



GOBIERNO
DE ESPAÑA

MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

Indo-Spanish Scientific and Technological Co-operation

Adrián Gutiérrez

Chief Representative CDTI – INDIA

Head of Science and Technology Department, EMBASSY OF SPAIN

adrian.gutierrez@cdti.es



OUTLINE

- **SCIENTIFIC CO-OPERATION (Slides 3 - 10)**
 - *India & Spain Co-operation Programme in S&T (2009-2011)*
 - *Instruments*
 - *Results to date*

- 2. **TECHNOLOGICAL CO-OPERATION (Slides 1 – 27)**
 - *CDTI – Spain’s National Innovation Agency.*
 - *E2i – National Strategy for Innovation*
 - *Drivers for international collaboration in joint R&D&I*
 - *Bilateral Technology Co-operation Programme with India. ISIP “India & Spain Innovating Programme”.*



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INDIA – SPAIN BILATERAL CO-OPERATION PROGRAMME IN S&T (2009-2011)

- *MoU signed between MST – INDIA and former MEC (Ministry of Science & Education, Spain) and MITyC (Ministry of Industry, Tourism and Trade) – SPAIN.*
 - Programme of Co-operation (2009)  agreement to establish a new scheme for joint funding of Indo-Spanish co-operation activities.

AIM

Strengthen bilateral co-operation between Scientists & Researchers of the 2 countries

IMPLEMENTING INSTITUTIONS

INDIA – Department of Science & Technology (MST)
SPAIN – Subdirect. of Internat. Programmes (MICINN)

INSTRUMENTS

Joint R&D projects, Workshops, Seminars,
Exchange Visits, Technical Missions



INDIA – SPAIN BILATERAL CO-OPERATION PROGRAMME IN S&T (2009-2011)

AREAS OF CO-OPERATION

RENEWABLE ENERGY

INFORMATION TECHNOLOGY (including Computer Science)

HEALTH AND MEDICAL RESEARCH

LIFE SCIENCES AND BIOTECHNOLOGY (including Pharmaceuticals)

AGRICULTURE TECHNOLOGY AND FOOD PROCESSING

NANOTECHNOLOGY



INSTRUMENTS

- *JOINT PROJECTS – R&D proposals between one Indian and one Spanish research group from Universities, Public Research Centres, Other non-profit.*
 - Build on already **ONGOING Research Activities** in each research group.
 - **Co-operation** should bring **Added Value** to R&D activities
 - **COMMON & SIMULTANEOUS APPLICATION** in both countries.
 - Evaluation in each country (**common evaluation criteria and forms**).
 - Selection of projects rated as excellent in both countries.
 - Joint India – Spain Committee prioritizes projects, according to budget limitations.
 - Duration – 3 years.



INSTRUMENTS

- ***JOINT PROJECTS – R&D proposals between one Indian and one Spanish research group from Universities, Public Research Centres, Other non-profit.***
 - **FUNDING:**
 - Enhance partner's capacity to collaborate by supporting additional expenses related to co-operation.
 - **100.000 euros approx.** (equivalent amount in INR) **per partner.**
 - Eligible costs: personnel expenses, consumables, small equipment, **travel and visiting costs for exchange visits).**

- ***JOINT WORKSHOPS.***
 - Theme jointly selected by S&T Implementing Agencies among list of agreed Areas for Co-operation.
 - Each country participates with **8 Scientists and Experts**



INSTRUMENTS

- ***JOINT WORKSHOPS.***
 - **Content** – debriefings on state of the art in each country + series of presentations on cutting-edge S&T.
 - **Organization** - One country assumes the role of local organizer and the other country acts as co-organizer.
 - **Venue** – held in alternating countries each year.

