



PROJECT: TECH4CDM

PUBLISHABLE FINAL ACTIVITY REPORT

Project execution

The TECH4CDM project, developed over 2008 and 2009, and financed by the European Union under the Sixth Framework Programme of R&D, has as its primary goal, the promotion of renewable and efficient energy technologies, paying special attention to overcoming technological barriers, as well as the analysis of the Clean Development Mechanisms (CDM) of the Kyoto Protocol that may assist in projects based on wind energy, cogeneration, solar thermal and rural electrification through renewable energies.

Both European and Latin American institutions have participated in the project, which has been coordinated by the Spanish Institute for Energy Diversification and Saving (IDAE) www.idae.es. The technological partners participating in the project include: the European Photovoltaic Industry Association (EPIA) www.epia.org, the Spanish Wind Energy Association (AEE) www.aeeolica.org and the Solar Thermal Industry Association (ASIT) www.asit-solar.com. Other key participants have been COGEN Spain www.cogenspain.org and the Spanish Office for Climate Change (OECC) www.mma.es/portal/secciones/cambio_climatico.

The 5 countries where the project activities have been carried out were Argentina, Chile, Ecuador, Mexico and Peru. In all of these countries local partners have contributed assuring the maximum profit of this joint effort. Participating entities include: the Secretariat of Energy <http://energia3.mecon.gov.ar/home> and the Industrial Union of Argentina www.uia.org.ar, the National Energy Commission (CNE) of Chile www.cne.cl, the Ministry of Electricity and Renewable Energy (MEER) of Ecuador www.mer.gov.ec, the National Commission for the Efficient Use of Energy (CONUEE) of Mexico www.conuee.gob.mx and the Centre for Energy Conservation and Environment (CENERGIA) of Peru www.cenergia.org.pe/engindex.htm.

The Project has also promoted the transfer of EU clean energy technologies between Europe and Latin America with the following objectives:

- To contribute with the sustainable development through the promotion of clean energy technologies;

- To promote the transfer of EU new clean energy technologies between Europe and Latin America, addressing the most important technological barriers and main difficulties for an extensive use of these technologies;
- To improve energy efficiency and increase the use of renewable energy fostering the implementation of RES and EE projects;
- To bring opportunities to the European industry to develop their technologies in the large growing market of Latin America;
- To support Latin American countries to achieve sustainable development;
- To support EU countries to comply with their Kyoto commitments;

The following activities have been developed for each technology:

- Addressing the technological barriers and main difficulties that impede the extensive use of these technologies;
- Capacity building on these technologies and on the accreditation of CDM projects;
- Promoting the implementation of RES and RUE projects.

The Work Programme was structured in four technological work packages, one dissemination work package and one management work package. The countries and their related target technologies have been:

Country	Technology
Mexico	Wind Energy, Polygeneration, Solar Heating and Cooling and
Ecuador	Wind Energy and Rural Electrification
Peru	Wind Energy, Polygeneration and Rural Electrification
Argentina	Polygeneration and Solar Heating and Cooling
Chile	Polygeneration and Solar Heating and Cooling

The official started of the project was 28th of January of 2008 and it finished 27th of November of 2009, lasting 22 months.

The structure of the consortium has become very suitable for the established goals. On the one hand IDAE as coordinator of the project has a long experience on renewable energy and energy efficiency issues and also as co-coordinator of European projects related to Latin America. On the other, the participation of the European industrial associations as technological partners has guaranteed the involvement of the European industry and the technology transfer.

The role of local partners has been also very important. These local partners, as experts of the current situation of their countries and their needs, have guaranteed the local participation of the most relevant stakeholders and key target public from the host countries and also promotion and dissemination of the activities.

Finally the participation of the Spanish Office for Climate Change (OECC) contributing its specialized knowledge has guaranteed the dissemination of the results of the project among the targeted countries and also among all the members of the Latin American Network of Climate Change Bureaus (RIOCC) www.lariocc.net, amplifying the dissemination scope.

CDM have had a relevant upgrade in the five target countries of the TECH4CDM project. Nowadays, these countries have specialised institutions on CDM, public and private entities. In addition, several projects have been implemented, therefore CDM needs are well satisfied by those institutions.

The working programme period has coincided with a period of important transformations in energy and CDM sectors in most of targeted countries. For instance:

- Creation of Ministry of Electricity and Renewable Energy (MEER) in Ecuador and Ministry of Energy in Chile.
- National Commission for Energy Saving from Mexico has turn on National Commission for the Efficient Energy Use, modifying partially its attributions.

- In Argentina, Law 26.190 on the National Programme for the Promotion of the Use of Renewable Sources of Energy Destined for Electric Power Generation.
- In Mexico, two important laws in renewable energies and energy efficiency sector were published in November of 2008: the Law on the Use of Renewable Energies and the Financing of the Energy Transition and its Regulations (LAERFTE) and the Law on Sustainable Energy Use (LASE).
- 19 methodologies for small scale projects of CDM were accepted by UNFCCC when the project was approved and now there are 49 methodologies for small scale.

The project has been received with high interest in all the countries where activities have been developed. The organized events have been inaugurated by relevant authorities of each sector in all cases. Twelve Capacity Buildings and five High Level Seminars have been held. The number of participants in these events reached some 1,000 people, taking into account that the number of attendants was limited, especially in those of Capacity Building, as so to safeguard the fulfillment of searched objectives. And the project website has received more than 20,000 visits.

