

The India Opportunity for European Business & Research

Poul V. Jensen European Business & Technology Centre, New Delhi April 26, 2012

www.ebtc.eu



Agenda



- The India Advantage
- CSF for doing business in India

EBTC Value Proposition, Services, Activities

- Case studies
- Major Events

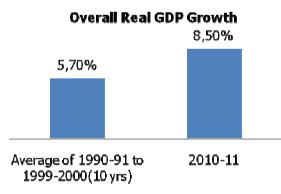




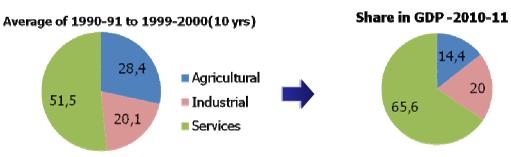


Why India?

- Stable political environment largest democracy, Parliamentary Government
- Population of 1.21 Billion, Census 2011 2.
 - strong domestic market
- 3. Transition from a closed to open economy in 1991
 - unleashed growth potential

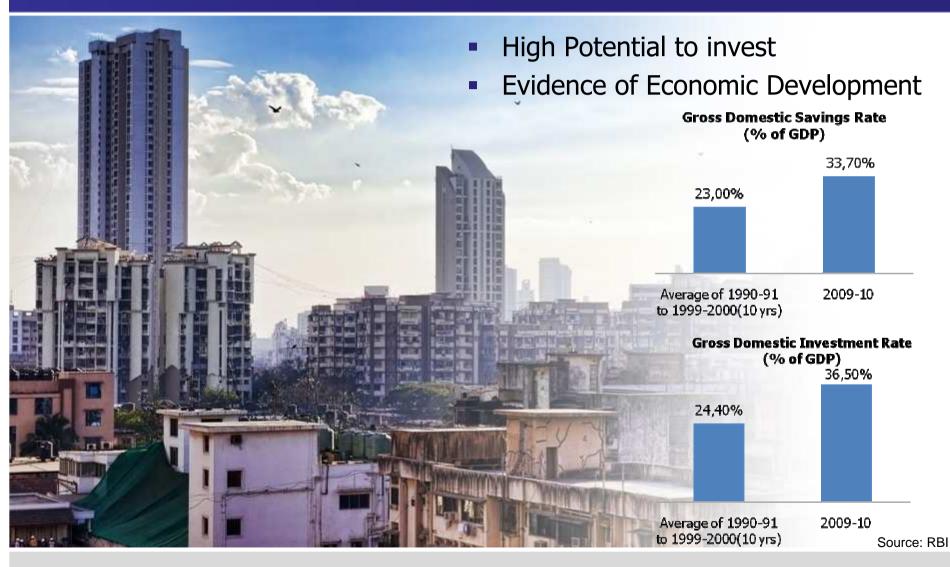


Journey to a Service Economy



Stable economic growth weathered recent global recession well









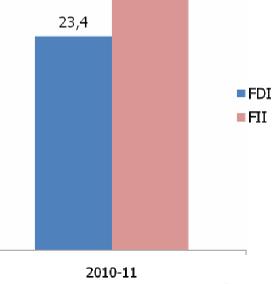




FDI Growth in India

- Evidences Increased FDI and FII to India across the years
- Implication Attractive location factors

1,6



29,4

Average of 1990-91 to 1999-2000(10 yrs)

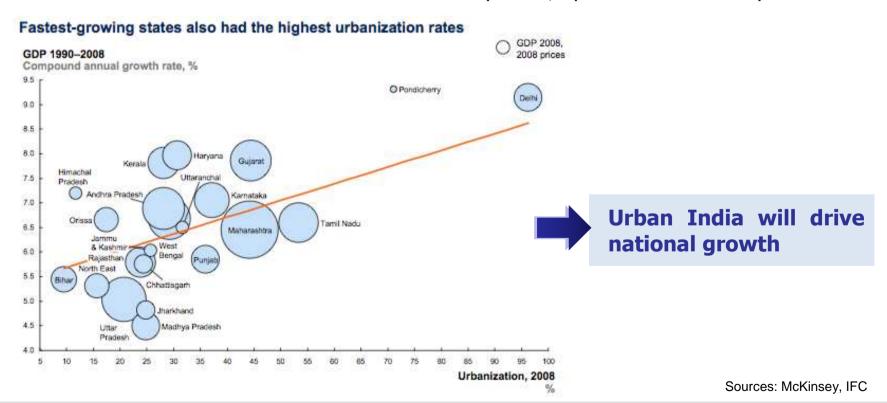
1,3

Source: RBI



Urbanization

- The urban population expected to be close to 600 mln by 2031.
- India will have 68 cities with a population of more than 1 mln in next 20 years.
- 91 mln urban households will be middle-class by 2030, up from 22 mln today.