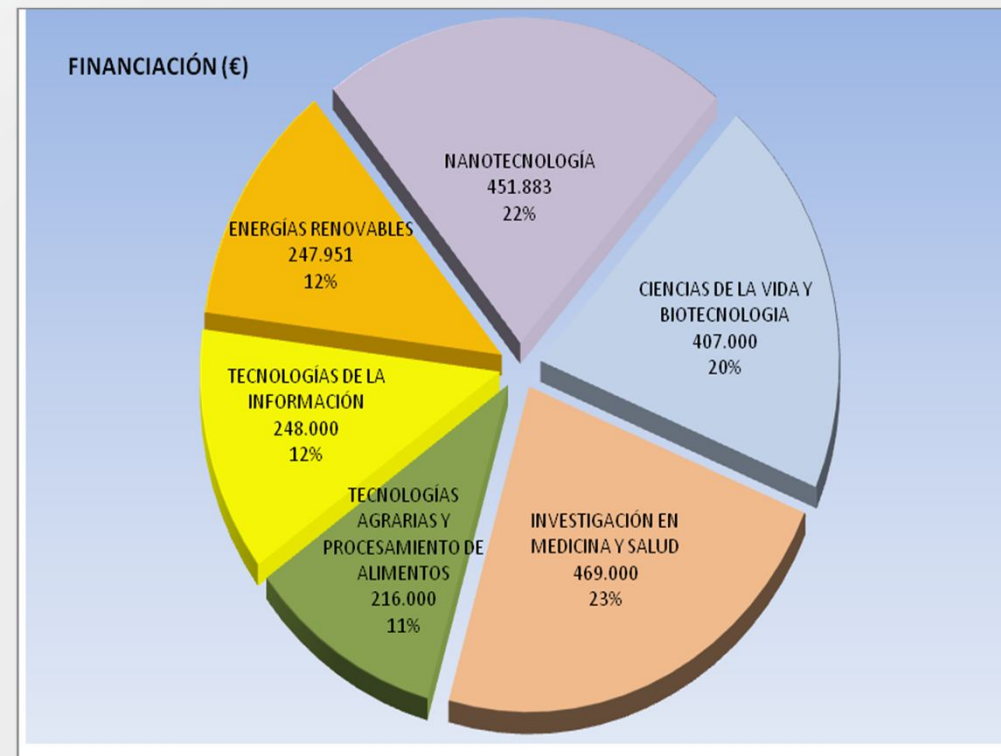
- **Exchange of Visits, Seminars & Technical Missions**
 - Either part of activities of joint R&D projects or promoted by the implementing institutions.



RESULTS TO DATE

PROJECTS

- **2009 Call for Project Proposals:**
 - 25 projects funded (140 proposals).
 - 2M € per country.
 - 6 Thematic Areas.
- **2011 Call for Project Proposals (15/04/11 – 31/05/11):**
 - 18 projects funded (90 proposals).
 - 1,69 M € per country.
 - 4 Thematic Areas
 - Renewable Energy
 - IT including Computer Science.
 - Health & Medical Research
 - Nanotechnology





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RESULTS TO DATE

WORKSHOPS



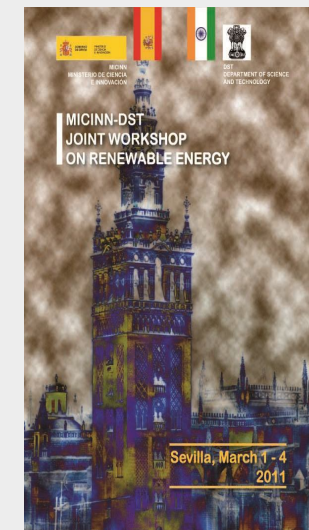
- June 2010. IISc Bangalore (India): *Workshop on Information Technologies and Computer Science.*
- March 2011. University of Seville (Spain): *Workshop on Renewable Energy.*
- November 2011. Indian Council of Medical Research, Delhi (India): *Workshop on Health and Medical Research.*



RESULTS TO DATE

EXCHANGE OF VISITS

- Most of the 25 ongoing bilateral projects have already generated short visits to both India & Spain.