Involved sectors have insisted on the utility of this type of activities so as to foster the renewable energies and energy efficiency development. Other stressed issue by the receiving countries is the mobilization of the countries relevant agents providing, as an added value, to transference of technical knowledge.

The project objectives were totally reached as the important products and results obtained show it:

- Elaboration of 12 documents on the analysis of key factors for the development and implementation of the studied technologies. One document per country and technology. These documents will be updated at least during the period the web page is on line.
- 12 guidelines on the development of CDM projects.

- 12 viability studies of cogeneration systems. Some of them show very good perspectives due to very attractive return periods.
- 12 Capacity Buildings with 396 participants.
- 5 High Level Seminars with 683 attendants.
- Project website www.tech4cdm.com that has received more than 20,000 visits. This website will be on line at least two years after the finalisation of the project. All the information will be uploaded through the website.
- Publication of a brochure of CDM projects in Latin America. This brochure includes general data on CDM. Designated National Authorities (DNA) or CDM project registered is gathered in the brochure too

Both, Capacity Buildings and High Level Seminars have permitted to meet local agents and European companies. Some of the participant local agents have been: the Climate Change Directorate of the Environment and Sustainable Development Secretariat and the Wholesale Electricity Market Management Company PC (CAMESA) in Argentina; the Chilean Economic Development Agency (CORFO) in Chile; the National Council of Electricity (CONELEC), Ecuador's National Centre for Energy Control in Ecuador; the Energy Regulatory Commission (CRE), the Federal Commission for Electricity (CFE), the Institute of Electrical Research (IIE), the Environment of the Energy Secretariat (SENER), Petróleos Mexicanos (PEMEX), the National Workers' Housing Fund Institute (INFONAVIT) and the National Body for Standardization and Certification in Buildings (ONNCEE) in Mexico; and finally the Ministry of Energy and Mines (MEM), the Supervising Organism of Energy and Mining Investment (OSINERGMIN) the Economic Operation Committee of the National Interconnected System (COES), and the *Corporación Financiera de Desarrollo* (COFIDE) in Peru.

Regarding EU companies, Banco Santander, Repsol YPF, Barlovento Renovables, Trama Tecno Ambiental and Euro-solar were some participant entities. Also international organization took part in the hold events as The Latin American Energy Organization (OLADE) and the Inter-American Development Bank (IDB).

Practically, none of the studied technologies have had a large-scale development in the target countries, so that the lack of knowledge and experience of the technologies becomes one of the main technological barriers that must to be faced. Taking into account this fact, the Capacity Buildings were structured in order to reinforce the technical capabilities of the assistants.

Some of these technologies are experiencing important changes. This is especially the case of wind and solar thermal energy. Wind energy is taking off in the targeted countries, as Mexico and Peru. In Mexico due to the fact that the transport grids lacked the capacity to absorb all of the wind generated power in the Oaxaca area, an Open Season for reserving transmission capacity has been carried out. On the other hand, the Peruvian government approved a Law to promote investment in the generation of electricity through renewable energies, including wind energy. Through this Law 142 MW has been awarded to wind energy projects.

Regarding solar thermal energy, governments have started to take measures: Chile has approved a law that establishes a tax exemption in relation to solar thermal systems in housing buildings and Mexico is promoting also in housing buildings the solar thermal energy through the implementation of the PROCALSOL programme, - whose "Green Mortgages" initiative should be mentioned - which consists of including the cost for installing solar equipment in the mortgages for newly built housing. The most immediate goal of the PROCALSOL programme is to attain a surface area of solar heaters of 1,800,000 m² in 2012.

Most of the countries have identified the potential cogeneration technologies can offer and specific legal tools haven been developed in some of the target countries too. Nevertheless cogeneration technologies still are a slightly relevant role in energy mix. Except for the biomass applications, there are a few applications in the cogeneration sector. However, governments of the target countries are interested in cogeneration sector development due to its energy and environmental benefits.

Finally, countries where rural electrification was the studied technology are very active countries and they are working and implanting different programs and plans as the National Plan of Rural Electrification (PNER) in Peru and the Rural & Marginal Urban Electrification Program (FERUM) in Ecuador.

Dissemination and use

The most relevant knowledge arisen from the Project has been the update of the current situation to the renewable energies and energy efficiency sector in the studied countries. Another important result is the mobilization of agents and the value enhancement of European technologies in a field which is undergoing a really positive evolution during the last years. Keeping the mobilization, referred as public as private agents, is essential in order to guarantee the most effective dissemination.

The main tool for spreading information will be the project web page which will allow a regular dissemination of the information related to the TECH4CDM Project. The TECH4CDM website is addressed to the European and Latin American energy sector companies, institutions and public in general, being an efficient instrument for the dissemination of the work done and the results achieved. Moreover, this instrument will contribute to create awareness among policy makers, about the technological barriers in the region of the energy efficient and renewable energy technologies studied.

TECH4CDM website has received more than 20,000 during the project implementation period, becoming an important reference tool. And the periodic update of contents will keep the generated awareness so that the website will be a useful tool with its double function of promoting European technologies in the Latin American region as well as keeping informed of the produced changes in that region to the European companies.

The contents of the web site will follow-up and be updated according to the evolution in the Technologies focused in the Project and in the situation of the targets countries:

- Evolution of Technologies considered in the project;
- Evolution of the institutional framework in the target countries;
- Evolution of legislative framework in the target countries;

- New policies and instruments for the promotion of energy efficiency and renewable energies in the target countries;
- Other relevant aspects.