5 times GDP by 2030

70 percent new employment will be generated in cities

590 million people living in cities, about 10% more than the population of the EU today

91 million urban households will be middle class, up from 22 million today

68 cities will have population of 1 million plus, up from 42 today; Europe has 35 today

700-900 million square meters of commercial and residential space needs to be built – or a new Rome every year

270 million more people to enter working-age population

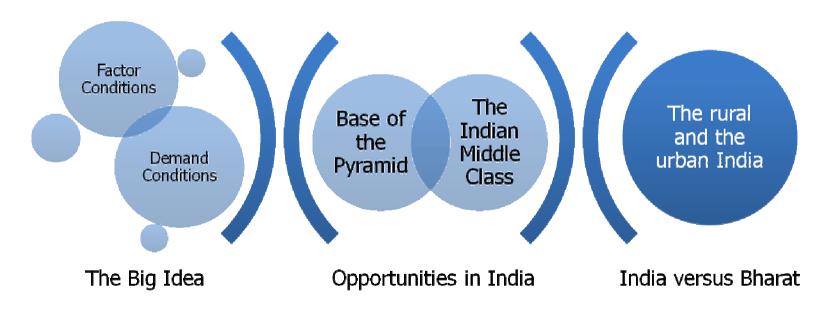
USD 1.2 trillion capital investment is necessary to meet projected demand in India's cities

2.5 billion square meters of roads will have to be paved, 20 times the capacity added in the past decade

Courtesy: IFC/ EBTC



India Macroeconomic Summary



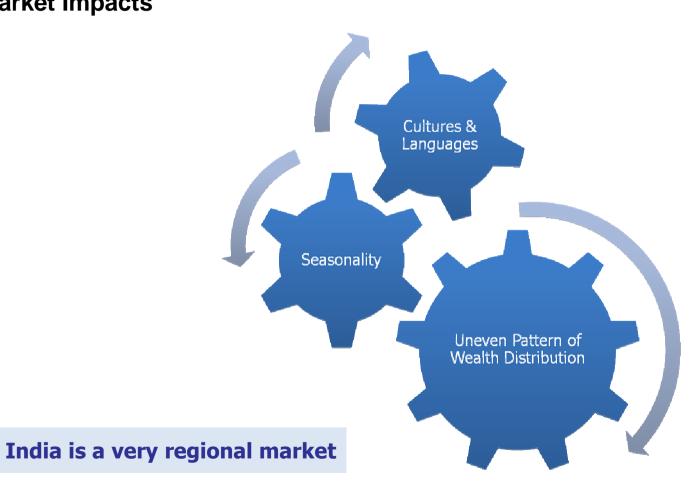


India: a 'Megamarket with Microconsumers'

Courtesy: IFC/ EBTC – quote from "Reverse Innovation"



Market Impacts



Courtesy: IFC/ EBTC



- India is a complex market: class, caste, regions, rural, urban differentiations
- India is good at resource maximization
- Indian businesses have a way of making things differently and with minimal resources.
- It is the Indian way, to utilize in an optimal way, save, invest, maximise and capitalize vis-à-vis the overspending, over-consumption way leading to debt crisis situations!





Courtesy: IFC/ EBTC



Innovation or Indo'vation

Ind'ovation commonly known in Hindi as **Jugaad** is a striking feature of the Indian business landscape.

It indicates the ingenuity to achieve results by out of box thinking, at times even temporary fixes.





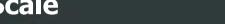




Courtesy: IFC/EBTC







- Indian Geography spans 3.29 mln sq km
- Population divide: 29% Urban, 71% rural
- Railways 1,115,999 km
- Roadways -3,316,452 km
- Households 240 mln

Strong implications for businesses: implementing technologies and managing supply chains







Workforce

- Median age 25.3 years.
- 64% of the population is the age group of 15 - 64 years.
- Around 400 universities, over 20,000 colleges and 7,000 technical institutions with 13 mln students.
- Approximately, 13 mln people enter work force every year.

