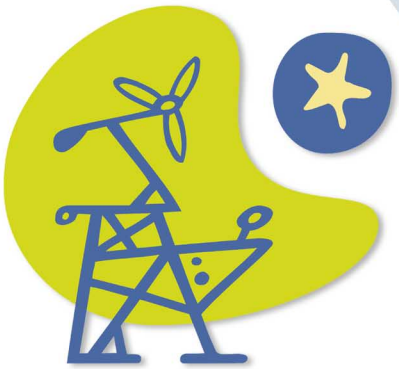
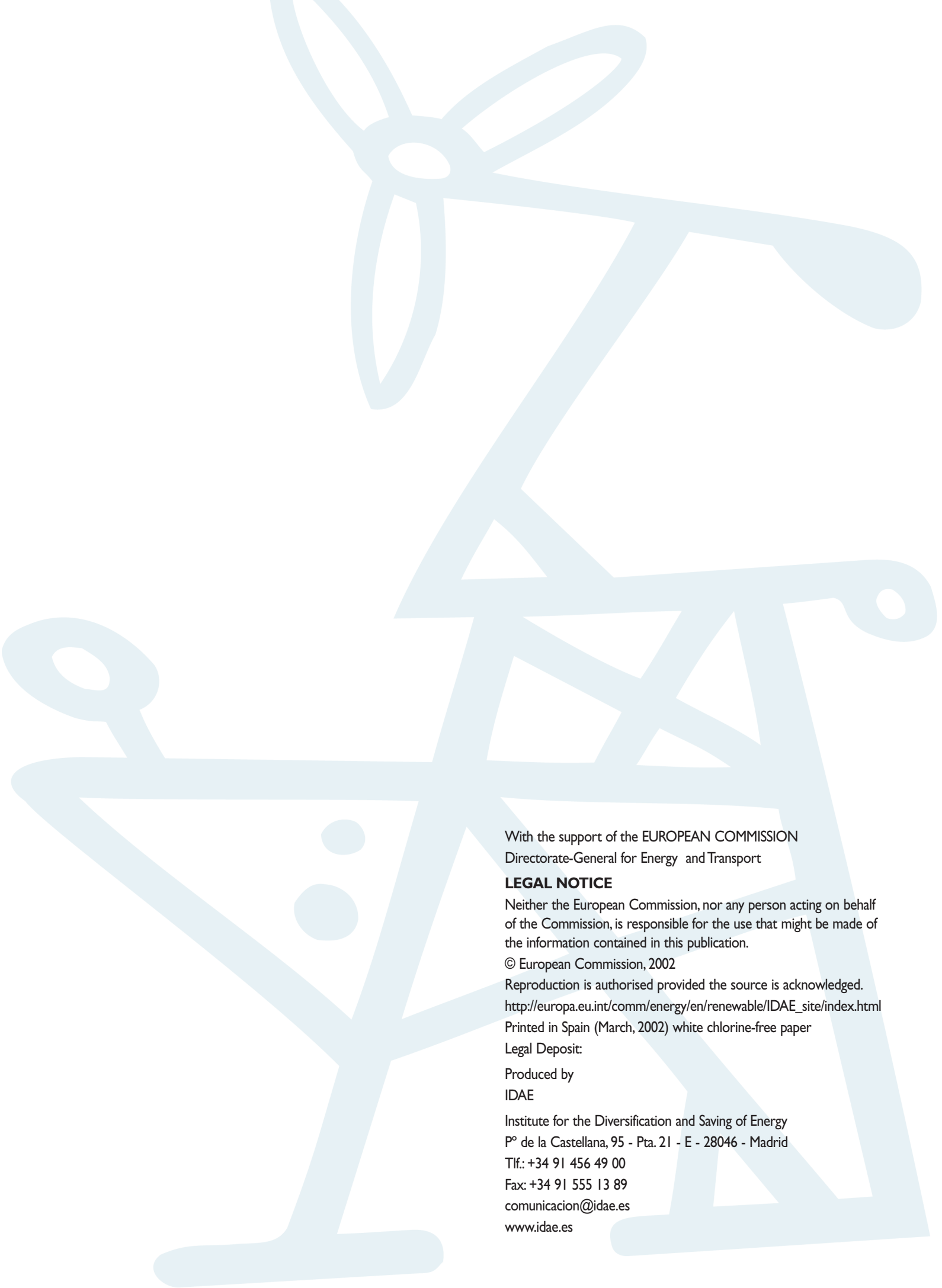


RENEWABLE ENERGY FOR EUROPE

Campaign for Take-Off

Catalogue 2001



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Directorate-General for Energy and Transport

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http://europa.eu.int/comm/energy/en/renewable/IDAE_site/index.html
Printed in Spain (March, 2002) white chlorine-free paper
Legal Deposit:

Produced by
IDAE

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Preface

It is a great pleasure for me to introduce the second edition of the Renewable Energy Partnership's Catalogue. A year ago, in the Preface of the first edition, I recalled that: "Partnerships require strong commitment and a substantial contribution to the objectives of the Campaign for Take-Off from those involved". This is a good opportunity for thanking all Partners that have decided to join the Commission's effort in the EU-wide Campaign to develop renewable energy by implementing ambitious projects around the Community. More than 70 Renewable Energy Partnerships have so far been registered, in which national programmes, regions and cities, the industry and a rage of associations and institutions demonstrate their willingness and their commitment to foster renewable energy take-off and full development.

Over the past two years I have worked to reinforce the Community regulatory framework in order to create a favourable legal environment for renewable energy's development, which will support your efforts. 2001 was full of initiatives and new developments are foreseen in 2002.

The Commission opened an EU-wide debate with the Green Paper "Towards a European Strategy for Energy Supply". The European Union is extremely dependent on its external energy supplies with imports currently accounting for some 50% of total requirements, and this figure is projected to rise to 70% by 2030 if current trends persist.

While strong measures on the demand side are needed to resist this trend, the promotion of renewable energy sources in the European economies focuses on reaching the ambitious EU objective of doubling the share of renewable energy form at present 6% to 12% of gross inland energy consumption by 2010. Such a major expansion of renewable energy is only achievable if it is supported by strong policies, including financial incentives.

Through our commitment to improve the Community regulatory framework, the European Commission has proposed policy measures and initiatives – including both legislation and dissemination – to foster market deployment of renewable energy sources and to control energy demand by improving energy efficiency.

The Directive on electricity produced from renewable energy sources, the first piece of European legislation that specifically addresses renewable energy sources, was adopted by the European Parliament and the Council on 27th September 2001. If the indicative targets proposed in the Directive are met, around 22% of the EU's electricity will be provided from renewable energy sources in 2010, compared with 14% today.

The draft Directive on the energy performance of buildings, adopted by the Commission on 11 May 2001, aims to promote the cost-effective improvement of energy efficiency and increased use of renewable energy sources in new and existing buildings within the EU. Today 40% of EU final energy is consumed in the buildings sector and a large savings potential exists: at least 22% of present consumption.

The draft Directive on the promotion of biofuels for transport, adopted by the Commission in 2001, requires that an increasing proportion of all liquid fuel for transport sold in the Member States be biofuel, starting with 2% in 2005 and reaching 5.75% by 2010.

Additional proposals are under preparation and I am convinced that, if these are promptly implemented, they will allow a real Take-Off for renewable energy sources. I also believe that the Partners whose action is detailed in the present Catalogue will take advantage of this new and more favourable legal environment to reach their objectives.

I would like to end by congratulating all involved in such ambitious projects as those included in the seventy Renewable Energy Partnerhips so far recorded, encouraging them to persevere and to successfully implement their commitments.

Loyola de Palacio

Vice-President of the European Commission

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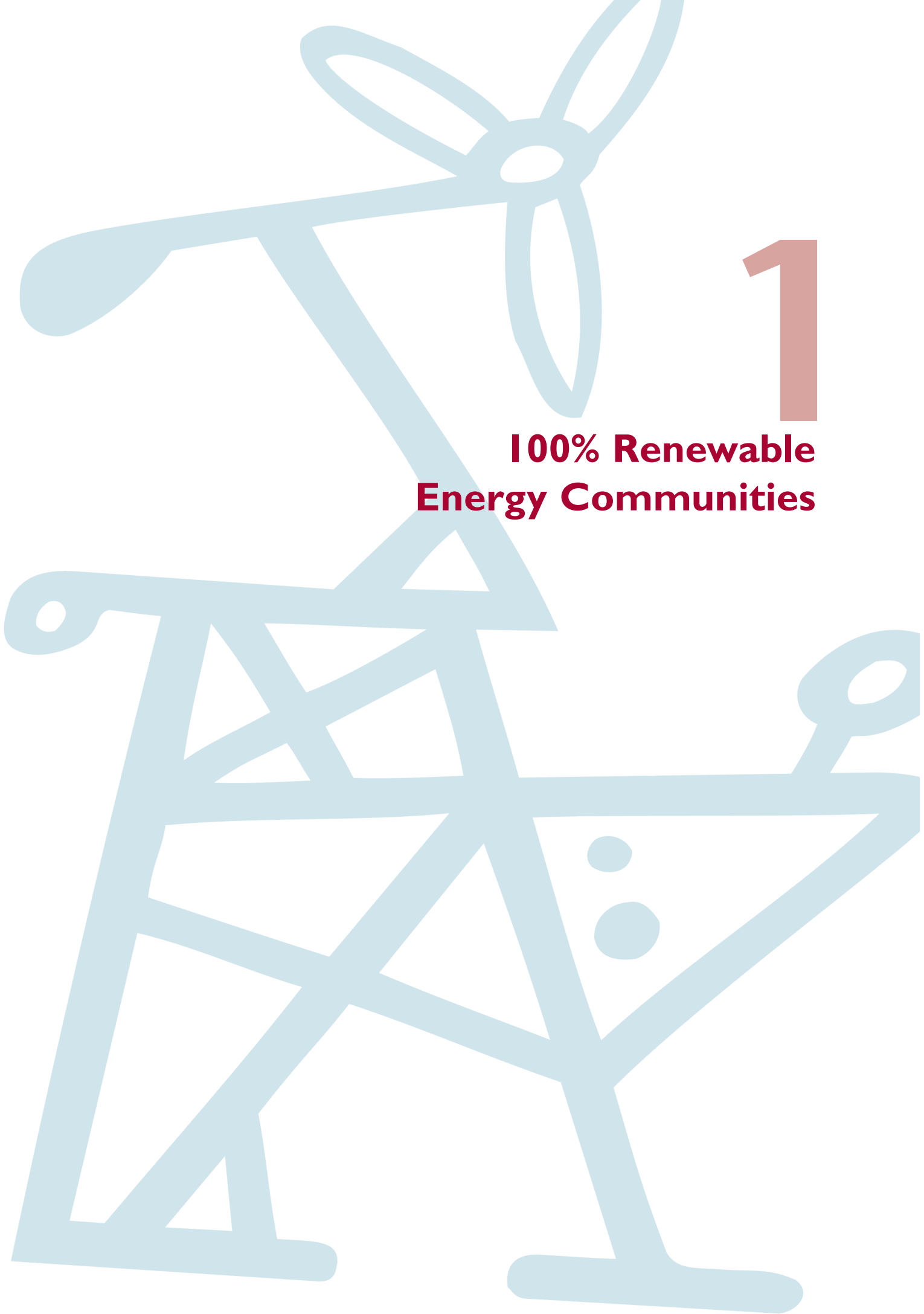

1

100% Renewable Energy Communities

Sector: RES
Country: Spain
Location: Island of El Hierro

EL HIERRO

Island, biosphere reserve, 100% RES supply

Background

El Hierro was the first island declared a Biosphere Reserve by the UNESCO in the new millennium. This acknowledgement was basically due to the need to preserve the particular natural and cultural heritage of the island, and involved the support to the island's Sustainable Development Plan, which was officially approved in 1997. The Plan contains an ambitious and innovative strategy for the future, which was endorsed by several sustainable development projects back in the 1980s.

Both the basic objectives of the island's declaration as a Biosphere Reserve and the Sustainable Development Plan include the commitment to make the island of El Hierro 100% reliant on RES. It is the first such pledge by any of the territories declared Biosphere Reserves by UNESCO and includes a commitment to its being suitable for replication in the more than 400 areas internationally recognised as biosphere reserves.

