

Steinbeis Centre for Technology Transfer India

A decade of Services in Indian Market

The Indian Scenario

India today offers ample opportunities for international business. Its thriving demography of working age youth, political stability and fast growing economy create a combination which no business should ignore.

Some of the noteworthy government projects and incentives are as follows:

1. **Sagarmala Project:** The project includes modernization of ports, setting up of coastal economic zones, new major ports and fish harbours. Capital outlay of USD 10 billion (Ministry of Shipping)
2. **AMRUT:** Its aim is to recast urban landscape and make urban centres more liveable and inclusive. Capital outlay of USD 7.69 billion.
3. **Roads & Highways:** Development of about 7000 km of national highways under Bharatmala Pariyojana. Capital outlay of USD 12 billion.
4. **Railways:** Dedicated freight corridor for decongesting existing network. Capital outlay of USD 12.3 billion.
5. **Swachh Bharat Abhiyan**, or the **Clean India Movement** was launched in October 2014 as a campaign to clean the streets and infrastructures of India. It is India's largest ever initiative in this area. Its objective is the elimination of open defecation, modern and scientific municipal solid waste management and capacity augmentation for local ULB's (Urban Local Bodies). The total cost of implementation of this initiative is INR 62,009 crores (approx. EUR 9 billion).
6. **Clean Ganges:** Modi has given strong support to the rejuvenation of the Ganges river, putting the National Ganga Council under his direct chairmanship and pushing forward initiatives to improve the quality and environment of what is today one of the heaviest polluted rivers in the world. In addition to the Ganges project, other rivers like the Yamuna are high on the radar.
7. **Smart Cities:** India's Smart Cities Mission, which was launched in 2015, aims to foster sustainable and citizen-friendly urban development in the country, through an initiative called 100 Smart Cities. One of the main reasons for this massive project was to alleviate the metropolises and make other cities more liveable with good job opportunities. Some financing will come from the central government and states, the rest from development banks, public-private partnerships, etc. In addition to the 100 Smart Cities, there are several cities with big aspirations and the desire to implement smart solutions, Smart Port cities coming up, as well as various private cities for which the developers are looking for smart solutions.

Other government initiatives that Steinbeis India is partaking in includes **Make in India**, which was launched by Prime Minister Modi in 2014 with the goal to transform India into a global design and manufacturing hub; **Skill India**, which aims to improve technical training on a large scale to provide the cutting-edge industries fostered by Make in India with the manpower they need; and **Digital India**, whose official objective is to "transform India into a digitally empowered society and knowledge economy" through digital infrastructures, e-services and citizens' education.

Steinbeis signed an MoU with Department of Heavy Industries, Government of India, as its Technology Partner under Make in India Program, during Hannover Messe 2016

Steinbeis India



- Solar Schools Project undertaken by Steinbeis India as a part of Megacity Project of the German Government

In line with the priorities of the growing nation, Steinbeis India focus is on providing Innovation Services to Small and Medium Enterprises (SMEs). Often SMEs do not have the manpower and resources to network with the proven Technology providers in India and abroad by scouting internationally. Technology Scouting and Technology Transfer and Innovation (management) is a complex process which involves understanding of technology, socio-political issues, political and economic issues and lastly HR issues. SMEs are provided a one stop solution by aggregating various services- scouting for technology, being a point of contact with technology providers and where necessary and a platform to negotiate with Indian and Foreign firms / Institutions on business terms. Our Focus areas are –

1. Renewable Energy (Focus Solar PV)
2. Automotive Electronics
3. Manufacturing (Process / Product)
4. Waste to Energy
5. Urban Mobility / Transport Planning and Engineering
6. Automation and Robotics
7. Technology and Innovation Management
8. Setting-up Technology / Innovation Centres with Academic / Research Institutions / Industry Associations
9. Setting-up State Innovation Networks

Steinbeis India has established its own network partners nationally and internationally. This has enabled us to offer expertise to clients even from countries that do not have Steinbeis Centres and connect with technology providers who may meet the peculiar requirements of Indian clients in terms of type of technology, pricing and other measures of technology transfer. We also have our own network of consultants in India, who are specialized in various fields and who are located in various cities in India.