Demographic Dividend or Demographic Burden?

Sources: www.ibef.org, E&Y





Cross Cultural issues

- Cultural differences between India and Europe
- **Mindsets**
- This has implications across all management functions and organization design.

Absolutely critical for developing co-operations

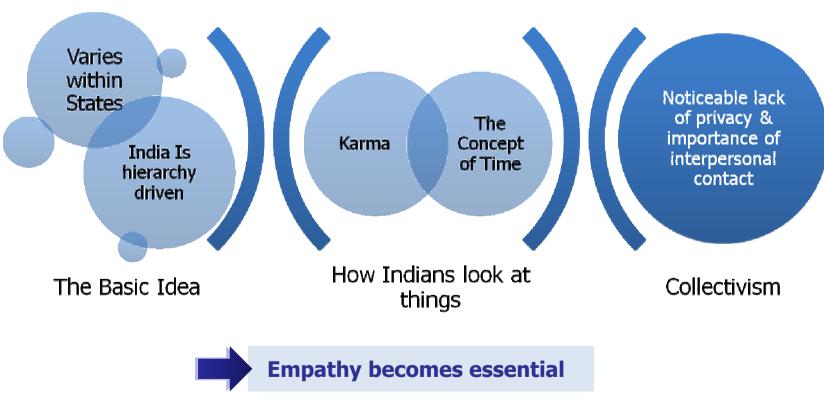




Sources: www.ibef.org, E&Y



Cross Cultural issues - continued



Courtesy: IFC/ EBTC



VIDEO





Understanding the vast Domestic Market



- Well-developed and sophisticated financial market
- Can channel financial resources to good use
- Financing of cleantech projects a big opportunity for debt and equity sources
- Presence of many cleantech oriented equity funds
- Debt financing of cleantech in India still in nascent stage.
- Capacity building being carried out by IFIs such as ADB and World Bank











Journey to a Low Carbon Economy





- National Climate Change Action Plan
- 8 National Missions 4 'cleantech' related
 - National Solar Mission
 - National Mission for Energy Efficiency
 - National Mission for Sustainable Habitat
 - National Water Mission
- EBTC Promoting Clean Technology from EU to India under the Umbrella of Climate Change
 - **Business Platform**
 - Research Platform



EBTC will play an Important role in India's Journey

About EBTC





The European Business and Technology Centre (EBTC) supports EU cleantech companies and researchers on their market entry to India and offers **hands-on support** in the early stages of expansion.

With pan-India presence, offering complete end-to-end solutions to EU clean technology companies who want to enter and be successful in the Indian market.

Tapping into a high growth market, in key sectors all offering enormous scope for closer EU-India collaboration - be it in business, science or technology.



About EBTC – Brief overview



4 locations across India

New Delhi (HQ), Mumbai, Bengaluru, and Kolkata

4 focus Sectors with Specialists and teams

Biotech, Energy, Environment and Transport

4 steps from Visibility to Incubation

- Promoting Europe in India and India in Europe
- Providing Information and Intelligence
- Supporting the market entry process from scratch
- Providing full service incubation support for businesses and R&D



High growth market, dynamic sectors









EBTC Features





- **European Service Provider** EBTC is working with European organisations, bilateral Chambers of Commerce and Embassies to leverage existing efforts and build synergies.
- **Global Europe Strategy** EBTC in India is part of the EU's strategy to enhance Europe's competitiveness in a globalised market.
- **Knowledge of the Indian Market** EBTC publishes periodic studies and reports on the Indian market scenario and has the practical knowhow in all aspects of doing business in India.
- **Technical Expertise** EBTC has experts working in the focus sectors of Biotechnology, Energy, Environment and Transport.
- **Network** EBTC is well connected with government organisations, R&D institutes, private companies, financial institutions and industry associations across India.
- **Geographical Coverage** With headquarters in New Delhi and regional offices in Kolkata, Mumbai and Bengaluru, EBTC's network stretches across India.



Competence and value for you!