Promoter

El Hierro Island Authority

Parties involved

- ITC (Canary Islands' Technological Institute)
- Insula (International Scientific Council for Island Development)

Solar panels in the pilot area dedicated to biological agriculture in El Hierro

Objectives/Actions

The ambitious objective of **making the island of El Hierro 100% RES reliant** will be achieved through a variety of measures. These comprise the installation of a mixed system of electricity production that combines a wind farm with a hydroelectric power station (also used for the production of desalinated water for irrigation), the production of biogas from waste, the installation of solar photovoltaic, solar thermal and wind technologies in the residential sector and the introduction of an integral alternative transport system. In addition, the Plan seeks to implement corrective measures to preserve the landscape and to minimise the ecological impacts derived from the electric grid.

100% RES electricity supply project

The Government of the Island El Hierro (*Cabildo de El Hierro*), UNELCO (the local utility) and ITC (the Technical Institute of the Canary Islands) are collaborating in a project whose objective is to meet the island's electricity demand entirely from RES by 2005.

The supply will be ensured by a mixed system comprising a wind farm situated in the North East of the island and a hydroelectric pump-storage power station with a system of artificial lakes. Output can be varied to match demand, thus guaranteeing sufficient electricity supply. There is another reservoir next to the turbine with a capacity of 250,000 m^3 that collects fresh water for pumping it back up to the top reservoir, thus completing the cycle. The mechanism also includes a seawater desalination plant and, as a consequence, a significant increase in irrigation capacity. In this way, new organic farming projects can be linked to renewable energy.

El Hierro – "zero waste"

One of the basic features of the island's sustainable development strategy is the group of actions generated under the initiative "El Hierro - zero waste", which consists of the production of biogas by exploiting stockbreeding effluents and sewage for methanogen fermentation. This project is the result of an international co-operation initiative with the island of Cuba, which counts on important technical experience and human training

EL HIERRO Island, biosphere reserve, 100% RES supply

that could be profited in El Hierro. The first phase of this ambitious programme has already been concluded, and the digesters installed in an experimental farm sponsored by the Local Island Council are now operative.

Alternative transport

Transport's energy dimension could not be left out of an integrated sustainable development project that aims to become a working model for other island regions of the world. Thus the Island Council, in co-operation with the local transport co-operative, started to take the first steps to consolidate an alternative transports system.

The demonstration projects planned are the following:

- Incorporation of a hybrid bus to the local fleet. Initially, its use will be limited to the shuttle between the airport and the capital and may use biogas as fuel.
- Introduction of an electric, battery-powered minibus in the area of El Golfo, for mixed tourist-public use. It would rely on a photovoltaic station for its recharge.
- Development of an extensive pedestrian network.
- Creation of an advanced information and management transport system within the framework of the sub-programme "El Hierro- Digital Island".
- Development of an ingenious ticketing system for the optimisation of journeys in scattered rural areas, occasionally turning the private vehicle into collective transport, supported by electronic systems for fare payments.

Results

The project has just been set up and most of the activities described are now in the phase of technical definition. The outcome of this project, as stated in previous sections, is the achievement of a self-sufficient energy system in El Hierro, fed by RES.

Other outstanding results include:

- Installation of 15 MW from the wind power system.

Annual production of 43,357 MW from the wind-hydro system.

- Capacity of the desalination plants of 500,000 m^3 a year.
- Installation of 500 m^2 to 600 m^2 solar thermal panels.
- Production of 30 kW from solar photovoltaic.

Financial resources

Action	Cost in Euro
Wind powered hydraulic system	19,500,000
Desalination plants	2,100,000
Biogas plants	2,500,000
Alternative transports	1,800,000
TOTAL	25,900,000

Management

Relying on the support of the ITC (Canary Islands' Technological Institute), an Island Energy Agency is being developed, with support of the EU's SAVE programme. The agency will be in charge of the day-to-day operation of the programme and will work closely with the Cabildo Insular, Canary Islands' R&D institutions and private companies in order to identify opportunities for RES development and to work towards the realisation of a sustainable energy system.

Monitoring

The Council of the Biosphere Reserve, in which all sector associations and local groups are represented, acts as a forum for social participation.

In addition, the Council receives scientific and technical advice from Universities and R&D institutions.

It is also worth noting that this project, being part of the UNESCO's programme of MaB-Biosphere Reserves, feeds from the experience of similar initiatives carried out in other parts of the world, in particular in islands like Minorca, Guadeloupe, Galapagos, Hiiumaa and Lanzarote.

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Sector: RES
Country: Sweden
Location: Municipality of Kristianstad

KRISTIANSTAD

fossil fuel free municipality

Background

Kristianstad is the capitol of Region Skåne. About 74,000 people live in the municipal area. There are an unusually large number of smaller towns and villages, of which the six largest function as industrial, service and residential hubs.

Good farming conditions, a high level of mechanisation, a good environment and specialised investment in research and development have made Kristianstad into one of the food centres of Sweden.

In 1999, the Executive Committee of Kristianstad municipality unanimous decided to declare its will to become a "Fossil Fuel Free Municipality". The reduction of fossil fuels is to be achieved primarily by the use of bio-fuels, both biomass as fuel for heating and production of electricity and biogas as fuel for local buses and other vehicles. Community planning is also an important instrument to promote a fossil fuel free municipality and thus extensive changes in the city centre have been made, which include its transformation into a pedestrian precinct and the expansion of the cycle path network. Other activities are linked to the increase of energy efficiency and changes in behaviour patterns.

Promoters

Municipality of Kristianstad

Parties involved

- C4 Energi AB (Kristianstad Energy Ltd.)
- Kristianstads Renhållnings AB (local refuse collection company)
- Sydgas
- Skånetrafiken (public transport company)
- AB Kristianstadsbyggen (the municipal house company)

Vehicle delivering manure to the biogas plant in Kristianstad

Objectives/Actions

The target of making Kristianstad a **fossil fuel free municipality** is being achieved through a number of actions:

Biomass

Since the middle of the 1980s, Kristianstad Energy Ltd, (C4 *Energi*), has worked towards replacing oil by bio-fuel and developing a combined power and heating plant in Kristianstad. Major parts of the city are served by district heating and new areas are continually added.

In minor villages, small-scale district heating plants using bio-fuel (so-called local heating plants) are being planned. C4 Energi has built 2 local heating plants (in Vä and Färlöv) and a third in Åthus is planned for 2003.

Biogas

In 1997, the local refuse collection company (*Kristanstads Renhållnings AB, KRAB*), established a biogas production plant in Karpalund aiming to improve sustainability and energy production.

Solar

The municipal house company (*AB Kristianstadsbyggen*) has built a pilot project with solar panels producing electricity.

Transports

From 1st of November 1999, biogas produced at the sewage treatment plant is upgraded and used as fuel for buses and other vehicles. This is a joint venture with the private Sydgas as a partner and co-investor. The public transport company, *Skånetrafiken*, has introduced 8 buses fuelled by biogas in the city-transportation. During the summer 2002 Skånetrafiken will introduce additional 14 biogas buses.

KRISTIANSTAD, fossil fuel free municipality

The Swedish Ministry of Environment has awarded investment grants for the following investments to continue the biogas project:

• A second location for cleaning gas and fuelling is going to be established in 2002.

• Increased capacity of the biogas plant in Karpalund run on waste and manure (2002).

Community planning is an important instrument for reducing the increase of traffic and the Municipality of Kristianstad has made extensive changes in the city centre in order to encourage cyclists and pedestrians. The major part of the city centre is a pedestrian precinct. During the years 1998 -2000, large investments were made and planned for the expansion of the cycle path network and, during 1999, the campaign "from accelerator to bike" was launched. The aim of the campaign was to reduce short car travels by changes in behaviour patterns.

Energy advisor

Since the summer of 1998, the Municipality of Kristianstad has an advisor on energy, financially supported by the Swedish National Energy Administration. The energy advisor is working to implement the conversion of heating systems from oil to bio-fuel in households outside the district heating area.

Results

The main results of the project, for the year 2000, have been summarised in the table that follows.

Significant milestones reached during the year 2000:	
Description	Figures
Energy sold from the power plant	220 GWh
Electricity produced in power plant	25 GWh
Number of dwellings connected to the heating system	9,472
Number of houses converted to bio-pellets	35
Number of schools and other buildings converted to bio-pellets	30
Biogas production from the sewage plant, for heating	4,586 MWh
Biogas production from the sewage plant, buses and cars	1,570 MWh
Biogas production from the biogas production plant, for heating	22,000 MWh
Electricity from wind turbine generators	6,296 MWh
Electricity from two solar panels	11 MWh
Cycle path network	136 km
Cycle path network (touristic)	38 km

Financial resources

The investments in the project during the years 1998 – 2002 sum up to 28 Million Euro.

Management

The program will be managed within the "local investment programme". The authorised body is the municipal administration of Kristianstad, supervised by the executive committee of Kristianstad.

Monitoring

The activities of monitoring are also included within the "local investment programme".

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2

National Renewable Energy Partnership

Sector: STH
Country: Germany
Location: Nationwide action

SOLAR-NA-KLAR

a national promotion campaign for solar collectors

Background

Solar energy has a positive image with the general public in Germany and the country leads Europe in terms of both the total installed solar thermal collector surface (2.75 Million m^2 in 1999) and in annual installation figures (462,800 m^2 in 1999). However, when considering the ratio of installed collector surface to number of inhabitants, Germany, with 34.5m^2/1,000inhab in 1999, is in fourth position in the EU, well behind Austria and Greece. Although there is considerable willingness to invest in solar thermal systems, barriers between potential investors and solar thermal system traders remain.

There is a need for a means of communication which imparts the message that individual conduct can have an influence in solving environmental problems. The nation-wide "Solar-na-klar" campaign was set-up in order to close this gap.

Promoters

BAUM (German Environmental Management Association)

Parties involved

- DBU (German Foundation for the Environment)
- BMU (Federal Ministry of Environment)
- ZVSHK (National Installers Association Sanitary Heating Climate)
- DFS (German Association for Solar Energy)
- DGS (German Society for Solar Energy)
- BSE (Federal Association for Solar Energy)
- BDA (Association of German Architects)
- DNR (German Ring for Nature Protection)
- All 16 Member States of the German Federal Republic

"Solar-na-klar!" in Saxony-Event for craftsmen at 24th of August 1999

Objectives/Actions

After a year of preparation, "Solar-na-klar" was launched in 24 March 1999 and was first designed for a duration of three years, which will be extended beyond 2002.

The main objectives of the national campaign are:

- **Raising the awareness** and information of the German general public about the use of domestic solar thermal systems.
- Translating the fact that the general public is strongly in favour of the idea of solar energy into a readiness to invest in it.
- Motivating installers to **develop the solar market** as a new and rapidly growing field of business for them.
- Giving consumers **access to the installers** registered in the campaign.
- Supporting the start-up and running for **regional solar campaigns.**
- Raising the number of **domestic solar systems** installed in Germany to 400,000 a year up to 2005.
- Creation of long-lasting **jobs**: 20,000 in 2005.
- **Saving of one Million tonnes of CO_2** in 2003.

The channels for action are varied and include a wide dissemination campaign through the use of mass and specialised media, as well as complementary material.

Dissemination activities

Reports and short press releases are regularly submitted to the general and trade press. Also television, radio and the internet have been used in the same way.

The campaign has sought to obtain prominent testimonials for "Solar-na-klar" so as to enhance the impact on the general population. PR events with ministers of federal states and well-known Olympic gold medallist Jens Wießflog (in Saxony) received media coverage

SOLAR-NA-KLAR, a national promotion campaign for solar collectors

in the German regions. A big event with chancellor Gerhard Schröder, prime minister Wolfgang Clement of North Rhine-Westphalia, the well-known actress Marie-Luise Marjan and several artists obtained nationwide media coverage and aroused considerable public interest.

Finally, the campaign has been presented at several events, such as trade and consumer fairs including the leading international Trade Fair for Sanitation and Heating in Frankfurt, and a competition called "Solarschools" was launched in 2000, with the aim of attracting the interest of the youngest cohorts.

Support material

A variety of materials and a strong infrastructure have been set up for supporting the various dissemination activities. For instance, a brochure for consumers was designed and then distributed (approximately 200,000 copies) to interested citizens along with a list of regional installers registered in the campaign. This information was also made available on the campaign's website (www.solar-na-klar.de) and a call centre service number for consumers was set up which, only in 2000 alone, dealt with 15,000 requests a month.

An important effort has been made to increase the level of information, training and the interest of installers and other professionals, as this is considered to be a key factor for the success of the initiative. This has included, in particular, sales folders for installers, a service box (the electronic tool-box for local/regional PR and advertising activities, technological information and sales advice), and a hotline for installers.

Finally, the nationwide campaign seeks to strengthen the links with other existing initiatives, particularly those at the local and regional level. To this end a practical guideline "Solar-na-klar – Regional" for regional and local solar campaigns was created, which can be downloaded from the web site.

