European headquarter of numerous Japanese and Chinese banks, is keen to develop the enormous potential available in partnering with the Indian financial sector.

An important milestone was the first listing of a Masala bond on the Luxembourg Stock Exchange (LuxSE) in 2008. It was the first ever listing of such a security in Luxembourg and the number of INR-denominated debt securities has gradually increased ever since. Today, important names such as the Asian Development Bank, the International Bank for Reconstruction and Development and J.P. Morgan have raised capital using Luxembourg-listed Masala bonds.

As implied above, the capital needed to finance India's sustainability strategy is not only available via bond-listings, but also through the establishment of overseas investment funds. Luxembourg, as the second largest investment fund

centre in the world, has the necessary cross-border expertise for asset managers to set up funds with different international investment strategies and raise capital for them from investors all over the world. Today, there are some 52 funds in Luxembourg investing almost USD 28 billion through a dedicated Indian investment strategy, managed by names such as Goldman Sachs, Aberdeen Standard and Morgan Stanley. Many other funds have a smaller exposure to India for diversification purposes; If we were to consider these as well, the total value invested in the country would rise even further.

Such a strategy is not only useful for foreign asset managers wishing to invest in India, but also for Indian asset managers who seek to attract foreign capital by selling their local expertise in the international markets.

Firms such as Kotak Mahindra and Reliance Capital Asset Management

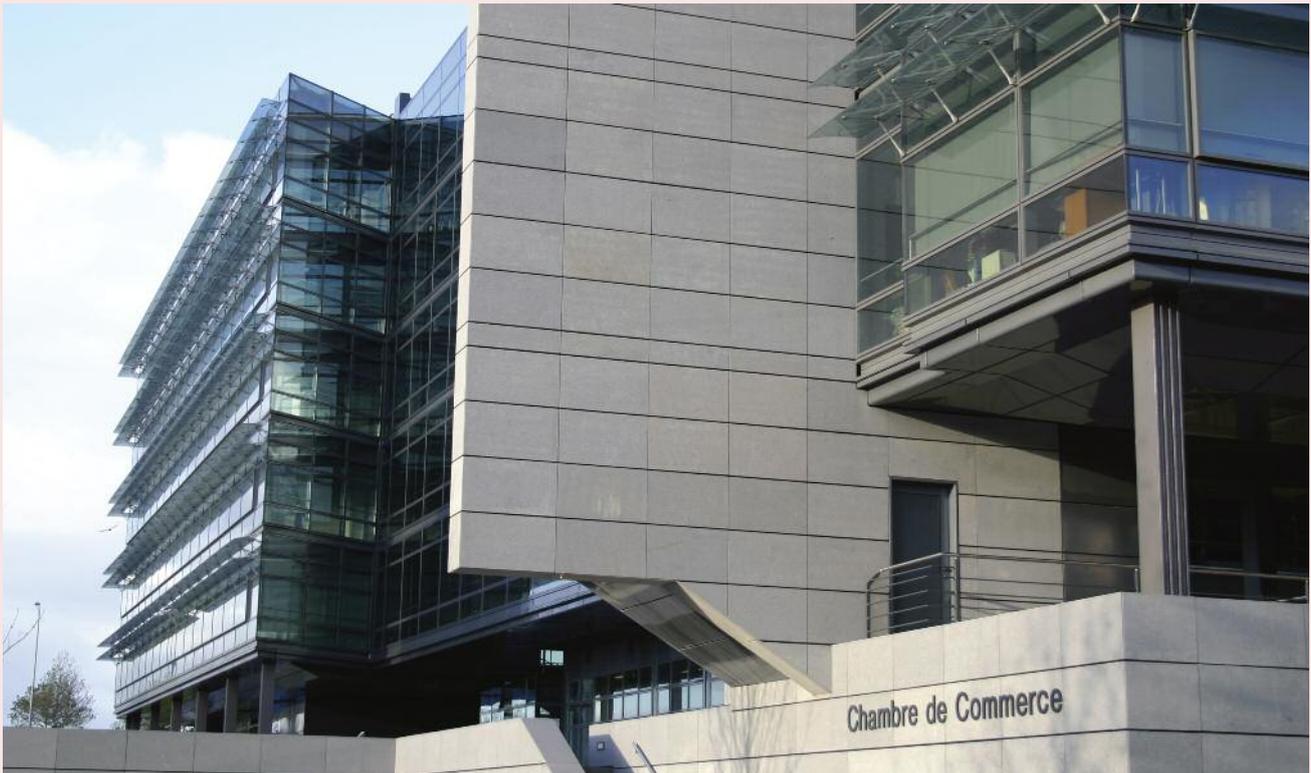
have chosen to set up funds in Luxembourg for multi-market distribution, enabling them to raise capital internationally for reinvestment in the Indian economy.