About EBTC – Focus Sectors



EBTC's efforts focus on 4 key sectors – Biotech, Energy, Environment and Transport



Biotechnology

- Biotech solutions to climate change
- Red, white and green biotech
- Bioinformatics



Environment

- Water and waste water
- Solid waste
- Clean air
- Green building
- Green chemistry



Energy

- Solar photo voltaic and solar thermal
- Wind
- Biomass□/□Bio energy
- Hydro power
- Clean coal
- Energy efficiency



Transport

- Intelligent Transport System (ITS)
- Low carbon transport solutions
- Fuel cells
- Hybrid technologies



Great opportunities for collaboration

Opportunities in Biotechnology





- The 3rd largest biotechnology market in Asia.
- The Indian biotechnology industry revenues touched EUR 2.3 bln despite the global downturn in 2009 and slow recovery in 2010.

BioAgri

- Greater application of biotech in agriculture
- 15% contribution to Biotech Industry
- Drivers:
 - growing population
 - limited land for cultivation
 - growing demand for alternative energy sources
- Transgenic crops, Biopesticides and Biofuels are related subsectors.

Opportunities in Biotechnology





BioPharma

- Accounts for 61.8% of the total 325 biotech companies
- By 2020, the market is projected to be over EUR 150 bln
 - the world's leading vaccine producers
 - Clinical trials costs are 1/10th of those in US
 - R&D costs are 1/8th of those in the US
 - Biosimilars and a new generation of biotherapeutics

BioInformatics

- Nascent and upcoming sector
- India leveraging an already established supremacy in the IT sector
 - data-mining, gene annotation, the development of software interfaces and more

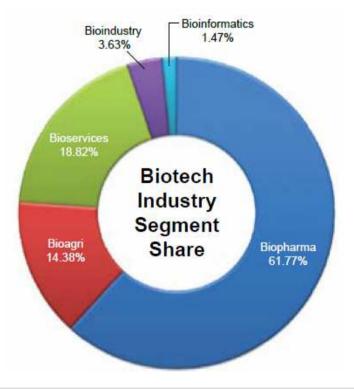
Opportunities in Biotechnology





BioServices

The global cost challenge and the Indian advantage with a well developed R&D capability, are ideal for outsourcing with 22% contribution.



Source: Biospectrum Vol.9, 2011

Opportunities in Energy





Solar

- The National Solar Mission intends to add 20 GW of solar PV & thermal by 2022.
- KPMG estimates a total installed capacity of 68 GW by 2022.
- Investment opportunities: EUR 82.5 bln.*
- Enabling policy environment for PV & CSP.

Wind

- 5th largest installed wind power capacity in the world.
- Total installed capacity of 15,000 MW out of a potential of 50,000 MW.
- Estimated offshore wind power potential = 15,000 MW.

Opportunities in Energy





Energy Efficiency

- Industrial & agricultural sectors can improve by 23%.
- BEE is preparing energy efficiency targets for 580 industrial units operating under 8 sectors, altogether consuming over 44% of India's energy use.

Off grid distributed energy

- Approximately 1/6th of India's inhabited rural villages are off the country's electricity grid.
- Aggregate potential of the market EUR 1.45 bln annually, including EUR 1.4 bln for decentralized renewable energy services and EUR 48 mln for energy products.

Opportunities in Energy





Horizon sectors

Smart grid

- Plans to install 130 million Smart Meters by 2021.
- Prediction: India will emerge as the world's 3rd largest smart grid market after the USA and China.
- The market may touch EUR 1.4 bln by 2015 as per ZPRYME's latest report.

Storage

 The storage market has been growing steadily over the years, averaging 10.9% annually: from EUR 2.4 bln in 2006 to over EUR 3.6 bln in 2010.

Geothermal

 Geothermal fields have been identified with yield, but are yet to attract demo & evaluation projects.

Opportunities in Environment





Water and wastewater

- About 80% of water supplied becomes wastewater. Large cities (>100,000) treat about 29.2% while smaller cities treat only 3.7% of their wastewater!
- Municipal water treatment and supply, and household water purification systems.
- Sewerage treatment, efficient recovery & reuse of water particularly in industry.

Waste

- Over 160,000 Metric Tons (MT) of municipal solid waste is generated daily.
- 3R and for high polluting sectors, such as thermal power stations, chemical and pharmaceutical industries

Opportunities in Environment





Clean Air

- India has one of the unhealthiest air in the world
- Large market stroked by the needs of the high polluting industries such as power, cement and ferrous industries for air pollution control equipment

Green Buildings

- The Green building footprint in India is over 1 bln sq.ft second to the USA.
- High-efficiency heating, ventilation and air conditioning (HVAC) systems.
- Affordable green building materials as per lifecycle (building) costs.