Over the course of our existence since 2009, we have also established a Steinbeis India Network in various other locations in India, and just like in Germany, with their own specialisations. Indeed, we encourage our consultants to set up their own Centre after gaining a few years of experience of consulting with us. The most successful of these offshoots is the Steinbeis Solar Research Centre in Chennai, which has been involved in technology development, Project Consulting and Training in Solar PV Centres. Some of the other Centres of Steinbeis India network are –

1. Steinbeis Centre of Excellence in Smart Urban Mobility Technologies, National Institute of Technology Warangal
2. Steinbeis Centre for Renewable Energy Technologies and Knowledge Transfer, North-East India, Manipur
3. Steinbeis Automotive Innovation Centre, Chitkara University Chandigarh
4. Steinbeis Centre for International Business Management, Jagran LakeCity University, Bhopal
5. Steinbeis Centre for Technology & Innovation, Consortium of Electronics Industries of Karnataka
6. Steinbeis Centre for Technology & Innovation, Bhopal with Govindpura Industrial Association
7. Steinbeis Centre for Technology & Innovation, Faridabad with Integrated Association for Small and Medium Enterprises
8. Steinbeis Centre for Technology & Innovation, with Industry Association of Uttarakhand, Dehradun
9. Steinbeis Centre for Technology and Innovation, Ansal Institute of Technology, Gurugram
10. Steinbeis Academy for Advanced Technology Training and Entrepreneurship, Hyderabad



Steinbeis India also operates the Steinbeis Academy for Advanced Technical Training & Entrepreneurship. The Steinbeis Academy delivers services in Solar and other Technical Trainings like Manufacturing,

Automotive, Product Design, Automation and Data-Sciences etc. to youth as well as working professionals.. Over last 10 years Steinbeis Academy has trained more than 2000 Engineers in Solar PV, Automation, Robotics, Product Design, Manufacturing and Automotive Technologies.

History

Steinbeis India has its origin in the year 2009 with Mr. Vineet Kumar Goyal setting up 2E Knowledge Ventures Private Limited, for training of youth, to turn them into Professional Solar Engineers, and providing Consulting Services for Technology Transfer to Small and Medium Scale Enterprise. On one hand, this was to go a long way in making youth employable and getting them jobs in a rapidly expanding solar and manufacturing sectors, on the other hands it was to support Indian Industry in the areas of Technical Consulting, Transfer and Executive Trainings.

Based on his long years of professional experience, including spending 6 years at the Confederation of Indian Industry (CII), Mr. Vineet Goyal noticed the difficulties that Small and Medium enterprises (SMEs) of India had in procuring appropriate technology for their expansion and for reducing costs. Having seen the Steinbeis model work successfully in Germany in uplifting SMEs there, and leveraging his degree in International business, from the Indian Institute of Foreign Trade (IIFT), Mr. Vineet Goyal decided to take up its affiliation for India. The Steinbeis Centre for Technology Transfer India was thus set up and became the official representative of the Steinbeis network in India.

In keeping with the objectives of the Steinbeis Network, Steinbeis India too connects Industry with Academia, enables Professors and Inventors to promote their technology, brings in Technology from Germany and internationally, to entrepreneurs in India and gives a platform for consultants to deliver their services in a recognized manner.

Steinbeis India team comprises of twenty professionals from Graduates to Doctorates working in various areas as Subject Matter Experts, Business Managers, Recruitment, HR and Placement Experts, Digital Media and Marketing Specialists and handling National and International Accounting.



Training Programs

As a unit of 2E Knowledge Ventures Pvt Ltd., Steinbeis Academy is today one of the most reputed Training Centres for Engineers in India. It is a European Energy Centre (UK) approved Centre of Excellence and is also a National Level Training Organization under Jawaharlal Nehru National Solar Mission (JNNSM) &

Solar Energy Training Network (SETNET), approved by Ministry of New & Renewable Energy of India (MNRE), and National Institute of Solar Energy (NISE). We are also a Training Partner of National Skill Development Corporation of India (NSDC) through Electronics Skill Sector Council of India, and also approved as a training partner from Telangana Academy of Skills and Knowledge (TASK).