With the Indian FinTech sector expecting to double its growth rate by 2020, some firms are already highly successful on an international basis. In 2004, Tata enlarged its footprint in Luxembourg by establishing Tata Consultancy



An important milestone was the first listing of a Masala bond on the Luxembourg Stock Exchange (LuxSE) in 2008

©LuxembourgforFinance



Services, which provides IT solutions across the EU. Luxembourg is the European hub for payment providers and diverse technology companies such as Paypal, Amazon, Rakuten, Skype and Alipay, creating a perfect environment for Indian technology companies to thrive.

Luxembourg offers FinTech companies a comprehensive ecosystem that is internationally oriented and highly adapted to their needs. But it does more than this. The financial centre also offers a range of grants, incubator facilities and an accelerator programme that combine financial support with professional expertise. The LHoFT, Luxembourg's FinTech platform, has a special program focusing on inclusive finance that leverages Luxembourg's long-standing expertise in financial inclusion, most notably through microfinance. As the largest domicile for Microfinance Investment Vehicles (MIVs) worldwide, Luxembourg has a strong card to play in this sector.

The annual European Microfinance Award illustrates Luxembourg's commitment to building capacity in this area. Some 30 MFIs take part each year in a themed competition that awards EUR 100,000 to the winner and valuable consolation prizes (EUR 10,000 and a video) to the runners-up. The Indian MFI ESAF Small Finance Bank was short-listed in 2018.

One very important factor that faces companies today is the danger of irreparable climate change. It is now accepted that one of the main lines of defence is to finance actions that prevent change or that mitigate the negative effects existing problems. Luxembourg is a pioneer in sustainable fi-

nance: it has the largest market share in Europe for responsible funds and was the first market to list a green bond, for the European Investment Bank in 2007.

Luxembourg is also home to the first stock market that accepts only green, social and sustainable securities, the Luxembourg Green Exchange (LGX).

The labelling agency LuxFLAG offers five labels that provide security to investors that their targeted ESG investment fund, or green bond, continues to meet its investment criteria throughout the lifecycle of the product.

An urgent project, indeed one of the most ambitious infrastructure programmes in the world, is India's renewable energy plan. The United Nations has called on financial sectors in all countries to support such programmes by encouraging private sector investment. Working alongside the European Investment Bank, the Grand Duchy of Luxembourg has helped to pioneer the development of layered investment funds, designed to encourage private sector investment by lowering the risk associated with project finance. These

projects lie at the heart of Luxembourg's contribution to the UN sustainable development targets.

Luxembourg's Financial Centre is in a unique position to partner with governments and companies all over the world to meet their project financing targets. India is not an exception. By leveraging public funding to raise much larger sums of money from private investors, the Grand Duchy has demonstrated its right to a ringside seat in the fight against climate change. □

**Luxembourg offers
FinTech companies a
comprehensive
ecosystem that is
internationally oriented
and highly adapted to
their needs**

BOSON ENERGY

THE IMBY COMPANY

Boson Energy is a Luxembourg company with strong Swedish roots taking on the waste challenges of India and the world.

Boson Energy develops clean and small-scale 'first mile' waste-to energy solutions that extract a maximum of energy from municipal solid waste and other mixed wastes using the next generation of Advanced Thermal Treatment. 'First mile' because several smaller distributed plants treating 100-300 tons of waste per day can be close to the source of the waste. As a result, waste transportation and pollution can be reduced 70-90% compared to transporting waste far to one large central plant processing 500-2000 tons per day. This also does away with the long supply chains that leak waste into the environment and rivers like the Ganges.