Opportunities in Environment





Bio fuels/Bio-energy

- About 32% of the total primary energy use and more than 70% of the country's population depends upon biomass
- Biofuels 2.0 for transportation by blending
- Biomass for BOP and off-grid power systems

Opportunities in Transport







Public Transport

- Inadequate and inefficient public transport infrastructure.
- Very few cities have organised public transport.
- Increasing levels of motorisation.
- Road fatalities very high and increasing.

Transport Emissions & Air Quality

- Transport one of the largest sources of greenhouse gas (GHG) emissions.
- Motor vehicle technology to reduce emissions include electric, plug-in and hybrid engines.
- Fuel technologies include natural gas/CNG, biofuels, hydrogen-based fuel cells and low sulphur fuels.

Opportunities in Transport





Logistics/Freight/Rail

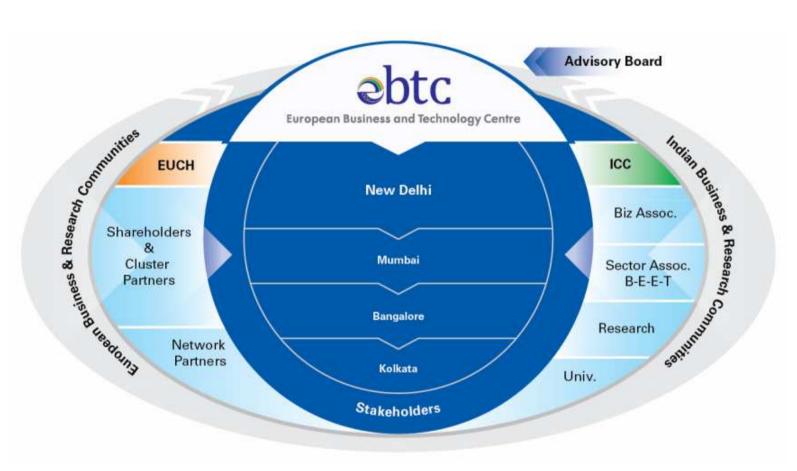
- Large freight network in India that is supported by poor infrastructure.
- No intermodality
- Third largest railways network in the world one of the largest employers (\sim 1.4million).
- E-ticketing covers only 40% of network.

Key Opportunities

- SUTP project for capacity building in urban transport including formation of Urban Transport Cells in cities with populations of 0.5 mln or more
- Increasing opportunities in NHDP, NMDP, JNNURM, CMP initiatives.

EBTC – Structure







Building a solid EU-India Collaboration Framework

EBTC – The Value Proposition



In collaboration with Your Chamber

- Connecting Indian project, business and R&D opportunities to European **Business & Research**
- Opportunity to consider India for business, research, applied research, commercialization, investment, market capitalization and growth
- Sectoral expertise with 4 sector specialists with teams available
- EBTC activities and initiatives that programmatically and strategically are designed to create an environment where EU entities can just enter, plug into, play and accrue results.
- EBTC has developed 100-odd Indian business and research opportunities that are waiting to be tapped by EU entities.
- There are models in place, such as Technology Management Interface, for seamless transition of technologies from the EU to India



Presence near you and in India creates well suited market channel

Guiding European Businesses to India



Step 1

Market Insight

- Guidance on doing business in India
- Information on regulatory framework
- Information on market access barriers.
- Intellectual Property Rights (IPR)- Help desk
- Focused market reports

Step 2

Market Access Roadmap

- Screening of projects in India at national or state level
- Identification of potential business partners
- Design of market entry strategy
- Customised market intelligence



Step 3

Market Strategy Implementation

- Proactive incubation services to acclimatise with minimum risk and costs
- Hands-on-support in bidding for projects
- Assistance in finalising pilot projects
- Liaising with government and financial institutions



EBTC services: taking European companies from the point of considering the Indian market to implementing their projects

EBTC Services – details



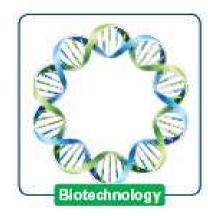
Market Insight

- Guidance on Doing Business in India
- Preliminary sector market reports and snapshots
- Information on market access barriers
- IPR Helpdesk

2 Market exploration trip

Let our Experts plan a customised trip for you to meet relevant people at all levels and let you return with clarity on India!