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INDO – SPANISH TECHNOLOGICAL CO-OPERATION

Adrián Gutiérrez
Chief Representative of CDTI – INDIA
Head of Science and Technology Department
Embassy of Spain

E-mail: adrian.gutierrez@cdti.es

2. TECHNOLOGICAL CO-OPERATION

- *CDTI – Spain’s National Innovation Agency.*
- *E2i – National Strategy for Innovation.*
- *Spain’s Technological Strengths.*
- *Drivers for international collaboration in joint R&D&I*
- *Bilateral Technology Co-operation Programme with India, ISIP “India & Spain Innovating Programme”.*
- *CDTI’s New Initiatives with INDIA:*
 - *Indo-Spanish Programme for Technological Co-operation in the field of Biotechnology.*
 - *Indo-Spanish Programme for Technological Co-operation in the field of Renewable Energy*

1. CDTI – SPAIN’S NATIONAL INNOVATION AGENCY

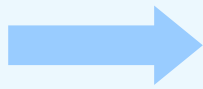


- Public Entity – Secretariat of State for R&D&I, Spanish Ministry of Economy and Competitiveness (1977).
- Spain’s National Innovation Agency

Mission: “raise the technological level of Spanish firms by funding business R&D&I projects and running international Programmes with a technological & industrial content”.

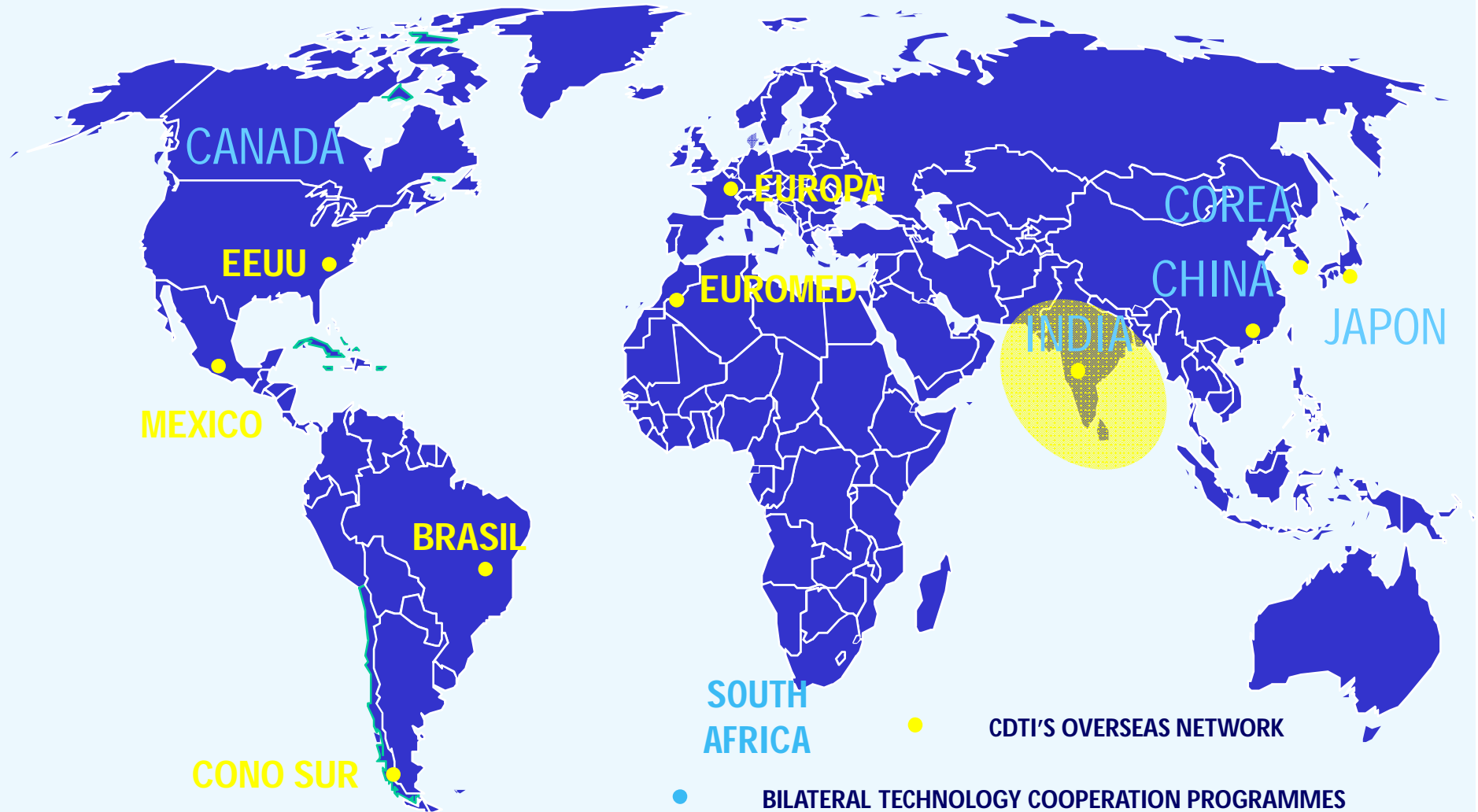
- Promote Technology-driven and sustainable growth VS Bubble-driven growth.
- Innovation + Entrepreneurship essential to fuel our recovery and lead towards sustainable economic growth and job creation.