Results

Overall can be summarised as follows:

- 435 Million contacts in newspapers and magazines.
- 87 broadcasts in TV and radio with 20 Million spectators and listeners.
- More than 221,000 brochures distributed to interested customers (total).
- 102,000 call centre contacts.
- 360,000 visits on www.solar-na-klar.de (2000).
- 7,670 registered craftsmen (> 50% of total suppliers of heating installations in Germany).
- Cooperation with more than 100 local solar initiatives.

Financial resources

Organisation	Financial contribution in Euro
Federal Foundation for the Environment	2,000,000
Companies of the solar industry	650,000
The 16 Federal States of Germany	600,000
Federal Ministry of Environment	250,000
Ruhrgas AG	750,000[1]
Allianz Environmental Foundation	1,000,000
TOTAL	5,250,000

Management

The campaign is managed by Prof. Dr. Maximilian Gege (head of campaign) and by Andreas Kleinsteuber (vice-head of campaign), both from BAUM.

There is a Steering Committee that brings together associations from different social-economic sectors: BAUM, National Installers Association Sanitary Heating Climate (ZVSHK), German Association for Solar Energy (DFS), German Society for Solar Energy (DGS), Federal Association for solar Energy (BSE), Association of German Architects (BDA), German Ring for Nature Protection (DNR). The Steering Committee participates both in the management and monitoring of the actions.

Monitoring

The results of the campaign are continuously assessed by the "Solar-na-klar" team in Hamburg and evaluated within the Steering Committee. All decisions about the details of the campaign and necessary adaptations are taken within the Steering Committee.

An external evaluation by the Federal Environmental Agency (UBA) has started in February 2001. The results will flow into the extension of the campaign.

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3

Regional Renewable Energy Partnerships

Sector: RES
Country: Italy
Location: Province of Chieti

CHIETI 104

renewable energy source

Background

Chieti is the most southerly province of the Abruzzo region and has a population of 389,968 distributed across 104 municipalities.

As highlighted by a number of studies, the characteristics of the local climate and soil suggest there is significant potential for the development of renewable energy sources in the area.

Within the framework of a Local Agenda 21 that is being defined at the provincial level, the authorities have designed a comprehensive programme aimed at encouraging the diversification of energy sources, the rational use of fossil fuels and the strengthening of the links between energy, environment and sustainable development.

Promoters

Province of Chieti

Parties involved

- All the 104 Municipalities of the Province of Chieti
- Consortiums and mountain communities of Chieti
- Territorial Agreements: Trigno Sinello- Vasto; Sangro Aventino- S. Maria Imbaro; Chietino Ortonese- Chieti
- ENEA
- Regione Abruzzo- Corpo Forestale Dello Stato
- Universita' Degli Studi G. D'Annunzio
- Associations: Assoenergia- Roma; Copagri; Unione Provinciale Agricoltori; Confederaz. Naz. Le dell'Artigianato; Amab Abruzzo; Associazione Piccole Industrie; Associazione Ind. Le Prov. Di Chieti
- Private sector companies and local banks

Municipal bus fed with biofuels, used in the Province of Chieti

Objectives/Actions

The methodology used in the design of the energy plan is that of a Local Agenda 21, which encourages the participation of relevant social-economic agents and the leadership of the private sector. The objectives of the plan are multiple and interconnected, and strongly rely on the guidelines of the Campaign for Take-Off and on the more general framework of the White Paper. In harmony with this approach, two reference periods have been considered the first of which reaches up until 2003. The second reference period extends up to 2010 and is more ambitious in its aims given that it focuses more on longer-term effects. The specific goals of the plan include:

- Installation, by 2003, of **2000 m² of solar thermal panels.**
- **Development of wind energy** through the installation of wind turbines in various areas, amounting to 205 MW by 2003.
- **Fostering the use of biomass** in private homes (3,000 houses) and large buildings, through the use of olive pressings and forestry waste.
- **Exploiting the potential of photovoltaic panels** in industrial and commercial centres.
- **Use of waste for electricity production.**
- **Encouraging the generalisation of the use of liquid biofuels** for public transport (consumption of 6,000 tonnes a year for public transport in 2003 and 10,000 by 2010) and other complementary measures to reduce CO_2 emissions derived from urban traffic.
- **Bolstering measures related to the rational use of energy**, such as introduction of co-generation systems.
- **Improving the monitoring** of environmental status, through the design and preparation of a battery of indicators to be collected periodically.

The actions planned cover all these areas can be summarised as follows:

CHIETI 104, renewable energy source

Solar thermal

The province of Chieti is actively involved in the "Commune Solarizzato" project, sponsored by the Italian Ministry of Environment. The provincial agency and 10 municipalities included within it are developing concrete efforts to install 2,000 m^2 of solar panels by 2003.

Solar photovoltaic

The actions envisaged include the installation of solar panels in commercial centres and factories. In addition, extra support is being given to the national "Photovoltaic roofs" campaign.

Wind

The authorities aim to contribute to the installation of new privately-owned wind farms with an estimated capacity of 205 MW. The role of the public sector will focus on experimental actions relating to small-scale generators (less than 50 kW).

Biomass

Two district heating projects have been identified, with a production of 7 MW coming from the combustion of olive pressings and forestry waste. In addition, gas cogeneration (combined heat and power) and small-size wood-fuelled electricity generating systems for mountainous and rural areas will be funded.

Biofuels

There is particular interest in the introduction of biofuels mixed with diesel for public transport. After a trial period, this should come into widespread use in 2002. The initiative is based on agreements between private producers and private and public transport businesses.

Waste

A study is being conducted into to the creation of a 50 Gwhe/year energy recovery unit on an abandoned off-shore platform. In addition, a facility producing energy from solid municipal waste is planned.

Micro-hydro

After a careful economic and environmental analysis, it has been stated that at least 6 abandoned micro-hydro stations will be put back into use.

Results

The results achieved by the programme during its first year are very promising, although there is still the need to overcome certain barriers such as the existence of some legal and administrative difficulties and the still inadequate number of professionals in the area.

Financial resources

RES area	Investment in Euro
Solar thermal collectors	440,000
PV systems	2,000,000
Wind turbine generators	222,000,000
Combined heat and power	7,000,000
Dwellings heated by biomass	5,000,000
Biogas installations	Not defined yet
Liquid biofuels	Not defined yet

Management

The overall management of the plan is the responsibility of the Energy Agency of Chieti, that has been recently established, although individual actions are managed according to their specific characteristics. The private sector players financing and running the installations are usually involved in the activities.

Monitoring

Monitoring also form part of the tasks assigned to the Energy Agency.

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Sector: RES
Country: Belgium
Location: Flemish Region

ECOPOWER

brings together Flemish citizens to invest in renewable energy

Background

Ecopower cvba is a financing co-operative for renewable energy founded in 1991 and officially recognised as co-operative by the Belgian Government. Its goal is to implement renewable energy projects involving large numbers of shareholders, ideally drawn from among citizens living close to the sites of the RES installations themselves.

Two important considerations are at the basis of the approach followed by Ecopower:

1. Energy is a collective resource.
2. People who are truly involved in renewable energies (e.g. through their investments) tend to be more conscious of their energy consumption.

In the Ecopower's scheme, interested citizens and organisations can buy one or more shares at a price of 250 Euro each. This gives them the right to one vote in the co-operative's General Assembly, irrespective of the amount of shares that they have. Having been granted recognition as a co-operative, Ecopower is obliged to limit yields on shareholders' investments to a maximum of 6%. This is not necessarily an obstacle, however, as it creates some interesting possibilities given that the co-operative can also pursue less profitable projects. The financial surplus will be used for this purpose.

Promoter

Ecopower cvba

Parties involved

- All citizens that become shareholders. By 2001, there were around 500
- City Council of Eeklo
- Environmental Administration of Eeklo
- Other local authorities involved in the projects

Children enjoy sitting on the giant blade of Ecopower´s first 1'8 MW turbine, near the city of Eeklo

Objectives/Actions

The overall objective of Ecopower's activities is to **rapidly exploit the technical potential of renewable energy sources in the Flemish Region of Belgium, assuring the highest possible level of involvement of Flemish citizens and local population.**

Realisations

In 1999, the city council of Eeklo, a relatively small city near Ghent, decided to start a sustainable development project. It soon became clear that a focus on energy was desirable and thus the project's organizers chose to build wind turbines.

First of all, a thorough analysis was conducted of the urban and rural areas in the vicinity. The city's environmental officer drew up a plan based on a number of criteria: the wind turbines would be built at least 250 m from housing areas and they should not have an environmental impact on important nature conservation areas.

In the end, three sites were short listed: two of these were owned by the City Council, which decided to use them and launched a call for tender for companies wishing to build and operate the turbines. Of the seven companies that participated in the tender, Ecopower was awarded the contract.

One of the milestones of the project undertaken by Ecopower was the launch of a comprehensive information strategy and campaign, also supported by the City Council. As a result, the inhabitants of Eeklo have been well informed and enthusiastically supportive towards the project. Moreover, they are convinced of the wind turbines' potential, and many of them have acquired a share in Ecopower, and thus in what should become 'their' wind turbines.

In June 2001, the two first wind turbines of Ecopower officially started production in Eeklo. These are the largest wind turbines in Belgium, increasing the total installed capacity in Belgium by over 20%. The electricity that they generated is enough to meet the needs of around 1500 families.

ECOPOWER brings together Flemish citizens to invest in renewable energy

The wind turbines have a very high symbolic value, having been sited on an inland with moderate wind speeds and still providing a financially interesting investment for over 300 Flemish citizens. Additionally, it became obvious that the co-operative model is very successful for the rapid deployment of wind energy in Flanders. It can be expected that this success can be repeated for different renewable energy sources.

Actions ahead

Since the realisation of the project in Eeklo, a number of communities and cities have contacted Ecopower to set up similar initiatives. Currently over 50 wind and small hydro power projects are under consideration.

The idea of Ecopower and its partners is to build upon the success of Eeklo, extending the activities to other parts of the Flemish Region of Belgium in the period 2001 – 2003. Some of the targets to be achieved are:

- 15 MW additional capacity of wind power installed and connected to the grid.
- 125 kW additional capacity of small hydro power up and running.
- 1000 additional shareholders investing at least 250,000 Euro in renewable energy by buying shares of Ecopower.
- As a complement, Ecopower intends to realise some projects using photovoltaic technologies.

The example of Eeklo has proved that close collaboration with the community and with city administrations is a key factor. With this in mind, Ecopower runs an information campaign for each project, and its website provides up-to-date information on past and ongoing activities and offers a multitude of pictures that speak for themselves.

Possible environmental constraints (noise, visual aspects, birds, etc.) are best studied in close partnership with local authorities and Ecopower will not persist in realising projects if there is justified opposition from the local population.

The targets proposed are based on a portfolio of projects currently under development and/or negotiation in combination with a modest rate of success for realising the proposed installed capacities of wind power and small hydropower. With the awareness of renewables growing strongly among the population, the political weight of renewables is increasing.

Results

The results of the partnership programme can be summarised as follows:

- Technical: 15 MW wind and 125 kW small hydro power installed by the end of 2003.
- Energy: 27 Million kWh green electricity produced yearly from 2003 onwards.
- Economic: 1,25 Million Euro invested in renewable energy by private citizens by the end of 2003.

Financial resources

As a co-operative, Ecopower is continuously increasing its capital as shares are bought by new shareholders. This capital is used to invest in the projects developed, while projects already in operation can generate financial benefits to be invested in new projects. For capital intensive projects, external resources are sought from financial institutions. The financial institutions must meet strict criteria in terms of respecting social and environmental standards.

Management

The board of directors of Ecopower is in charge of all management issues. With regard to project development, the management team draws up all the technical and economic details with the assistance of a number of interested shareholders. The project realised in Eeklo has provided in-depth expertise on how to develop projects in a professional manner.

Monitoring

The proposed targets are straightforward and the progress in terms of installed capacity, green electricity produced and number of shareholders can also be easily measured. In order have an independent party involved, Ecopower proposes to invite the Department of Natural Resources and Energy of the Ministry of the Flemish Government, to monitor the programme.

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Sector: RES
Country: Austria
Location: Region of Upper Austria

ENERGY 21

the energy action plan of Upper Austria

Background

Renewable sources of energy accounted for 30% of the primary energy consumed in Upper Austria in 2000. This outstanding result was driven by the design and implementation since 1993, of an energy strategy including a clear political commitment and the application of an action plan targeted at various market actors. The strategy led to a reduction of energy consumption of 30% in new domestic buildings and of 2% in industry.