Since 2017, it has extended its services from simply training students to getting them placed as well. Indeed it now offers placement along with training in the same monetary package, because of its network and recognition of its brand among solar companies. Its recognition now extends beyond Hyderabad from where it would conduct its training programs. Now, using help from associates, institutions and other organizations such as National Small Industries Corporation (NSIC), it has even started to deliver training programs in other parts of the country.

Our training portfolio comprises of –

- A. Enhancing Engineers Employability (E-Cube) – for fresh engineers to gain expertise in key technical and management areas helping them for employment in some of the best Indian and Multinational Companies
- B. Working Professionals Proficiency Program (WP3) – for working Professionals who want to enhance their skills in the given technical and management areas, or who are looking for a lateral shift in their mid-career to get into new technical areas.
- C. Technician Training Programs (TTP) – for Skilling at the Technicians (shop-floor) level.





Technological assistance to Small Businesses

Small and Medium enterprises were identified by Steinbeis India early on as the vulnerable segment of Indian Industry, but at the same time holding the greatest potential for growth. It was then decided that the company would become a part of their growth story by assisting in their growth.

Its services to Industry could be classified under the following heads:

- a) Technology Research & Development
- b) Technology Scouting and Promotion
- c) Technology Evaluation & Preparing Expert Reports
- d) Technical Consulting

Under these categories, the company has been able to give its services to a variety of industry segments, especially in Electrical, Solar, Industrial Engineering and Automobile Technology. The smallest has ranged from doing a secondary market survey for Rice Bran derived products for a food processing company to doing providing Technological hand holding support to a client to set up a Megawatt (MW) size Waste to Energy plant.

A lot of this has been possible not just due to the Steinbeis Network, but also due to its own Technology partners in a diverse range of fields. Today Steinbeis India has its partners in North America, Hungary, Russia, South Korea, Taiwan, China, Singapore, Australia and Sri Lanka. Today the company welcomes the requirements of any Indian company in any industry segment who may want its assistance in scouting for technology.

Some of our Partners-

1. Geo Capita UK – For Technology Transfer, Financing and taking advantage of the Carbon Credits under Paris Accord for Clean Technology and Green Energy Projects.



2. LC InnoConsult International, Hungary – For Technology Transfer between Hungary and UK



3. European Energy Centre – For Consulting and Training in Renewable Energy and Energy Efficiency



4. QCC Ltd. China / Taiwan for Solar PV, LED Streetlight etc. technologies.



5. yet2.com – Open Innovation Global Network based in USA



6. 360IP Singapore – for Technology Scouting and Transfer from Singapore and China



8. Delta Tech Korea for Technologies from Korea



In addition to all the above, the company also helps inventors, researchers and professors by assessing their inventions and getting them in contact with the correct party in India or internationally to successfully capitalize on their achievement and/or scale up their venture.

Success: Technology Evaluation

Steinbeis India assisted an entrepreneur who was running a 7.5MW biomass based power plant using various types of wood and agricultural wastes. The entrepreneur proposed to grow napier grass and use it directly in the boiler to generate bio-gas and burn the same in the boiler for generation of steam. Based on the techno-economic feasibility study done by Steinbeis India, the entrepreneur made an informed decision.

Success: Research Reports

In 2017, one of our clients wanted a study to be performed to gauge the market demand for chemicals extracted from Rice Bran Oil. He was a food processing company who was considering expanding production into this segment, and wanted a report from us to help take a decision. We successfully gave him the report, based on secondary research which illustrated the uses, opportunities and challenges. It helped client to make an informed decision on business expansion.

Steinbeis in partnership with European Business and Technology Centre (EBTC – a project co-funded by European Commission and Euro Chambres) developed a report on ‘Holistic Mobility Solutions for Indian Cities’ which focused on short-term solutions (Quick-Wins) and long-term solutions for enhancing mobility of select Indian cities (Chandigarh and Gurgaon) as a case-study, while mapping solutions from some of the leading European cities.