2004 – 2010



2.128 sanctioned projects
EUR 1.244 million / direct funding

1. CDTI – SPAIN'S NATIONAL INNOVATION AGENCY



MAIN LINES OF ACTION

Evaluate + finance RTD & innovation projects developed by Spanish Cos

Support services for development of R&D&I projects / commercial exploitation of developed technologies in foreign markets

Promote technology transfer and public-private cooperation in R&D&I

Support the generation + development of new technology-based firms

Represent, manage and promote the participation of Spanish Cos in international technology cooperation programmes

Manage and pursue the achievement of industrial contracts with high technological content by Spanish Cos

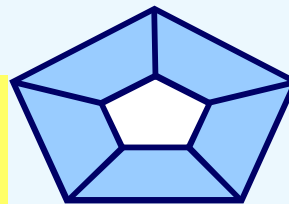
2. E2i – NATIONAL STRATEGY FOR INNOVATION

- **E2i - Framework for Government policy action in the field of innovation**
 - Multiple industry initiative involving all stakeholders.
 - Transform the Spanish economic model into a sustainable one based on innovation and knowledge.

Integral Approach

- Axis 1 - Financing
- Axis 2 - Innovative Markets
- Axis 3 - Internationalization
- Axis 4 - Territorial cooperation
- Axis 5 - People

E2i



Objectives / Results by 2015

- 40.000 new innovative Cos.
- 6.000 M/year additional R&D private investment
- 500.000 new employments in high and medium tech sectors.

CDTI - main public entity in the promotion and fostering of private R&D

3. POTENTIAL AREAS FOR CO-OPERATION: *SPAIN'S TECHNOLOGICAL STRENGTHS*

Green economy

(renewable energies, energy efficiency
water supply, environment sector)

Construction and civil infrastructures

International leader in wind and solar power

- Photovoltaic solar power capacity: 1st ranked world
- Wind power: 3rd ranked world

Top level infrastructures and scientific capacity

- The largest European R&D center for concentrating solar technologies: Plataforma Solar de Almería

Main technologies

- Very large offshore wind turbines
- 2nd manufacturer of solar cells in Europe
- Water purification/ Sustainable water management within its integral cycle

World leader in transports connectivity (Ferrovial – Cintra)

- Five companies in the world top ten

International leader in construction

- Leader at European level.
- 37% incoming from international markets

Main technologies

- Top world facilities in high-speed train (Anillo ferroviario Antequera)
- New materials...

3. POTENTIAL AREAS FOR CO-OPERATION: SPAIN'S TECHNOLOGICAL STRENGTHS

Health and Nano biotechnology

Highly competitive industry at the global markets

- Biotech turnover: 31,100 million of euros
- Global leader in plasma derived products and therapies (Grifols)

4th Nano biotechnology Scientific production in the world

- Barcelona the 2nd Nano biotech city (1st Boston)

Big network of science parks (bioclusters)

Main technologies

- Oncology, Cardiovascular, Neurological and Reproductive technologies
- Rare Diseases
- Biotech diagnosis, biomarkers, nanomedicine
- Regenerative medicine, Cell and Gene therapy
- Biofuels

Market value in 2009: 105,000 million Euros

- Annual increase above 4% over the last 7 years

International leader in telecom (Telefónica)

- 1st European telecom
- Among the 3 world telecom companies (ATT and China Telecom)