In the light of this success, a new strategy for the 21st century has been adopted: during the year 2000, so-called "Energie 21" Action Plan was approved by the Government of Upper Austria. The Plan reinforces and widens the set of actions of the previous period while also taking into account the recommendations put forward in the "White Paper for a Community Strategy and Action Plan" of the European Commission. As it is now clear that a change in energy behaviour patterns will not happen on its own, the Plan comprises a mix of measures aimed, at "creating demand" for RES and at "meeting demand" through RES.

Promoter

O. Ö, Energiesparverband (Regional Energy Agency of Upper Austria)

Parties involved

- Regional Government
- Energy Commissioner of Upper Austria
- Interest groups (e.g. Chamber of Commerce, professional associations)
- Energy supplier
- Technology companies
- Energy consultancies

"ENERGY 21". The Energy Action Plan of Upper Austria

Objectives/Actions

The objectives of the "Energy 21" Action Plan can be grouped in several areas:

1. **Increase the share of RES**.
2. **Raise overall energy efficiency and energy efficiency in the industry sector by 10%.**
3. **Decrease the use of energy for heating by 20%.**
4. **Establish new companies in the field of RES and RUE technologies**, thus fostering regional employment.
5. **Implement new energy research & demonstration projects.**

The aim is to meet these ambitious objectives with the aid of a detailed strategy that mixes measures in the financial and legal fields, as well as complementary activities on information, training and awareness building. The Plan focuses on housing, public buildings and on companies and other regional institutions. Additionally, it intends to achieve greater security of supply through the diversification of sources. The table that is shown below summarises the main actions to be carried out in each of those fields.

Targeted area	Actions foreseen
Housing	Establish energy criteria for new and retrofitted buildings. Identify new financing mechanisms for energy efficiency measures. Introduce technologies that raise the energy efficiency of heating systems. Promote overall energy system solutions. Launch information, motivation and training campaigns. Support the use of waste heat.
Public buildings and municipalities	Establish energy criteria for new and retrofitted buildings. Foster the use of the third party financing mechanism. Introduce a soft loan programme for new and retrofitted buildings that improve energy efficiency. Support the entry of new competitors to allow for lower energy benchmark.

ENERGY 21, the energy action plan of Upper Austria

Targeted area	Actions foreseen
	Introduce an energy accounting system. Take into account the external costs of energy measures in investment decisions (through the use of "wider economic calculation approach" system). Provide with training to professionals and local managers. Support municipalities in the adoption of RES and RUE projects. Appoint responsible staff for energy matters. Support regional/ local energy concepts.
Companies and institutions	Support "Ökoenergie-Cluster": a new network of companies active in the field of heat and electricity generation from RES. Design energy plans for different industrial and commercial sub-sectors. Provide with energy advice to interested agents. Create specific support schemes. Facilitate the signing of voluntary agreements/ benchmarking.
Energy supply	Foster CHP technologies. Support the use of waste heat. Finance demonstration plants.

Results

The Plan aims to have a profound impact on several RES fields, as well as in the social-economic structure of the area:

- Produce 10 additional PJ from RES.
- Install 400,000 to 500,000 m^2 additional solar thermal collectors.
- Install 10,000 new modern wood heating systems.
- Create 10 biomass district heating plants annually.
- Install 30 to 40 new photovoltaic systems annually.
- Decrease the use of energy for heating by 20%, thanks to the introduction of more efficient systems in 3,000 new households and 1,500 retrofitted.
- Establish 30 new companies in the field of RES and RUE thus creating 1,500 jobs.
- Undertake 15 new research & demonstration projects annually.

Financial resources

Action	Cost in Euro (annual)
Sustainable buildings programme	21,800,000
Öko-Pool	7,300,000
Heat systems using RES in the domestic sector	11,000,000
Promotion and information measures, R&D programmes and training	3,600,000
TOTAL	43,700,000

Management

O.Ö. Energiesparverband, the regional energy agency of Upper Austria, is the body responsible for the implementation of most of the measures included in the energy action plan. The agency, which was founded in 1991 is the central institution for energy information and one of Europe's largest energy advice and information providers.

Monitoring

The energy agency reports annually to the Upper Austrian Government on the progress made by the Plan and its different actions. The Plan is also distributed among energy experts and other interested agents.

The outcome of one year's activities feeds into the strategy of the following year, thus helping to reinforce the weakest areas. For instance, recent evaluations have shown that more efforts are needed in the field of solar thermal collectors and, in consequence, the amount of resources and personnel dedicated to it has increased.

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Sector: RES
Country: Germany
Location: District of Fürstenfeldbruck

FÜRSTENFELDBRUCK'S

energy turn

Background

The District of Fürstenfeldbruck, with 191,000 inhabitants in an area of 434.84 km^2, is the most densely populated of Bavaria though it comprises, alongside urban conglomerations, remote rural areas.

The application, since 1993, of a Local Agenda 21 has implied a continuous improvement of the local conditions towards the adoption of RES at large scale.

In April 2000, the 1st Energy Forum took place, where the decision to base the energy supply of the district entirely on renewable sources was publicly announced.

This led to the establishment of the association ZIEL 21 in January 2001. This association has now the task to shape the process of the energy turn in the district, to co-ordinate and link the various working groups, to provide public relations and to serve as central co-ordinating body.

Promoter

ZIEL 21 e.V.

Parties involved

- District of Fürstenfeldbruck
- City of Fürstenfeldbruck
- BRUCKER LAND
- Municipal Savings Bank Fürstenfeldbruck
- District Section of the Bavarian Assembly of Communities
- Church
- Municipal Utility Fürstenfeldbruck
- Southern Bavaria Natural Gas
- Craftmans' establishments
- Association of Self-Employed / German Association of Trade
- Chamber for Industry and Commerce
- District's Craftsman Corporation
- Players from Agriculture
- German Association for the Protection of Nature (BUND)
- Sonnenkraft Fürstenfeldbruck e.V.

Overview of a biomass plant in the district of Fürstenfeldbruck

Objectives/Actions

The District of Fürstenfeldbruck has set itself the objective to **base its energy supply completely on renewable energy sources until 2030,** in order to promote the protection of the climate as well as the regional economy.

This aim is twofold as it comprises, on the one hand, the need to reduce its present energy consumption (actually, of 6,000 GWh/ year) by one half and, on the other hand, to extend the use of renewable energy sources. In addition, the use of local energy sources will be prioritised.

Actions that will be carried out by ZIEL 21 in the framework of the Energy turn of the Fürstenfeldbruck District:

Comprehensive public relations and broad shaping of awareness in the district

- Workshops for consumers, craftsmen and communities.
- Development of an internet platform for information and communication for consumers, communities and regions.
- Documents and reports to inform consumers and communities.
- Sustainability report for the district of Fürstenfeldbruck.
- Information materials for consumers.

Establishment of structures and networking

- Exchange of technical know-how, best practise and best strategies in work-groups.
- Guidelines for work-groups and technical systems.
- Training material and workshops for installers, operators and maintenance personnel.

Counselling of private consumers, communities and trade

- Documents and reports.
- Standard system & service packages for solar hot water heating and photovoltaic systems to create user confidence.
- Workshops for communities, consumers and trade.
- Information materials for consumers.

FÜRSTENFELDBRUCK'S energy turn

Actions that will be carried out by ZIEL 21 in the framework of the Energy turn of the Fürstenfeldbruck District:

Development of investments by the district and communities

- Investment of communities in biomass heating systems, biogas plants and photovoltaic plants.

Encouragement of private investments

- Medium-size citizens-owned community installations e.g. photovoltaic plants, biomass heating systems or other renewable energy systems.

Enhancement of technical developments

- Development of system & service packages for conversion of motors (vegetable oil packages for mobile application).
- Development of standardised medium-size PV demonstration plants for communities.
- Monitoring of biogas plants at local level.

Support to the creation of new businesses

- Exchange of technical know-how, best practise and best strategies in workgroups.
- Guidelines for workgroups and technical systems.
- New businesses for installation, operation and maintenance of renewable energy systems.
- New businesses for the rural area, e.g. vegetable oil mills, biogas plants.
- New businesses for craftsmen, architects and engineers (building and restoring of buildings with low energy use.

Results

The following results will be achieved in the next two or three years:

- Construction of demonstration PV plants in each of the 23 communities.
- Design and implementation of pilot projects of other renewable energy systems in each community (e.g. biomass heating systems, de-central combined heat & power production from vegetable oil, local heat networks).
- Installation of 500 new hot water heating systems on private buildings.

Financial resources

The major part of the investment foreseen in the Plan will have to be funded by the private sector (either companies or individuals). In this line, the German Market Introduction Programme for Renewable Energies and the CO_2 Reduction Programme would be used as a support to the investments. In addition, the Renewable Energy Act, which defines minimum fees for the remuneration of electricity from RES that is fed into the grid, constitutes another source of funds.

At this initial stage, it is very difficult to even provide with a provisional figure of the total cost required. What can be made available is the amount of money that will be put at the service of the organisation and accompanying measures of the Plan:

Institution	Support provided in Euro (2001 and 2002)
District of Fürstenfeldbruck	32,211
Municipal Savings Bank Fürstenfeldbruck, BRUCKER LAND e.V., the Local Utility Fürstenfeldbruck and the Regional Gas Supplier Erdgas Südbayern	6,136
Communities of the district	9,175
TOTAL	47,522

Additionally, the participating craftsmen and companies of the district will pay a premium of 2% on the turnover resulting from activities within the energy turn process.

Management

ZIEL 21, being established as an association for the management of the Plan, agglutinates the most outstanding social-economic players of the district, most of which have been co-operating with the public authorities since the launching of the Local Agenda 21 in 1993. ZIEL 21 counts on a General Assembly, a Board and an Advisory Council.

Monitoring

ZIEL 21 is responsible for the preparation of annual reports in which the progress of the Plan are carefully explained. Nevertheless, new and more comprehensive monitoring measures are foreseen once the Plan be fully operative. These include an inter-alia CO_2 barometer located in the municipality of Fürstenfeldbruck, an internet portal related to the energy turn process and a periodical exercise of benchmarking and comparison with other regions.

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Sector: RES
Country: United Kingdom
Location: County of Powys

POWYS'

renewable energy development plan

Background

Renewable electricity production has a long history in Powys with hydropower commonplace prior to the introduction of the national grid. Water wheels for mechanical power go back much further and the use of wood and charcoal for heating are, of course, almost as old as man.

Technical innovation has introduced a relatively new form of power production through large-scale wind turbines, which are now capable of producing more than enough electricity for every home in the County. The local authorities, in the context of an attractive and much valued landscape, consider this substantial wind power.

However, other technologies that are not as well established may need the assistance of the promoters to see their generalisation: wood chip (and pellets) has a huge potential for heating and is best used local to its production; there is scope for small and micro scale hydro, solar electricity production and water heating.

In the light of the above-mentioned circumstances, and taking into account that the region pursues a strong social-economic development path, an Energy Agency covering the County was established in 2000, which undertook an ambitious workprogramme aimed at the design and implementation of a renewable energy development plan for the period 2000-2010.

Promoters

Powys County Council

Parties involved

- Dyfi Eco Valley Partnership
- Welsh Development Agency
- Wales OPET Cymru

Staff accommodation at the inspirational Centre for Alternative Technology, Machynleth, Powys

Objectives/Actions

The setting of quantified objectives in the United Kingdom faces substantial difficulties, due to the lack of accurate energy consumption baseline data at the local level. However, existing estimate point to the existence of approximately 49,000 homes in the County, which allowed the technicians of the Energy Agency to establish a series of objectives and targets in the different areas. These were the following:

- **5,000 m² of solar water collectors.**
- **100 kWp of PV installations.**
- **20 new hydro schemes.**
- **2 schools heated by woodfuel.**
- **2 woodfuel district heating schemes.**
- **50 individual homes heated through woodchip or pellets.**
- **2 other large non-domestic woodfuel heating systems.**
- **5 new anaerobic digesters.**
- **Facilitating community participation** in wind power developments.
- **Providing**, through the Energy Agency, **a *forum* for the dissemination of information** on all aspects of renewable energy and energy efficiency.
- **Establishing a database for energy use** and resources in the County.

The Plan includes the implementation of a number of pilot actions in the Dyfi Valley. This area represents only a small proportion of the County but also spans two other counties (Ceredigion and Gwynedd). By thematic areas, the following activities have been prepared.