- Research & preparation phase
- Customized itinerary for most efficient site visits and partner meetings
- Constant guidance and support by an EBTC employee





EBTC Services Service details





Our Sector Specialists will guide you in finding the perfect partners for your venture

- Mapping of potential partners
- Matchmaking sessions and follow up
- Project and technology matching

4 Market Entry Strategy

Your own individual strategy for approaching the Indian market.

- Mapping of market conditions
- Informing on legal, technical and other relevant conditions
- Defining modus operandi
- Support in government, legal and other necessary procedures

Tender Support

Let our specialised teams connect you to relevant decision makers.

- Consortium development
- Support in bidding process and Government office navigation





EBTC Services Service details



6 Funding & Financing

Have our networks work for you and support finding eligible funding possibilities

- ✓ Identify EU funding options & opportunities
- √ Identify 3rd party funding

7 Incubation Service

Engage in a first step to establishing yourself in India in a fast and cost efficient manner – in Delhi, Mumbai, Bengaluru and Kolkata

- ✓ Anchor access to office infrastructure at one EBTC office
- Flex access to office infrastructure at other EBTC location (Flex-Desk)
- Including usage of board rooms, meeting rooms and office facilities
- Including usage of office amenities (copy, fax)
- ✓ Including access to EBTC team, knowledge, networks and experience

8 Event Hosting

- √ Full-service support of delegations at the EBTC premises
- ✓ Workshops, seminars, roundtables, business meetings and receptions, incl. catering

Other services upon request!







EBTC's role in Research





Facilitate linkages (EU to India)

Academia and Industry / Academia to Academia

Bridge Research Needs

 Based on regional resources of India and research strength of EU (Clean Technology Mapping being undertaken)

Coordination

- Research cooperation between different Institutions of EU and India; e.g. R&D activities identified in National Action Plan for Climate Change
- Facilitate for forming smaller and medium sized projects and partner consortia that allow efficient coordination. e.g. publicprivate partnerships (PPPs), e.g. Joint Technology Initiatives (JTI), or projects involving joint programming

EBTC's role in Research





Demonstration projects

- Develop pipeline and coordination of Demonstration projects available with central and state research institutions.
- Supporting global demonstration programmes e.g. large scale, high risk programmes like Carbon Capture and Storage (CCS) and Concentrated Solar Plants (CSP) due to multilateral platform

Intellectual Property Rights (IPR)

 To promote guidelines on the use of IP in international research cooperation.

Laboratory to Market movement

Facilitate removal of barriers in basic and applied joint research between Indian and FU.

EBTC's role in Cluster Collaboration





National Innovation Council of India launched EBTC Cluster Helpdesk – EU-India Cluster focus EU Cluster Collaboration Platform

Short Term

- Increase mutual awareness on cluster policies development methods and management practices
- Facilitating in Europe and in India access to and contact with the respective research, innovation and industrial environments

Long Term

- Provide Market entry Services, Technology Transfer
- Formation of Consortium for R&D, New Product development in the Indian conditions
- Facilitate financial Closure
- EBTC Project: EU-India Collaboration for Transport Cluster Development
- **EU Partner:** Ceipiemonte, Italy **Indian partner:** Govt of Karnataka

EBTC Current Activities





- EBTC identifying Indian industry/ institutions/ academics/ researchers seeking collaboration with EU for research, innovation and business
 - Indian Entities submitting "Project Opportunity Descriptions"
- EBTC EU-India Cleantech Mapping Project
- **EU Technology Management Interface:** The EBTC Approach to promote seamless transfer of technology
- Research and Innovation Road map development for Indian institutes with FU collaboration
- Enterprise Europe Network (EEN)
 - EBTC will soon be the Indian member of EEN

EBTC Current Activities





- **EU FP7:** Facilitating partnerships/consortiums and playing the role of "knowledge partner" on FP7 projects
- **EBTC RIB** (Research-Innovation-Business) Project
 - Accelerating research, innovation and transition to commercialization
 - Promoting entrepreneurship and innovation
- **EBTC Regional Research Group:** EU Member State S&T and EBTC partners
- EBTC collaborating with Multilateral Agencies involved in promoting Research and Innovation in India
- EU Research Awareness Programme