International leader in high technology products

- 3D radars
- Flight simulators
- Air traffic and telecom satellites control systems
- Pioneering in industrial production of graphene
- Digital Video Broadcasting, Terrestrial and by Satellite

ICT



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Centro para el Desarrollo
Tecnológico Industrial

3. POTENTIAL AREAS FOR CO-OPERATION: *SPAIN'S TECHNOLOGICAL STRENGTHS*

Aerospace and Security

Highly competitive sector

- 5th in Europe by turnover and people employed
- 7th global operator of satellite telecommunications
- Industry capable of conceive, design and produce an entire aircraft (only ten countries)
- Member of the European Space Agency

Main technologies (Spanish firms world leaders in)

- Manufacture of composites (especially carbon fibre)
- UAVs (unmanned aircraft vehicles)
- Gas turbine engines
- Air traffic management
- Integrated Systems for border surveillance.

Highly competitive and international sector

- 2nd vehicle producer in Europe (9th in the world)
- Exports 86% of production (2009 data)

One of the most important automotive components industry in the world

Main technologies

- Automotive safety technologies
- Electrical and electronic components
- Pioneering in the introduction of electromobility and Electric Vehicles

Automotive

4. DRIVERS FOR INTERNATIONAL COLLABORATION IN JOINT R&D&I

OPEN INNOVATION / GLOBALIZATION

CONTEXT - NEW GEOGRAPHY OF SCIENCE & INNOVATION

- Impact of globalization on Inter-Entrepreneurial performance.
- Access to new sources of excellent knowledge.
- Potential to leverage synergies and complementarities in the international market



OBJECTIVES - WIDEN SCOPE OF INTERNATIONAL R&D&I

- Identify potential countries of interest for Spanish Cos.
- Put into place institutional frameworks for bilateral technology co-operation with similar Agencies.



5. BILATERAL TECHNOLOGICAL CO-OPERATION WITH INDIA

ISIP – INDIA & SPAIN INNOVATING PROGRAMME



- ISIP – Bilateral Technology Co-operation Programme between India & Spain.
- MoU signed between TDB (MST) and CDTI (MICINN), July 2006.
- Promote, assist and provide preferential financing to joint technology co-operation projects (industrial research / technology development / innovation) between:
 - Spanish Cos. & Indian entities (companies, research institutes, technology centers).
- TDB / CDTI – Implementing Agencies
- Thrust Sectors – but opened to any area of mutual interest.



5. BILATERAL TECHNOLOGICAL CO-OPERATION WITH INDIA

MAIN FEATURES OF THE ISIP PROGRAMME

- **Bottom – up approach:** Draft and submittance of projects by interested entities.
- **Development or adaptation of new products / processes or services.**
- **International Market – Oriented Projects.**
- Participation of **one qualified partner from each country.**
- **Decentralized system of financing** without need for exchanging funds.
- **Open Call** throughout the year – no deadlines.
- Fast Feedback on proposals.
- 2 single entities (TDB in India / CDTI in Spain) responsible for managing the Programme in their respective countries, assessing and certifying projects. Funding may also be awarded by other funding agencies.
- National representatives of CDTI and TDB will:
 - Promote joint technology co-operation
 - Matchmaking + partner identification
 - Assess + Approve + Certify ISIP Projects

5. BILATERAL TECHNOLOGICAL CO-OPERATION WITH INDIA

ISIP - DECENTRALIZED SYSTEM OF FINANCING

FINANCING R&D&I RELATED COSTS - ELIGIBLES COSTS: Amortization of Assets / External Collaborations / Materials / Personnel and Indirect Costs

CDTI / SPANISH COMPANIES

- Soft loan **60 – 75%** of the budget at a **0%** interest rate.
- Out of the soft loan up to **23 – 33%** of the R&D&I related costs may be **non reimbursable**.
- **Debt repayment in 10 years** (2-3 years of initial moratorium)

TDB / INDIAN COMPANIES

- Soft loan of up to **50 %** of the budget at a **5%** annual interest rate.
- **Debt repayment in 5 years** (1-2 years of initial moratorium).