Solar

The Energy Agency will support the "solar club programme", being run by the Dyfi Eco-Valley Partnership, and looks to establish new community based partnerships that could create their own solar clubs. In addition, there are opportunities for housing associations to utilise Central Government subsidies for multiple solar thermal installations. The publicity of the PV installations and those recently installed by the railway company seek to encourage other businesses to utilise the technology, particularly in locations remote

POWYS' renewable energy development plan

from the power supply grid. The County Council itself will seek out opportunities for the utilisation of PV technology, particularly at schools and at roadside locations where a new power source is required.

Small hydro

As already done at Dyfi Eco-Valley, local partnerships are expected to develop community owned small-scale hydro installations (around 20, according to initial estimates). This would probably require the establishment of a grant support mechanism, being the Objective 2 of the European Structural Funds an optimal candidate.

Biomass

The Agency will seek out opportunities to either replace existing, old and inefficient school heating systems, or to install woodfuel heating systems. As a complement, the Agency will establish a pilot wood fuelled district heating system.

Anaerobic digestion

Another area of work is that related to the establishment of a sewage treatment work on dairy and/or pig farms. The Powys Energy Agency, in association with the Marches Energy Agency, will create opportunities and funding to see the potential realised.

Rational use of energy

Finally, the Agency is to develop specific workprogrammes for every sector of society. This may, if appropriate, include combined heat and power production using non-renewable fuel sources.

Results

It is intended that the expansion of the utilisation of renewable energy technologies in the County will provide outstanding results, for instance:

- Produce sufficient renewable energy as to match the total energy consumption across the County.
- Familiarise the public with renewable energy technologies.
- Establish Mid Wales as a UK model for RES.
- Establish Powys as a base for RE Companies and RES expertise.
- Reinforce the Dyfi Valley and Powys as "Inspirational Communities" on a European level.
- Reduce air pollution and improve woodland management.

Financial resources

The Energy Agency is part-funded under the SAVE II Programme of the European Commission. In addition, it has achieved additional resources from the County Council, energy supply companies, the National Assembly for Wales and the private sector funding.

The table below summarises the estimated costs of the programme (2000-2010 period):

Action	Cost in Euro
Establish an Energy Agency	350,000
5,000 solar thermal water collectors	2,700,000
100 kWp PV	625,000
20 hydro schemes	1,800,000
Biomass	1,100,000
Anaerobic digestion	540,000
Energy base data	30,000
TOTAL	7,145,000

Management

The programme is being managed by the Powys Energy Agency in partnership with the Department of Planning, Economic Development and Regeneration of the County Council.

Monitoring

The Board of Directors of the Powys Energy Agency monitors progress towards targets and in respect of the actions and the County Council's Local Agenda 21 Working Party, and will have at their disposal the assistance of the Advisory Group to the Energy Agency. Indicators of performance will be established once the base data of energy production and consumption within the County has been defined.

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Sector: RES
Country: Spain
Location: Province of Huelva

RESUELVA

renewable energy sources in the province of Huelva

Background

The enormous potential of energy from renewable sources has been highlighted by a range of studies. One such energy of particular interest is solar energy. This is especially so in the province of Huelva, which receives the greatest amount of sunshine of any part of Spain. With a rapidly growing agrofoods sector, Huelva also has significant biomass resources.

The foregoing considerations have played a decisive role in the setting up of the Renewable Energy Action Programme for the Province of Huelva, which consists of a number of complementary parallel lines of work:

1. Drafting and implementing a Strategic Energy Plan.
2. Setting up of a provincial energy agency.
3. Implementing an integral environmental impact reduction programme.
4. Setting up a line of finance for energy-related projects involving local SMEs.
5. Presentation of a variety of RES projects to the EC's calls for proposals.

In total, over 31.5 million euros have been set aside for a period of seven years (2000-2006). At the end of this period, energy consumption will have been reduced by 20%, CO_2 emissions should decrease 100 tonnes a year and consumption of energy from renewable sources will have risen to account for 10% of the total.

Promoters

Provincial Authority of Huelva

Parties involved

- Banco de Crédito Local (Local bank specialised in local credits)
- Banco Bilbao Vizcaya – Argentaria (National bank)
- University of Huelva
- Adhecon SL

Agencia Provincial de la Energía de Huelva

Logo of the Provincial Energy Agency in Huelva

Objectives/Actions

The objectives of the Renewable Energy Action Plan for the Province of Huelva are:

- **Adequate planning** of the actions in order to reach consensus and facilitate the implementation of the envisaged initiatives.
- **Involvement of more than 80% of municipalities** in the province.
- **A study of the possibilities for implementation of renewable energy** in sectors of the economy of the Huelva region, analysing their potential and the feasibility of installations.
- Achievement of a **20% reduction in the energy bill** through promoting and fostering energy saving and efficiency both in municipal buildings and in the private sector.
- **Substitution** of 10% of the conventional energy supplies used with energy from renewable sources.
- **Reduction of CO_2 emissions** by an average of 100 tonnes a year in each municipality in the province with respect to current volumes.
- **Raising the general population's awareness** and training specialist technicians in both the use of renewable energy resources and energy efficiency and saving measures.

The measures that have been designed and which are currently at the implementation phase with a view to achieving the objectives listed above are:

Strategic Energy Plan for the Province of Huelva

The Plan, which is being implemented over the period 2000 to 2006, encompasses a comprehensive study of the potential for the use of various renewable energy resources in the province of Huelva. On the basis of this study, the plan's organizers will set out the most appropriate measures to promote the use of renewable energy sources and encourage the rational use of energy.

The Plan places special emphasis on demonstration activities and example installations. Moreover, it is responsible for the drafting and implementation of a comprehensive energy saving plan for municipal buildings.

RESUELVA, renewable energy sources in the province of Huelva

Programme to reduce the costs and environmental impact of energy by energy saving, modernising facilities and reducing emissions

Under an agreement between the Provincial Government, a financial institution and a firm of technical advisors, third-party financing will be provided to projects enabling energy bills to be cut through a reduction in overall energy usage.

The first phase of the project will include an official public presentation, accompanied by a launch campaign in all the municipalities of the province so as to ensure their involvement. Then an energy analysis of the main municipal systems (street, building and floodlighting) will be conducted and the potential for the use of renewable sources of energy examined. Following this, an integral optimization project for each municipality will be initiated, which will be followed-up and evaluated by a specifically created system. The project will be complemented with a training plan for specialist technicians.

Funding programme for energy projects involving local SMEs

In parallel with the cost cutting programme, the Provincial Government will sign an agreement with another financial institution to enable SMEs to access the third-party finance mechanism for energy saving projects and the installation of renewable energy technologies.

Presentation of renewable energy projects to the European Commission

The "Enersur, Energías Renovables de Huelva" project was recently presented to DG TREN's ALTENER 2001 Programme. The project has five international and ten national partners and focuses on the potential of RES in the province, the drafting of a number of user manuals and the planning of the specific projects found to be viable.

Results

The results obtained so far by the Action Programme include:

- Drafting of a strategic plan as a guiding axis for future work.
- Setting up of Huelva's Provincial Energy Agency.
- Signing of a collaboration agreement between the Huelva Provincial Government and the Banco de Crédito Local for the implementation of the comprehensive cost and environmental impact reduction programme.
- Signing of a collaboration agreement between the Huelva Provincial Government and the BBVA to enable access to a special line of funding for SMEs in Huelva.

As mentioned above, the Action Programme will have a number of extremely effects for the environment, such as a 20% reduction in energy consumption, a significant decrease in CO_2 emissions and an increase in the share of energy production from RES to 10%.

Financial resources

Action	Cost in Euro
Feasibility study on the potential of RES	3,846,477
Promotion of the use of RES	11,329,078
Promotion of the use of RUE technologies	3,125,263
Integral Plan for Energy Saving in Municipal Public Buildings	6,641,184
Improvement of the security of energy supply	6,611,133
TOTAL	31,553,135

Management

The Provincial Government of Huelva is the promoter of the Action Plan and so has ultimate responsibility for it. The programme will be run through the Provincial Energy Agency of the Province of Huelva.

The programme promoter will be responsible for ensuring compliance with the Strategic Plan and the ensemble of applicable community, national, regional and local legislation. It will also ensure guidelines relating to protected areas are observed in the measures implemented in the Programme.

Monitoring

The follow-up and evaluation tasks will be carried out periodically by the Image and Quality Evaluation Department of the Provincial Government's Local Development and Employment Promotion Area. In order to ensure its independence of judgement this department will not participate in the management of the project. After each evaluation a quarterly progress report will be issued (which will include physical, financial and impact indicators), an annual report with the revision and, if appropriate a redefinition of the Programme's objectives.

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Sector: Wind
Country: Spain
Location: Region of Valencia

WIND POWER PLAN

for the Valencia Region

Background

The region of Valencia is located on the eastern Mediterranean coast of Spain. It has a population of four million people and generates 10% of the country's GDP. At present, its energy consumption accounts for 8.6% of the national total, and is subject to considerable seasonal variation due to the influence of tourism.

Valencia supplies very little of the energy that it consumes (only 2.9%) and thus the question of security of supply is an important one. As the region does not posses any fossil fuel reserves, current policies aim to increase the level of self-supply by encouraging the production of electricity through RES, especially wind, solar photovoltaic and biomass. By 2010, it is estimated that between 50 and 70% of all energy obtained from RES will come from wind plants. The Drafting of a wind Energy Plan is to contribute towards these objetives.

Promoters

Regional Government of Valencia

Parties involved

- Regional Department of Industry and Trade
- Regional Government of Environment
- Regional Department of Public Infrastructure, Urban Development and Transports
- Private companies will also be involved in the Plan once the concessions are approved

Wind Park in La Olla de Buñuel, Valencia

Objectives/Actions

The Wind Power Plan, launched in December 1999, aims at meeting the region's current needs by obtaining energy from RES and thus making it more self-sufficient. The Plan also seeks to contribute to the improvement of the social, economic and environmental conditions of many inland and less developed areas of the region.

The specific objectives of the Plan are:

- Contribution to the objectives of the European Commission White Paper: **12% of energy consumption from RES by 2010.**
- **Energy diversification** and greater self-sufficiency.
- **Job creation** through industrial and economic development (around 20,000 direct jobs and 2,000 jobs in related activities).
- Installation of a **modern and innovative technological industry.**
- The development and **improvement of electricity infrastructure inland.**
- **Reduction of CO_2 emissions.**
- **Income generation** from taxes in rural areas.
- **Environmental preservation**, particularly of woods and forests.

The Plan will be implemented in a number of successive phases, of which the first two are already operative.

Phase 1: Identification of the most suitable areas

A number of previous studies of climate and geography, and a campaign of measurements of predominant wind streams carried out by environmental experts allowed to define the most suitable potential areas to set up wind farms to produce electricity.

WIND POWER PLAN for the Valencia Region

Phase 2: Definition of objectives

The second phase of the Plan sets out the objectives of generating wind energy and how they can be achieved with the help of public and private organisations related to the sector.

So far the Wind Power Plan has defined a total of 15 areas suitable for the exploitation of wind energy. This will imply the installation of 2,720 wind generators with a total capacity of 1,695 MW.

The Plan places special emphasis on minimizing potential negative environmental externalities: wind farms will be built in the chosen areas, but have to be at least 1 km away from any built up area or building land. The number of wind generators to be installed in each area varies ranges from 120 to 270, according to the zone. Finally, the amount of power to be generated in each individual farm varies from 75 and 145 MW.

Additionally, and given the fact that the success of the Plan will depend, to a great extent, on the ability of the promoters to attract private investments, the regional authorities are putting a special effort in achieving the consensus of both public and private institutions. Currently, a great number of promoters, grouped in seventeen consortia, are applying to the call for projects to participate in the Wind Plan.

The Plan should be fully operational by the year 2010.

Results

By the year 2010, and according to the objectives stated in the first phase of the Plan, wind farms will be capable of producing around 1,700 MW for electricity purposes.

The energy changes planned will eliminate 3.2 Million tons of CO_2, 57,000 tons of SO_2 and 8,500 of NOx annually. From the environmental point of view, the regenerating effect on the atmosphere will be equivalent to having an extra 160 Million trees in the region. If energy production from the wind farms attains its maximum level, the consumption of oil will decrease by 400,000 tons a year.

No less important, the creation of wind farms will also have considerable favourable impacts from the social and economic point of view: in fact, the construction and operation of the wind farms may constitute an alternative for many towns and villages which have not benefited from other forms of development. Different studies have pointed to the creation of around 20,000 direct jobs related to manufacturing, assembling and erection of the equipment and other 2,000 jobs in activities of maintenance and operation.

Financial resources

The Wind Power Plan of the Region of Valencia is set to generate investment worth around 1,202 Million Euro (200,000 Million pesetas). As a result of the economic profits in other wind farms in operation, no additional public funds are required. Consequently, the pay-back period of these investments makes them attractive to private companies considering participating.