EBTC – Role at political level



Policy making vs. Business & Research focus

Policy Making

- 1. Climate Change Dialogue
- 2. Strategic Research Agenda
- 3. Free Trade Agreement
- 4. Clean Coal Working Group
- 5. Cluster Policy
- 6. Resource Efficiency



Business & Research focus

- 1. EBTC Clean Technologies
- 2. Innovation Platform w CII
- 3. Market access information
- 4. EBTC part of EEC
- 5. Cluster Helpdesk
- 6. Mapping with TERI + GIZ



Focusing on implementation of policy intent

EBTC Case Studies



EBTC has helped to facilitate technology transfer to India from countries including:

- 1.Poland Rafako
- 2.Sweden Sundsvall Energie
- 3.Sweden Winova
- 4.France Ciel n Terre
- **5.**Spain Idener
- **6.**Spain PICVISA

EBTC also works to identify project opportunities and build capacity in India:

7. Capacity Building in Karnataka & Tamil Nadu.

EBTC Case Study 1: Poland – RAFAKO







- **Technology / Project type:** 'Circulating Fluidised Bed Boilers.'
- Organisations: RAFAKO (Poland) & Hari Machines Ltd. (Kolkata, India)
- **EBTC's role:** technical and business development expertise which resulted in an agreement signed between the two organisations in August 2011 during EBTC's flagship energy mission.
- **Status:** As at March 2012, Hari machines is quoting CFBC boilers, based on the RAFAKO technology, to different clients. They are projecting a market of 62 crores. The capacity of the boiler that a Hari machine is dealing with is up to 150 MW.

EBTC Case Study 2: Sweden – The municipality of Sundsvall







- **Technology / Project type:** Waste-to-Energy
- **Organisations:** The municipality of Sundsvall (Sweden) & Satarem (India)
- **EBTC's role:** partner research and identification, matchmaking, and facilitating the relationship. EBTC organized and co-ordinated Satarem India's visit to Sundsvall Energi in Sweden (Feb 2012.)
- **Status:** Discussions will continue to explore the parameters for a win-win collaboration.

Photos courtesy: Lars Ling

EBTC Case Study 3: Sweden – Winova





- Technology / Project type:
 Non-alcoholic environmentally friendly hand sanitizers
- Organisations: Winova Technology AB (Sweden) & Shivram Associates (Bangalore, India)
- **EBTC's role:** Partnership facilitation
- Status: Winova Technology AB visited Bangalore, India on the 22nd of March to discuss the next steps, from which an agreement is in the workings

EBTC Case Study 4: France - Ciel et Terre, Tech Sub







1. Technology / Project type:

Floating solar PV systems

Organisations: Ciel et Terre (France) & Enzen Global (Bengaluru)

Technology / Project type:

Rejuvenation and restoration of lakes and water bodies

Organisations: Tech Sub (France) & Enzen Water Solutions (Bengaluru, India)

- **EBTC's role:** partner research and identification, matchmaking, and facilitating the relationship.
- **Status:** the teams are developing bid documents for projects.

EBTC Case Study 5: Spain – Idener





Stages of development of JV:

- 1. Memorandum of Understanding
- 2.Co-development
- 3. Pilot project
- 4. Commercialize technology

1. Technology / Project type:

Fuel cell technologies

Organisations: Idener & Anabond Sainergy Fuel Cell

India Private Ltd.

2. Technology / Project type:

Solar cooling

Organisations: Idener & Bharat Forge

3. Technology / Project type:

Anaerobic digesters

Organisations: Idener & Chempure Technologies

Pvt. Ltd.

- EBTC's role: Partnership facilitation and technology management
- Status: First meeting March 2012 and Agreements being discussed

EBTC Case Study 6: Spain – PICVISA





- **Technology / Project type:** MSW sorting and treatment.
- **Organisations:** PICVISA machine vision systems & Chempuretech, Chennai.
- **EBTC's role:** Partnership facilitation
- **Status:** As of April 2012, the association is being finalized, and they have jointly bid for a consulting project in Tamil Nadu, results expected May/ June 2012. This will give an opportunity for PICVISA to set foot in India.

"I am glad that EBTC has brought together my firm Chempure Technologies Pvt Ltd with the Spanish firm PICVISA which specializes in MSW sorting and treatment".