Success: Technology Development

Battery Management System

GRIET-Steinbeis Centre at Hyderabad in India closely worked with a battery manufacturing company to develop a battery management system for Telecom and Solar Applications.

This system is quite important for the maintenance and upkeep of batteries in renewable energy (domestic) applications, where the batteries often lose performance and life owing to customer ignorance on the upkeep of batteries.

Success: Technology Transfer

Steinbeis India supported transfer of Solar PV Inverters Technology from Germany to India. The transfer involved establishment of a Joint Venture between a German company owning the IP rights of Solar Hybrid Inverter and an Indian SME (Small Scale Industry) in the field of Solar PV. The German company is a small company which transferred the knowhow to the Indian company for manufacturing and selling the solar hybrid inverters in India.

Success: Technical Consulting

Steinbeis India was involved in Hyderabad Megacity Project implemented by Humboldt University Berlin (HUB) as a part of the Sustainable Megacities Project sponsored by German Federal Ministry of Education and Research in many cities across the world. The HUB researchers spent a considerable amount of time studying the usage pattern and practices of thousands of farmers who are dependent on bore-wells for watering their fields. They have also networked with scores of NGO's, local politicians, local bodies, electric supply utilities, associations, technical consulting organizations and industry to arrive at a model for implementing a technical yet sustainable solution for betterment of motor & pump-set usage by the farmers. The result was a very holistic yet simple solution of implementing capacitors by all farmers in the selected feeders. The difference here is that of educating and informing the farmers of the benefits if all the farmers in a single feeder use the capacitors directly installed on the pump-sets – which is a very low-cost option (that is why high-end options like Automatic Power-Factor Controllers were rejected after a full-study). This not only resulted in better efficiency, but also benefitted the farmers by low burn-out rate of the motors and the resultant savings. The project also envisaged making a small cooperative for the farmers, to undertake the maintenance and upkeep of the capacitors – to make the solution sustainable in the long-run.

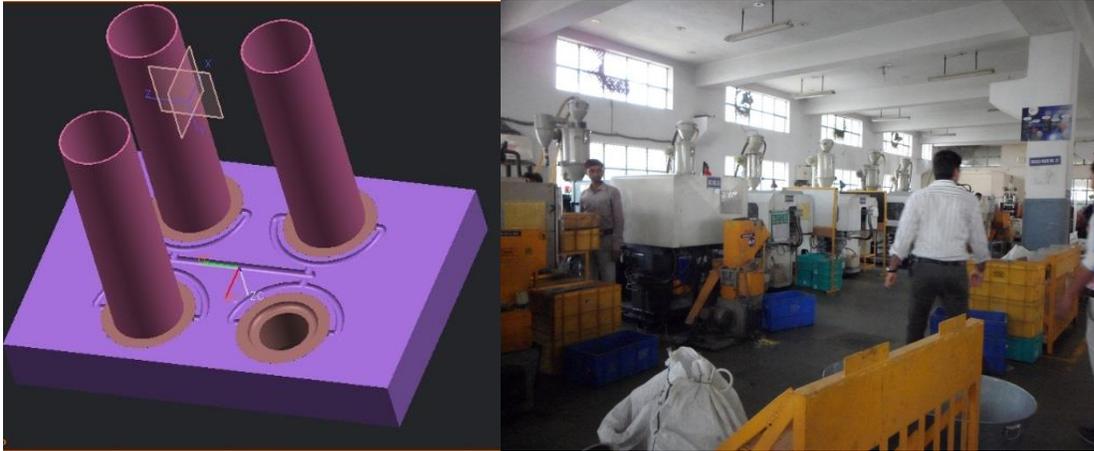


Process Upgradation Project Examples –

Improvement of Mould and Process Design for Industries having Plastics Injection Moulding in Faridabad.

Common Coolant & Chip Handling System for CNC Machines for Auto-Component Manufacturers in Gurgaon

Process Technology Improvements and application - Supply Chain Management Technology – Implementation & System Set-up



Clean Technology

Clean Technology has been the strong point of the company. The company has been able to successfully provide technical assistance in Solar Power, including in high end technology such as the Solar Inverters. Various companies large and small have received good offers from Steinbeis India which the company has been able to offer through its consultants as well as its technology partners in Germany, China and elsewhere.