Management

The Energy Agency of Valencia, which depends on the Regional Dept. of Industry and Trade of the Generalitat Valenciana, will follow on the different phases and actions, also preparing periodical reports.

Monitoring

The regional departments involved in the Plan will need to set out the procedures required to follow up the different activities in order to detect any anomalies which may occur. The Regional Department of Industry and Trade will be responsible for centralising all the relevant information and subsequently preparing periodic reports.

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4

Renewable Energy Partnerships in Cities

Sector: RES
Country: Spain
Location: Municipality of Ecija

ECIJA

sun city

Background

Since ancient times the city of Ecija has been associated with sun and warmth thanks to the effect of the mountainous geography of the valley in which it is situated.

Situated in the fertile Genil valley between Cordoba and Seville, the area is rich in agriculture, particularly in olive oil, cereals and timber, which produces significant biomass resources but is currently under threat of destruction.

The "Ecija, Ciudad del Sol" (Ecija, Sun City) consortium was set up in order to implement a plan for the integration of renewable energy sources in Ecija. The aim is to exploit synergies in the use of existing energy resources, to tackle the area's waste-disposal problems, and to promote energy saving. The plan includes measures in various fields and sets the quantitative targets to be met by 2004.

Promoters

Municipality of Ecija

Parties involved

- IDAE
- SODEAN
- SEDESA (Local Society for Economic Development)
- ADESA (Water and Energy Company in Ecija)
- INTA (National Institute for Aerospace Technologies)
- IAER (Andalusian Institute for the Promotion of Renewable Energies)
- FAECA (Andalusian Federation of Rural Co-operatives)
- CENTER (Centre for New Energy Technologies)
- APROCOM (Provincial Federation of Merchants)
- CEPE (Association of Businessmen and Professionals from Ecija)
- Local businesses

Installation of solar thermal panels for the production of sanitary hot water in the sport pavillion of Ecija

Objectives/Actions

The "Ecija, Ciudad del Sol" project seeks to achieve three major goals:

1. **Promoting renewable sources of energy**, in accordance with the "White Paper for a Community Strategy and Action Plan", and in line with the Campaign for Take-Off promoted by the European Commission.
2. **Environment protection**, through the reduction of the environmental impact of the use of energy and promotion of energy efficiency measures.
3. **Increasing the city's level of energy self-sufficiency** through energy-saving measures and by using renewable sources of energy.

The actions enabling these goals to be met are:

General and horizontal actions

A series of dissemination activities are envisaged, with the support of the Local Energy Agency, together with information campaigns. To these should be added the demonstration activities in colleges and other centres of education, and short conferences being run for businessmen, professionals, builders, developers and the general public.

In addition, campaigns for the training of specialist technicians in renewable sources of energy and consultancy for architects, developers, builders and other groups.

Solar thermal

A key part of the project is the inclusion of renewable sources of energy in the General Urban Plan, for example by drafting and implementing planning regulations governing the mandatory installation of solar panels for the production of domestic hot water in all buildings requiring planning permission.

Municipal buildings will also be fitted with solar thermal panels for the production of hot water, in particular those buildings with considerable consumption levels, such as hospitals, sports centres, swimming pools, football pitches, etc.

ECIJA, sun city

Solar photovoltaic

The installation of six photovoltaic systems in municipal buildings is planned. These systems will be connected to the grid and will have an output of 5kw each. Their main purpose is to serve as a demonstration for the general public.

Photovoltaic systems will be installed at a number of companies located in the Renewable Energy Technology Park. Installing systems of this kind will be a condition for access to financial support for companies wishing to locate in the Technology Park.

Finally, industrial scale grid-connected photovoltaic plants will be built to exploit the municipality's solar radiation potential.

Biomass

A number of studies of the potential for biomass resources in the area are being planned. These will be followed by feasibility studies, and then the design and implementation of a biomass-powered electricity generating plant.

Energy saving and efficiency

This heading covers measures such as an energy audit on public buildings, drafting of an energy optimization and efficiency plan and the setting up of a local energy agency.

Results

The time horizon for the plan has been set at 2004, by which time, according to the forecasts, the following targets should have been met:

- 400 KW_p from photovoltaic systems.
- 4,000 m^2 of solar thermal panels.
- 7 MW thermal power from biomass energy.
- 5 MW generated by biogas facilities.
- 1.12 MW generated by micro-hydroelectric plants.
- Greater awareness among the local population, professionals and public authorities on the advantages of RES.

Expected energy balance in 2004, based on the implementation of the Integration Plan:

RE source	Proposed capacity	Toe avoided annually	CO_2 emission avoided p.a.
Solar photovoltaic	400 KW	61.92	229.10
Solar thermal	4,000 m^2	275.20	1,018.24
Biomass	7 Mwp	4,816	17,819.20
Biogas	5 Mwp	3,440	12,728
Micro-hydroelectric	1.12 Mwp	564.05	2,086.76
TOTAL	121,800	10,474.80	38,756.76

Financial resources

The programme is receiving both public and private financial support. This support is coming from the local authorities, regional and national government, the European Commission and companies in the area. Management and monitoring activities will be paid for by the Écija Local Energy Agency (*Agencia Local de la Energía de Écija*).

Management

The project is being managed by the Ecija Local Energy Agency.

Monitoring

The Ecija Local Energy Agency is also in charge of monitoring of the project.

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5

Renewable Energy Partnerships on Islands

Sector: STH
Country: Spain
Location: Islands throughout the world

BIOSPHERE HOTELS

renewable energies to build sustainable tourism

Background

The introduction of measures aimed at the rational use of energy and the integration of renewable energy sources in buildings has become a strategic priority in the tourist sector, especially in high value-added segments, or in locations that are especially vulnerable to environmental stress, such as islands or protected areas.

In response to this sensitivity, the Institute of Responsible Tourism (IRT) was created after the World Conference on Sustainable Tourism in 1995. It is an independent agency that has been set up to implement sustainable development actions and programmes in the field of tourist industry.

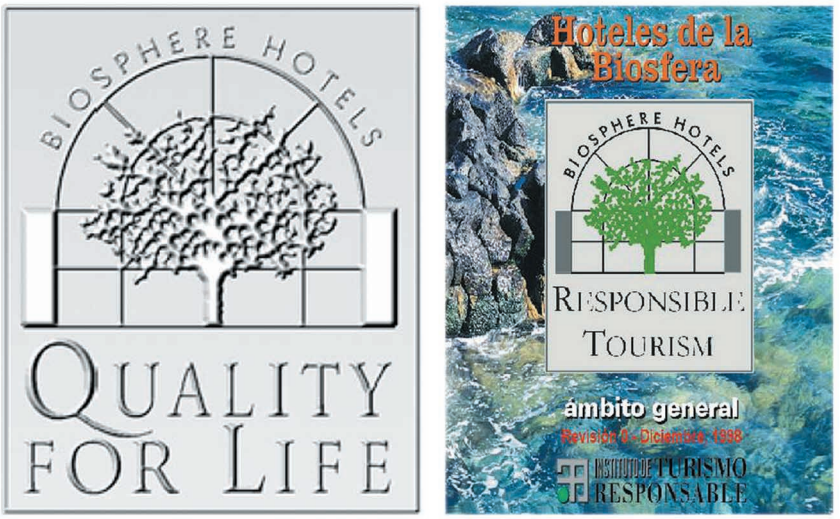
The ITR promotes models of tourism that actively contribute to maintaining and protecting the cultural and natural assets of tourist destinations. This includes the introduction of more efficient energy systems in hotels and the integration of renewable energy sources (in particular, solar thermal) in buildings, but also actions in other environmental fields, such as waste minimisation, limitation of noise and disturbance, reduction of water consumption and integration of buildings into the landscape, to put a few examples.

Promoter

ITR (Institute of Responsible Tourism)

Parties involved

- UNESCO
- Technological Institute of the Canary Islands
- ASOLAN (Association of Managers of Hotels and Apartments of Lanzarote)
- Barceló Chain of Hotels and Resorts



The responsible tourism system RES ecolabels

Objectives/Actions

The final objective of IRT actions is to **promote sustainable development in the tourism sector**, putting a special emphasis in the utilisation of endogenous skills and resources. This can be achieved through the generalisation of common standards that take into account environmental values. Such standards ensure customers that the technologies used in the construction and operation of the hotel are as environmentally friendly as possible.

Two different (but interconnected) initiatives, co-ordinated by the IRT, can be cited as relevant examples: the responsible tourism system and the international biosphere hotels network.

The responsible tourism system

The responsible tourism system is an independent system of certification that publicly recognises the environmental quality of the management, technological innovation and services offered in tourist establishments.

The responsible tourism system meets a need for external and visible recognition to distinguish the efforts made by hotels. The recognition is given by an independent agency, the IRT, which certifies and guarantees an establishment's commitment to responsible tourism practices, with the renewable energy sources as the best tool for continual improvement.

The system is to have an influence on all key aspects concerning eco-efficiency and the revaluation of the cultural heritage in tourist establishments, and thus it embraces objectives along several environmental (water consumption, waste production and treatment, landscape valorisation, etc.) and social vectors (respect the local culture, commitments to local suppliers, etc.).

The standards are not irrespective of the place where the hotel is located, and thus they adapt to specific local conditions placing more emphasis on bio-diversity, for instance, in sensitive areas; or architectural heritage in ancient sites.

BIOSPHERE HOTELS, renewable energies to build sustainable tourism

Once the external evaluation has taken place (carried out by the IRT) and the excellence of the building has been proved, a label with the denomination of "Biosphere Hotels" is awarded. The label is backed by UNESCO and constitutes the first international certification system that explicitly includes the use of renewable energy sources as a requirement for it to be granted.

The "Biosphere Hotels" label has basically been introduced on islands, the idea first being tried in Lanzarote. This was followed by other islands such as Guadeloupe, Galapagos, Tenerife, Minorca and Gran Canaria. Between 1998 and 2000, more than 25 hotels in island regions joined the system. The target is to reach 100 accreditations by 2003.

The international biosphere hotels network

The International Biosphere Hotels Network is an organisation that promotes the co-ordination and exchange of experiences between its members in the framework of the responsible tourism system. The network profits from the experience gained thanks to the certification system and disseminates the most advantageous experience. The implementation of renewable energy sources is one of its main areas of interest.

The case of Lanzarote, for instance, constitutes a model to follow: since 1998, the total area of solar panels in hotels has risen to 6,500 m^2, plus 1,500 m^2 already planned and that will soon be operational. The objective for 2004 is to achieve 20,000 m^2 of solar panels. In addition, actions regarding the introduction of photovoltaic systems and bioclimatic solutions are being promoted.

Complementary measures

In order to facilitate the transfer of experiences and the dissemination of a sustainable tourism culture, the IRT carries out and promotes a whole series of complementary activities and accompanying measures. Some of these consist of the organisation of international seminars, workshops and meetings with a view to disseminating successful initiatives and especially the experiences that emerge from the International Biosphere Hotels Network.

Results

In terms of energy efficiency, the application of the measures required by the standards resulted in a saving of 2.7 GWh of the 14.6 GWh consumed by the initial group of hotels that joined the responsible tourism system. The target is to double this growth rate by 2004, reaching 35% of the total hotel places that joined in the initiative, with a minimum saving results of about 10 GWh.

Favourable environmental impact

The effect on the environment achieved by the hotels that are members of the network has been evident in all cases. The strategy towards 100% RES pursued by the certification system naturally provokes a positive impact on the local environment, as well as an improvement in its supply strategy.

Financial resources

Action	Cost in Euro
Feasibility studies (Biosphere hotels)	540,000
Implementation phase (tourism)	7,800
Annual monitoring/ management	7,000
Specific projects	9,000
TOTAL	563,800

Management

The project is being managed by the ITR, with the support of the Technological Institute of the Canary Islands.

In relation to the international biosphere hotels network and the responsible tourism system, it is worth mentioning the tasks that are being carried out by the International Council of Biosphere Hotels and by the Technical Evaluation Committee. The first is charged of the external promotion of successful experiences while the second guarantees the quality of the certificates awarded.

Monitoring

The verification of the requirements is audited not only when the label is conferred, but also periodically, every two years, in order to assess the advances achieved and other improvements that may have taken place. This system is applied both in hotel establishments and in tourist destinations.

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Sector: RES
Country: France
Location: Islands throughout the world

INSULA

towards islands 100% RES

Background

Insula - The International Scientific Council for Island Development - was created in 1989 as a non-profit making, non-governmental organisation and works in association with UNESCO and other international bodies.