- P. Devanand, Director Technical & Business Development, Chempuretech

EBTC Case Study 7 Capacity Building in Karnataka & Tamil Nadu





- 1. Vellore Institute of Technology (VIT)
- 2. Tamil Nadu Energy Development Agency (TEDA)
- 3. Karnataka State Pollution Control Board (KSPCB)
- 4. Karnataka Renewable Energy Development Ltd. (KREDL)





EBTC – Indian Project Opportunities



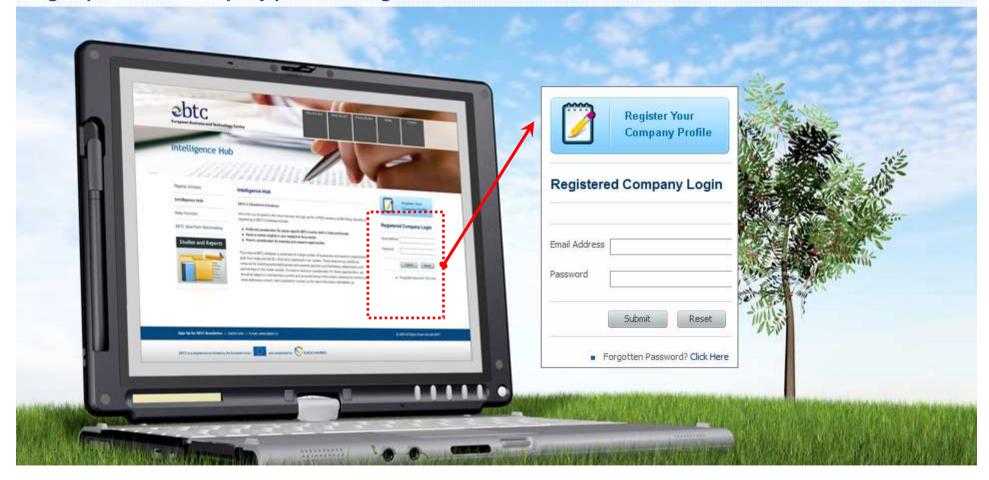


Business	Nos.
Environment	
Air	4
Water & Wastewater	12
Green Buildings/Energy Efficiency	8
Waste Management	11
Total	35
Energy	
Biomass/Fuel cells/Energy Storage	15
Solar/ Wind	21
Distributed Generation/Smart grids/ Wave energy	6
Total	42
Biotechnology	
Agriculture	9
Bioinforamtics	8
Biopharma	14
Environment	6
Total	37
Research	
Environment	4
Energy	3
Biotechnology	16
Total	23

Explore Indian Opportunities in Cleantech



Sign up for a free company profile listing in EBTC's Cleantech database on www.ebtc.eu



EBTC Events 2012





- High-level Workshop on Public Procurement for best practices from Europe, New Delhi, Date TBA.
- IPR Sessions at EBTC Events, Pan India, May-Dec 2012
- Research to Business Session at the World Renewable Energy and Technology Congress, New Delhi, 25-27 Apr, 2012
- Urban Mobility Session at Asia Competitiveness Forum, New Delhi, 27 April, 2012
- Biotech Business and Research Delegation Virtual matchmaking, 28 May-1 June 2012, Bengaluru
- Water, Waste-treatment and Green Building Mission, Kolkata, 6-7 June 2012
- Conference on Renewable Energy in India Technology, Regulation and Finance, Mumbai, September 2012
- Workshop on funding facilitation of projects with relevant and demanded EU technologies in India, Mumbai, September 2012
- Seminar on utilisation of mini-grids, off grid energy solutions, New Delhi, September 2012
- EBTC Smart Grid Event, Location TBD, October.
- Biotechnology Business & Research Delegation, Bengaluru, 5-9 November 2012
- Energy Business & Research Delegation to Renewable Energy World Conference and Expo, New Delhi, 7–9 November 2012
- Environment Business & Research Delegation, Mumbai, 5-9 November 2012
- Transport Business & Research Delegation to the Urban Mobility Conference cum Exhibition, New Delhi, 5-8 December 2012
- Workshop and Roundtables joining energy and climate change issues with sustainable transport strategies, New Delhi, 5-8 December 2012
- Seminar on Sustainable Solutions for Jatropha-based Biofuels in India, New Delhi, 11-12 December 2012
- Final workshop on IPR issues in 2012, Location TBD, January 2013

EBTC Snapshots







Thank You



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