5. BILATERAL TECHNOLOGICAL CO-OPERATION WITH INDIA

RESULTS TO DATE

- TDB and CDTI have jointly certified **8** projects with a total budget of **11.3 M €**.
- **List of ISIP projects certified to date (I):**
 - **FXINTERACTIVE** – Development of a specific IT Platform and related applications intended for the interaction among different stakeholders in the international Stock Exchange Markets.
 - **INTEGRATION SECURITY SYSTEM (ISS)** – Development of an innovative and suitable IT Platform enabling interoperability between access controls and security systems.
 - **COWBULL** – Increase in the competitiveness and efficiency of the manufacturing process of centerless grinders (machine tools) in the Indian as well as international markets via the development and transfer of technology between Indian & Spain.
 - **SCUTUM** – Non toxic non intrusive Insecticide Textiles preventing from the transmission of Tropical Diseases caused by the bite of infected mosquitoes.

5. BILATERAL TECHNOLOGICAL CO-OPERATION WITH INDIA

RESULTS TO DATE

- **List of ISIP projects certified to date (II):**
 - **BTENSION** – Development of advanced and ecofriendly new low voltage technologies to be applied to distribution boards and industrial switches
 - **BENGALA** – Development of integrated industrial processes for the extraction of aromatic ingredients of Indian origin with supercritical carbon dioxide.
 - **SKIDS** – Modular development of equipment and solutions for processes of the pharmaceutical, cosmetics and food-processing industries.
 - **SAECLIMBER INDIA** – Development of personnel and material lifting machinery based on rack pinion system for the construction of high rise buildings.
- **Projects in pipeline and ideas for future ISIP projects in following sectors: nanotechnology (additives & polymers), chemistry (nanopigments), IT (animation industry), renewable energy (storage systems, solar, hybridization, hydrogen, biofuels) and biotechnology (agro, biopharma).**

6. CDTI'S NEW INITIATIVES WITH INDIA

INDO-SPANISH JOINT PROGRAMME FOR TECHNOLOGY CO-OPERATION IN BIOTECHNOLOGY

- PoC signed between Department of Biotechnology and CDTI, November 2011.
- Promote, assist and provide preferential financing to BIOTECHNOLOGY joint technology co-operation projects (industrial research / technology development / innovation) between:
 - Spanish Cos. &
 - Indian entities (companies, research institutes, technology centers).
- Decentralized system of financing.
- First joint Call for R&D Proposals (01/06/12 – 15/09/12)

INDO-SPANISH JOINT PROGRAMME FOR TECHNOLOGY CO-OPERATION IN RENEWABLE ENERGY

- PoC signed between MNRE and CDTI, November 2011.
- Promote, assist and provide preferential financing to RENEWABLE ENERGY joint technology co-operation projects (industrial research / technology development / innovation) between:
 - Spanish Cos. &
 - Indian entities (companies, research institutes, technology centers).
- Decentralized system of financing.
- First joint Call for R&D Proposals (01/06/12 – 15/09/12)

For any further information



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Scientific Co-operation

- SECRETARIAT FOR R&D&I, SPANISH MINISTRY OF ECONOMY AND COMPETITIVENESS
www.idi.mineco.gob.es
- DEPARTMENT OF SCIENCE AND TECHNOLOGY, INDIAN MINISTRY OF SCIENCE AND TECHNOLOGY
www.dst.gov.in

Technological Co-operation

- CENTRE FOR THE DEVELOPMENT OF INDUSTRIAL TECHNOLOGY (CDTI), SPANISH MINISTRY OF ECONOMY AND COMPETITIVENESS
www.cdti.es
- TECHNOLOGY DEVELOPMENT BOARD, INDIAN MINISTRY OF SCIENCE AND TECHNOLOGY
www.tdb.gov.in
- DEPARTMENT OF BIOTECHNOLOGY (DBT), INDIAN MINISTRY OF SCIENCE AND TECHNOLOGY
www.dbtindia.nic.in
- INDIAN MINISTRY OF NEW AND RENEWABLE ENERGY (MNRE)
www.mnre.gov.in

E-mail: adrian.gutierrez@cdti.es