The aims of Insula are to contribute to the economic, technological, social and cultural progress of islands throughout the world, as well as to the protection of their environment. Insula seeks to facilitate technical and scientific co-operation in all fields related with sustainable island development and places special emphasis on renewable energies, clean water production and alternative transports for islands.

During the last ten years, Insula has been fostering inter-island co-operation initiatives and campaigns aimed at promoting renewable energy sources in island territories. The most outstanding actions are "Island 2010", campaign of promotion and replication of 100% RES projects in European islands; and "Tech-Tourist Island Forum", for the co-operation and technological transfer related to RES in island tourist development.

Promoter

Insula (International Scientific Council for Island Development)

Parties involved

- NTUA-RENES, Greece
- AREAM, Madeira
- ANCIM, Italy
- ITR, Spain
- EREC, Belgium
- FED, Denmark
- ICAEN, Spain
- ITER, Spain

Official image of the "Island 2010 Campaign"

Objectives/Actions

Insula is a dynamic institution, which designs and develops many initiatives at international level that bring together numerous partners from the public and private sector (universities, R&D institutes, European networks, national, regional and local authorities). The most important are the following:

Island 2010 Initiative

During 2000, Insula launched the "Island 2010 Campaign", whose aim is to promote, identify and consolidate the strategy "Towards 100% Renewable Energy Sources Supply" in island territories.

This project has resulted from the progressive awareness of the social-economic actors on the crucial role that the energy sector plays in insular territories, and on the need to implement a strategy that avoids improvisation and short-term solutions, which can damage fragile island territories and economies. Thus "Island 2010 initiative" will make a strong contribution to consolidating, in the medium term, the preparation of an ambitious strategy for the enhancement of RES in the island territories of the European Union.

The initiative has resulted in the setting up of the "Island 2010 network" as a co-operation framework for the promotion of RES on islands. Other objectives to be achieved through this project include the dissemination, among the members involved, of 100% RES-based technological solutions especially suitable for island territories; the reinforcement of information channels on RES between the islands; the active involvement of the islands governments in the programming of 100% strategies and the dissemination of new clean transport solutions.

Tourism Tech Island Forum

The "Tourist Tech Island Forum", set up in 2001, reflects the preponderant role (in economic and social terms) that tourist activities play in many islands and the possible applications that energy technologies could have on them.

INSULA, towards islands 100% RES

The Forum will seek to determine and disseminate the state of the art of eco-efficiency and RES technologies among islands' tourist sector, to promote strategic alliances and to identify key priority areas. As in the case of the "Islands 2010 Initiative", the involvement of all decision-makers is crucial, including hotel managers, local authorities, tour operators, manufacturers, service suppliers, consultants, engineers and architects, customers, etc. These all need to form part of the initiative in order to give the results legitimacy and ensure success.

The Forum will identify demonstration projects, programmes and initiatives that could be replicated in insular territories, also helping the exchange of experience between the partners involved. The material will be collated into a list of recommendations.

Clean water production for islands

The severe water shortage suffered by many islands has revived the debate on the best options to be used, among which desalination plants are one of the preferred options. This project aims at disseminating RES powered desalination methods, together with the identification of demonstration projects and initiatives.

Euro-Caribbean RES Forum

This project, which is due to run from 2001 to 2004, consists of setting up a system of co-operation and technology transfer on RES and RUE. The basic function of the Forum is to make information and results replication between Caribbean and European islands easier, to identify opportunities and projects within the region and, with the help of local governments, to facilitate the participation of the European industry in the energy sustainability strategy in the Caribbean.

Results

The projects described above are running or in the design phase. The most outstanding results achieved until now are the following:

- Creation of the Island 2010 Network.
- Drawing up of the European Island Agenda.
- Preparation of the Agreements of the Island Solar Summit of 1999.
- Virtual Campus – Renewable Energies for Islands.
- Conference on Sustainable Hotels for Sustainable Destinations.
- Design and distribution of several publications: EIO Newsletter, "Towards 100% RES" Island Strategy, the Water-Energy Binomial, etc.

Financial resources

Action	Cost in Euro
100% RES	1,900,000
RES-Tourism and Transport	1,200,000
Clean Water Production Campaign	400,000
TOTAL	3,500,000

Management

The different initiatives are co-ordinated by Insula, although individual actions usually count on the participation of many agents, such as:

- International Organisations (UNESCO, MaB, SIDS-UN, IHEI, WTO, IRT, etc.)
- Island Universities and I+D centres
- European Networks (OPET)
- Partners within each action (consortia – steering committee)
- Island Governments (Canary Islands, Sicily, Madeira, Hiiumaa, St. Lucia, etc.)

Monitoring

Insula prepares annual reports on the progress of the ongoing actions, to be addressed to the different co-operating organisations and partners.

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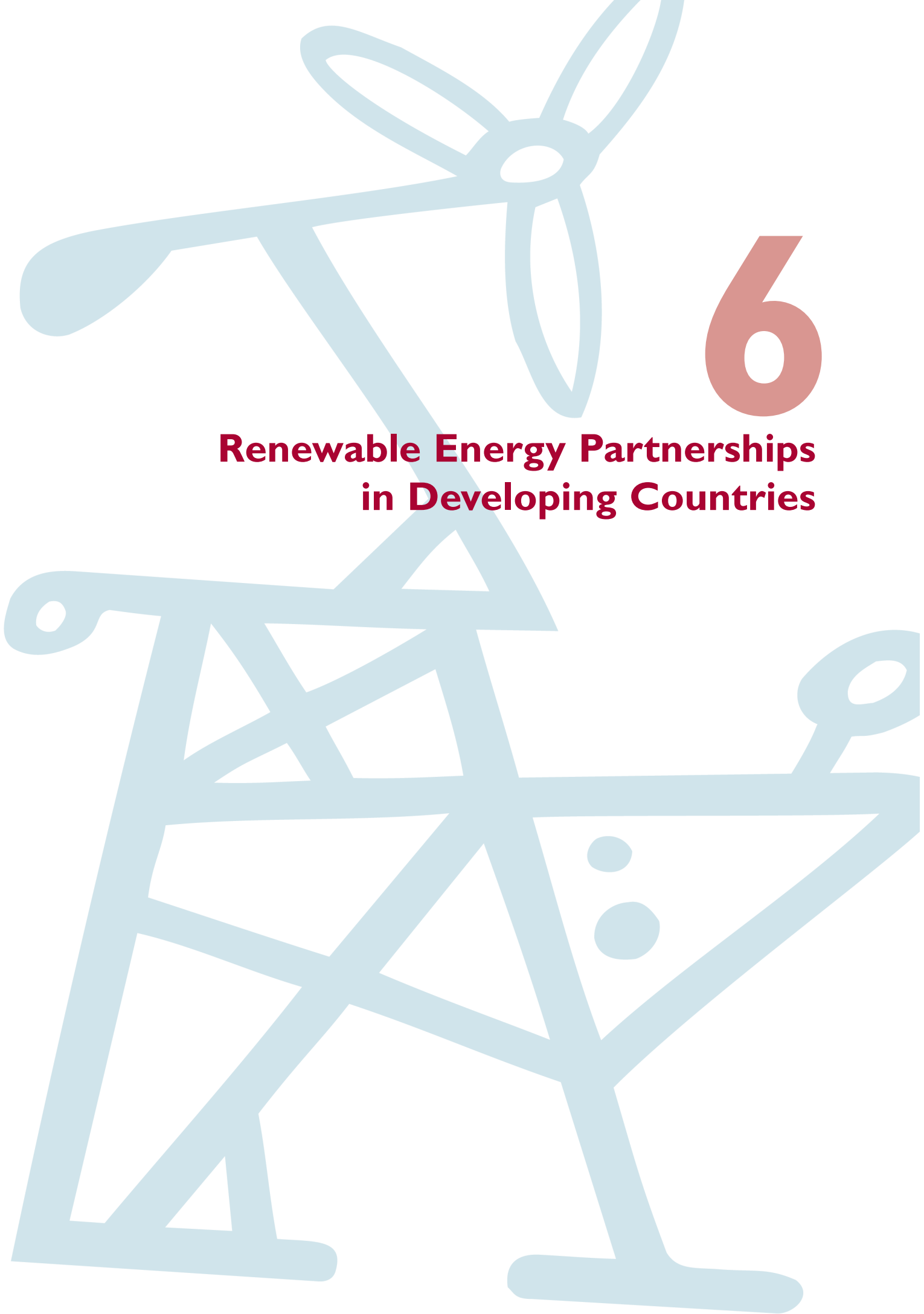
Virtual Campus for RES:
www.teleinsula.com/medis/vcre/



6

Renewable Energy Partnerships in Developing Countries

Sector: SPV
Country: France
Location: Rural areas of India

ASVIN

Programme: development and dissemination of solar energy systems for villages in the Himalayan Region of India

Background

The ASVIN Programme (***A**pplications **S**olaires dans les **V**illages reculés de l'**In**de*) is an Indo-French Scientific Co-operation Programme that emerged immediately after the Second World Conference on Solar Energy was held in Delhi in 1978. Its main aim is to promote solar technologies in developing countries, and during many years it has carried out projects related to rural electrification with RES, giving special importance to the participation of the local counterpart in their design, management and monitoring.

In 1998, a project called "Development and dissemination of solar energy systems for villages in the Himalayan Region of Indie" was launched, comprising the installation of decentralised solar PV lighting systems for households and PV pumping systems for agricultural and farming use (the main source of income of the local population). The project is being run in three remote areas of Indie, situated at an altitude between 1,200 and 1,500 metres, which makes their connection to the national grid tremendously expensive.

The European Commission is providing a subsidy for the purchase and installation of the PV modules and batteries, while the final users have to pay the costs of maintenance, repair and replacement of the components.

Promoter

ASVIN Programme

Parties involved

- Barefoot College
- European Commission
- Ministry of Non-Conventional Energy Sources of India
- Indian Renewable Development Agency
- Local communities of the areas selected

Young Sikkinese villager, trained under the "barefoot solar engineers" scheme, connecting a TV parabole to a solar panel

Objectives/Actions

The overall objective of the "development and dissemination…" programme is to **achieve the sustainable development of the local communities by means of setting up a reliable decentralised network that provides the necessary institutional, technical and financial support for the dissemination of solar energy.** In addition, it seeks to improve the standard of living of the local population by making available additional sources of income derived from the exploitation of RES.

Dissemination activities

One the main barriers being faced by rural communities in India is their lack of appropriate information and know-how in the RES field. The programme is therefore running specific dissemination activities, such as organising solar workshops (one per region) and bolstering links with regional and national centres for the exchange of experience.

Empowering local communities

The programme also seeks to actively involve local people by giving them specific responsibilities in the design and installation of the PV systems. The creation of village committees and the continuous discussion of the different options available with the citizens and local authorities have contributed to this aim.

Creating economic opportunities

Since the final users have to meet part of the cost of the systems installed, the programme intends to foster new economic activities related to RES and so advise stakeholders on possible additional applications of the systems that could generate additional income.

Emphasis is also placed on using the local workforce in the tasks of installation and maintenance: a number of unemployed young villagers are being trained to become what is known as "barefoot solar engineers", able to carry out all maintenance operations, either in the village or in the workshop, where spare parts are available.

ASVIN Programme: development and dissemination of solar energy systems for villages

Institutional involvement

The programme intends to attract human and economic resources from different bodies (national and international, public and private). To this end, the Ministry of Non-conventional Energy Sources and the Indian Renewable Development Agency were approached and have given more economic resources with which the number of PV systems will multiply by 3.7 in comparison with the initial estimates.

The table below shows the phases in which the programme has been structured.

Actions	Level of achievement
Phase 1: Planning phase • Selection of the villages to benefit from the operation and initial baseline survey • Intensive training of the programme staff • Definition of the project strategy in each of the villages selected, taking into account environmental, institutional, social and economic factors • Discussion of the strategies with the local groups and creation of village committees • Signature of a formal agreement between ASVIN and the local counterpart the Barefoot College (Tilonia, Rajasthan) containing the commitments (also financial) from both sides • Organisation of a solar workshop per region • Carrying out of the "Barefoot Solar Engineer" Programme • Assessment to the local population on additional applications of RES that could constitute an additional source of income	All completed
Phase 2: Implementation phase • Procurement and/ or fabrication of PV systems • Installation of PV systems for lighting and housing • Search for additional support from the National Government of India • Signature of an industrial collaboration with a Rajasthan based-manufacturer	80% completed
Phase 3: Dissemination phase • Discussion with local partners and with regional/ national authorities • Organisation of a solar workshop per region (see phase 1)	50% completed

Results

- One PV grinding mill.
- Several water mills.
- Several PV spinning wheel and carding machines.
- One solar passive drying room and at least five solar water heaters for a wool processing centre in Kumaon.
- One PV powered telephone-fax booth and one Internet centre in the village of Sikkim.
- PV lighting systems for 1,625 households (1,104 have already been completed).
- 33 unemployed young people have become "barefoot solar engineers".