In addition to affordable power, heat, or greenhouse-gas-free thermal cooling for direct local use; the only other output from Boson Energy's Zero Waste process is the environmentally safe construction material IMBYROCK® – IMBY for In My Back Yard. This is a highly circular approach and a big difference compared to the large amounts of toxic ash that plagues the environmental footprint of large-scale waste incineration.

On emissions, Boson Energy's technology also performs far below the latest EU BREF regulations, so it will effectively clean air in Indian cities. Game-changing performance aspects like these contributed to make Boson Energy a 2019 Red Herring 100 winner.

- Affordable, reliable, and clean waste solutions for urban, rural/agri, and island communities – treating waste to FULL STOP
- A true first-mile solution for local thermal treatment of waste and biomass residue
- Reduces stress over full lifecycle 70-90% less traffic, pollution, land-use – with unique efficiency for growth and prosperity



Boson Energy is currently the only solid waste technology globally invited to the National Mission for Clean Ganga's 'Environmental Technology Verification' process

CEO Jan Grimbrandt: "By being small and local we can be better, cleaner end cheaper than any other technology. Looking at the waste quality in India in terms of calorific value and moisture, our technology is ideally suited for the India market. We are already working with large global and local companies to prepare for a 'Make in India' rollout with domestic manufacturing and assembly".

Boson Energy was founded in 2008 based on the team's long experience within thermochemical processes, energy, and waste. Founder and CEO Jan Grimbrandt has already built and sold two successful companies to SIEMENS and Nalco.

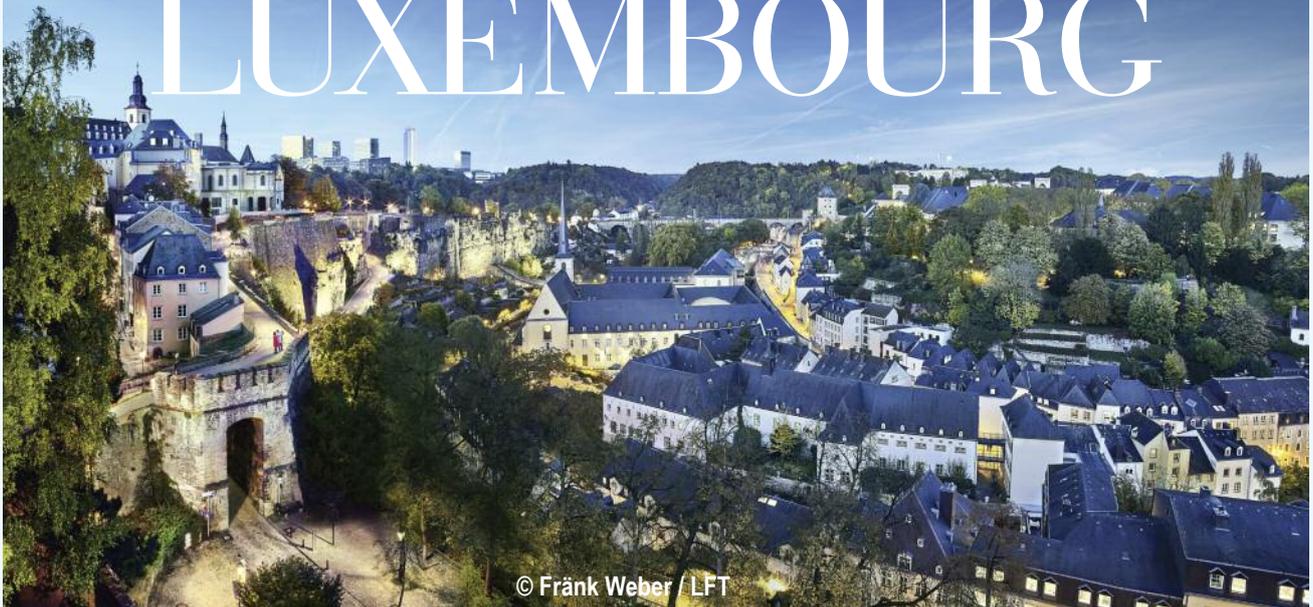
Boson Energy is also the only foreign company represented on the technical committee of CII's National Task Force on Waste-to-Worth.