Over the recent course of years, however, a lot of the consulting focus on Clean Technology has been on Waste-to-Energy. With the market for the traditional sources of Renewable Energy such as Solar and Wind already full with many market players, the company was keen in looking at more emerging streams. It was then noticed that Waste Management was becoming an increasingly difficult issue in India. Taking cognizance of this issue, the central government launched the Swachh Bharat Abhiyan (Clean India Mission) and mandated that every Urban Local Body in India was to set up its own Waste to Energy plant to alleviate the pressure on overflowing landfills.

Steinbeis India then began to leverage its partners in Germany, France and elsewhere to provide Technical Consulting services to companies which had won tenders to set up Waste to Energy plants. It was a long and uneven road from 2016, two companies which had won tenders to set up plants in Andhra Pradesh had shown a positive response to Steinbeis India's outreach efforts.

The deal came to fruition with one of those companies signed up with it in 2018 for setting up its first plant in Bangalore. With its brand name growing in the Indian market as one of the only companies specializing in Waste to Energy know-how, the company began to get increasing numbers of enquiries from individuals and organizations for training in Waste to Energy. Responding to this demand and confident of its own experience, the company formally launched training services in Waste to Energy in February, 2018.

Aside from Waste to Energy and Solar, the company has also dealt with Waste water treatment technology and is gradually launching its services in Sustainable Urban Mobility. The project in Waste Water treatment took place over the course of 2016-17 when it had teamed up with a company in Singapore to provide an Asian Development Bank (ADB) approved effluent treatment technology to a

company in Bangalore. This company wanted to use the technology for a project in Colombia (South America).

Success:

In 2017, we procured Waste water treatment technology from a company in Singapore as part of an Asian Development Bank (ADB) supported scheme to enhance the preservation of waterways and as a result give better treatment to the sewage discharged from industries in India.

Training for Solar Rooftop Photovoltaic Systems

Steinbeis India was involved with a German Company under a Indo-German Project to organise 29 solar training programs across 6 states of India involving trainings of Electricity Distribution Company Officials, Solar Energy Corporation of India – Inspectors, Suryamitra Solar Master Trainers Certified by Sector Skill Council for Green Jobs and State Nodal Agencies for Renewal Energy.

One of the recent innovations of Steinbeis India was in partnership with Telangana Academy for Skills and Knowledge (TASK), Government of Telangana, is “Skills on Wheels” project.



“Skills on Wheels” Empowers Rural Youth

“Skills on Wheels” is a Mobile Solar VAN (Laboratory) - a first of its kind, to provide Technical Training and to Empower the Rural Youth. The Basic Concept and Design was conceptualized by Steinbeis Engineers and the Fabrication works were done in Hyderabad, India.

This unique program “SKILLS ON WHEELS was inaugurated by Shri Kalvakuntla Taraka Rama Rao, Hon’ble Minister for IT, Industries, MA, UD & NRI Affairs, Government of Telangana, on 1st June 2018 at 1500hrs at Green Park Hotel, Begumpet Hyderabad.

Due to high infrastructure costs many training institutes are unable to reach the rural areas, but through programs like “Skills on Wheels” Steinbeis has been able to reach the youth in villages/town at their door steps. Steinbeis encourages the rural youth to move towards the technical world by providing employment and entrepreneurship opportunities.

This initiative intends to provide training to large number of youth in the major districts of Telangana. Students with a minimum qualification of 10th std and above within the age group of 18-35 years are qualified to avail this training program and are eligible for free placements upon successful completion of the training and final assessment.



Skills on Wheels is equipped with four 250 watt solar panels i.e. cumulatively one kilo-watt (1Kw) with one thousand volt-amp(1Kva) grid tie inverter, 1500 volt-amp(1.5Kva) off-grid solar hybrid inverter and 150 ampere hour(12V-150Ah) with 2 back up solar batteries.

Till date approx. 200 technicians have been trained and almost all have been provided opportunities to work in the Solar field.