Boson Energy is only one of many Luxembourg companies active in India, some with a long history. A part of this success is the strong and long standing diplomatic relations between India and Luxembourg – celebrating its 70th anniversary this year under the auspices of H.E. the Luxembourg Ambassador to India Jean Claude Kugener.

CEO Jan Grimbrandt again: "We have been destined to make a difference in India from inception. We named Boson Energy after the boson group of energy carriers, which are named after Bengal-born physicist Satyendra Nath Bose – who developed the foundation for Bose-Einstein statistics". □

www.bosonenergy.com
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DISCOVER UNEXPECTED LUXEMBOURG



Set in natural and green surroundings, Luxembourg City, the capital of the country has been marked by centuries of history and shaped by tradition and modernity.

The old city of Luxembourg and its fortress around the Grand Ducal Palace have been on the UNESCO World Heritage list since 1994. The historical, medieval, classical and contemporary styles come together like nowhere else. The remains of the centuries-old fortifications are among the many tourist attractions in Europe, called the Casemates with 17 km of underground tunnels. The Corniche offers panoramic views of the historic sites and the surrounding valleys of this unique city, which is often referred to as the “Gibraltar of the North”. On Kirchberg you will find the Museum of Modern Art (MUDAM), which was designed by the Chinese-American architect Ieoh Ming Pei and the “Drai Eechelen” Museum, which is housed in the Fortress and illustrates the millenary history of the city and the country.

But there is more to visit outside the capital. With their majestic landscapes that alternate between scenic highlands and winding valleys, the Éislek region (Luxembourg Ardennes) offers an exceptional natural experience. A large number of cycling and hiking trails enable enthusiastic visitors to walk through the forests and picturesque villages. The North of Luxembourg is home to some of the best maintained medieval remains that alights this region. You should visit the picturesque Castle-Palace of Vianden, which was built between the 11th and 14th Century on the foundations of a Roman castle. It bears the Hohenstaufen characteristics and is one of the largest and finest feudal residences of the Roman and Gothic eras in Europe. At the impressive Castle of Clervaux, you can visit the final integral version of the photographic exhibition “The Family of Man” by Luxembourg born Edward Steichen, which was exhibited in over 150 museums and seen by more than 9 million people world-

wide before being permanently installed in the Castle in 1994. The exhibition was inscribed in the UNESCO Memory of the World Register in 2003 in recognition of its historic value.

It is also in the North of Luxembourg that you will find the two largest nature reserves in the country: the “Naturpark Our” and the “Naturpark Öewersauer”. In addition to their function of protecting natural resources, the Ardennes parks are host to some of the most delicious local products in the Grand Duchy. Such delicacies include herbs, oils, teas and cereals “Vum Séi” or products from the microbreweries “Brasserie Ourdaller” and “Den Heischer.” Perfect as a little gift basket or for a picnic in the surrounding forests.

Another recommendation is to visit the capital of the Mullerthal region, Echternach, which is the oldest city in Luxembourg. The famous dancing procession of Echternach, held every year on Whit Tuesday, was registered as a UNESCO Intangible Cultural Heritage in 2010. It is the last remaining traditional Roman Catholic dancing procession in Europe that honours Saint Willibrord, who established the Abbey of Echternach in the 7th Century.

The Land of the Red Rocks is a region of Luxembourg located in the south of the country. It owes its name to the red ore that was behind the success of the steel industry in Luxembourg, back in the industrial era. Today, the former mining area of the Land of the Red Rocks, also referred to as Terres Rouges, has established a new identity through combining ancient and new technologies.

The valley of the Moselle in Luxembourg is famous for its steep hills and vineyards. It is the birthplace of Luxembourg wines, mostly white varieties such as Riesling, Auxerrois and Pinot Gris. The hinterland of the Moselle is home to large plantations of fruit trees for the production of fresh juices, liqueurs and schnapps. Themed hikes, such as the wine route, are fully dedicated to the discovery of this region. □