Financial resources

Source of finance	Allocation in Euro
European Commission (EU Programme)	940,950
Barefoot College	142,760
Other public funding	155,000
External financing (soft loans)	145,000
Single payback period (loan repayment of 10 years)	166,250

Management

The programme is co-ordinated centrally by ASVIN and the Barefoot College, although a multiplicity of agents from the local level in each of the 30 villages selected are responsible for the day-to-day operation of the different activities.

Monitoring

External monitoring is carried out by consultants on an annual basis. The internal monitoring is the responsibility of the village committees, which meet regularly and then report to the ASVIN Programme and to the Barefoot College.

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Sector: RES
Country: France
Location: Developing countries

RENEWABLE ENERGIES

for sustainable development in developing countries

Background

Human development is strongly influenced by the availability of energy. At present, 2 Billion people (one-third of the world's population) rely almost completely on traditional energy sources and so are not able to take advantage of the opportunities that arise from new forms of energy. In addition, they suffer from adverse economic and environmental impacts.

Fortunately, the Southern countries are rich in natural energy sources (solar, hydraulic, wind, biomass) and their problems are more related to the lack of know-how and appropriate funding than to their natural and geographical conditions.

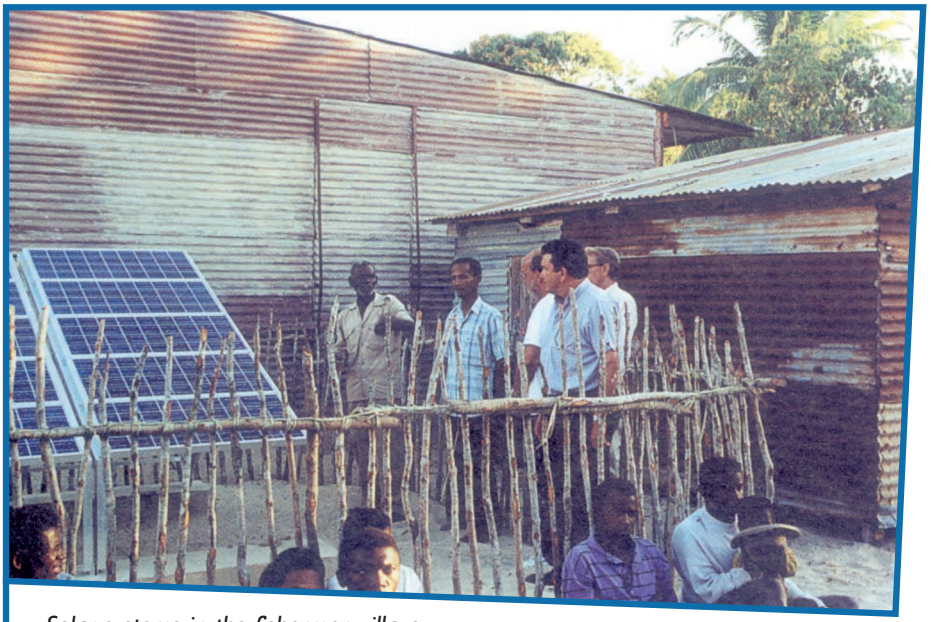
On these premises, the Non Governmental Organisation "Fondation Énergies pour le Monde" was created in 1990 and has since then provided support to thousands of people from 27 African and Asian countries. The Foundation relies on the exploitation of indigenous energy sources to raise the welfare of the population and thus seeks for individually-tailored solutions to the community's beneficiary of its programmes.

Promoters

FONDEM

Parties involved

- Observ'ER (Observatory of Renewable Energies)
- Caisse National du Crédit Agricole (National Bank for Agricultural Credit)
- Caisse des Dépôts et Consignations (National Bank for Deposits)
- Électricité de France (French electric company)
- Gaz de France (French gas company)
- Framatome
- Ministries of Home Affairs, of Industry, of Environment and of Foreign Affairs
- Ademe
- Total



Solar systems in the fishermen village of Betania (Madagascar)

Objectives/Actions

The Foundation's main goal is to improve the standard of living of destitute populations by supplying them with the energy that they are deprived of, in both country and suburban areas, via programmes carried out on every continent. Other objectives of the organisation are:

- **Inscribe the projects in the dynamics of sustainable development**, and favour strong involvement of the citizens concerned.
- **Favour technologies that respect the environment**, in their diversity and in an unbiased and objective way.
- **Ensure the continuation of the projects** undertaken, by empowering local communities and providing them with the appropriate training.

Technologies

The choice of technologies primarily depends upon the natural resource availability of the area and upon the state-of-the-art of the local technology. A good proportion of the interventions rely on solar energy, this source being particularly abundant in Southern developing countries, but examples can be found of the use of wind generators, micro-hydro and biomass.

Fields of action

The promotion of RES pursues the goal of accelerating economic and human development. Thus, they are applied in multiple fields: rural electrification (collective or individual systems); agriculture (water pumping, irrigation); health (supply of drinking water, lighting for health centres, refrigeration for vaccine conservation, heating of sanitary water for hospitals); education and training (lighting of schools, audio-visual equipment); daily life (sanitary hot water, craft industry dryers, biogas), etc.

Scale of the actions

A number of projects benefit large communities. Some examples refer to the electrification of more than 40 dispensaries in Senegal over a five-years period; the

installation of 400 photovoltaic systems in Vietnam spread over about 50 different villages or the creation of nine irrigated areas fed by solar pumps that will benefit around 15,000 people.

On a more modest scale, mini-actions try to respond to more isolated and limited demands, for instance the installation of refrigeration equipment in a dispensary in a Central African Republic and the lighting kits that were provided for a Brazilian village.

Training

Training of the local population forms an integral part of the Foundation's strategy, as a means to empower the local populations, increase their know-how and ensure the continuation of the projects undertaken. Given the bias that exists in most developing countries, training and awareness of women users are specially emphasised.

Complementary measures

In 1999, the Foundation created a site that makes it possible to reinforce the contact with partners of developing countries who can find, in this way, a means of access to information and communication that is particularly easy and inexpensive. It also presents the Foundation's activities and programmes.

The Scarabée Network also forms part of the dissemination effort of the Foundation, its main activities being the publication of a regular newsletter, the organisation of thematic workshops, the collection and publication of specialised data and statistics, etc. The network has also drawn up a country-by country inventory of competent companies, consulting firms and organisations in the field of decentralised and renewable energies, and has established an atlas of competence.

Results

At present, 125,360 Watts have been installed thanks to the programmes undertaken. These will benefit at least 300,000 people from 27 developing countries in the world.

Financial resources

The Foundation is supported by more than 10,000 private donors and actively seeks funding from national and international bodies working in the field of international co-operation.

The cost of the project is shared between the Foundation and the local counterpart; the percentage of participation of the beneficiaries is not fixed, and depends on several factors, but typically implies around 10% of the estimated costs and all running costs. Microcredit has also been developed for domestic and production users of energy.

Management

The Foundation groups together a small team in Paris, which is charged with the general co-ordination, definition of the strategy and lobbying of the international organisations that provide with funds.

In each project, the Foundation is contractually empowered by its local interlocutors, and exercises a role of delegated ownership: in collaboration with the owner and in close touch with the beneficiary population, it defines the technical, organisational and financial modalities of the project. A key part of the process is the provision of appropriate training of local actors and the transfer of competencies needed for operating the infrastructures.

Monitoring

The functioning of the NGO and its activities are regularly monitored by external auditors.

Contact

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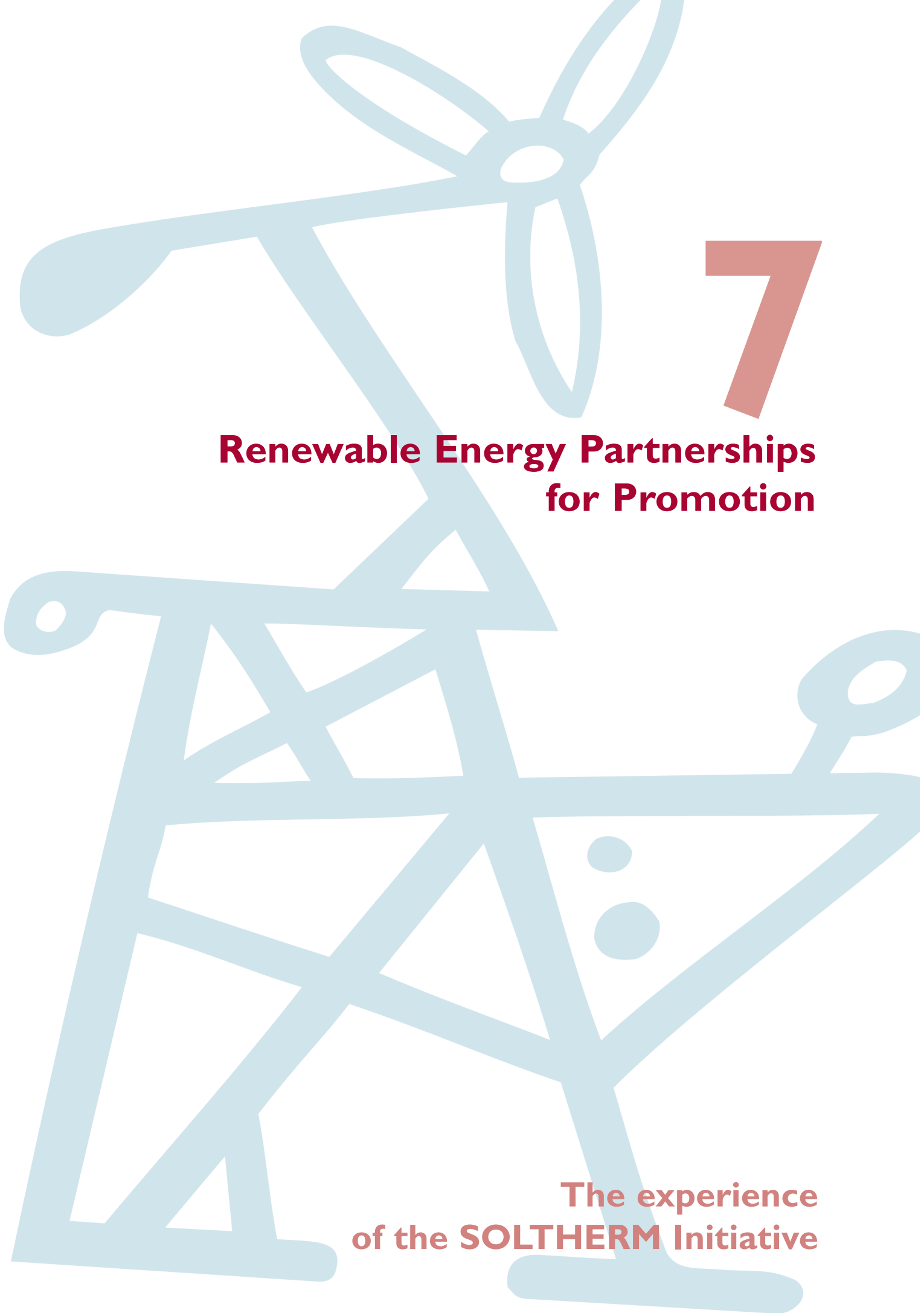


7

Renewable Energy Partnerships for Promotion

The experience of the SOLTHERM Initiative

Sector: STH — **Country: Netherlands** — **Location: EU and AC**

Solar panels in accessible flat roof

SOLTHERM

Europe Initiative

Background

At present, about 11 Million m^2 of solar collectors are installed in Europe, with an annual growth rate of 1 Million m^2. These figures are well below the objectives set in the European Commission "White Paper for a Community Strategy and Action Plan: Energy for the Future. Renewable Sources of Energy", which state that, by the year 2010, 100 Million m^2 panels should be fully operative. What is more, the varying collector sales growth rates per country and per year reflect the fact that the market development of solar thermal systems depends heavily on external factors like the existence of financial support and information campaigns.

The Soltherm Europe Initiative has thus been designed to catalyse a strong increase in market volume, to support the Campaign for Take-Off's goals in the field of solar thermal energy and to significantly contribute to meeting the EU's Kyoto targets for CO_2 emission reduction. By 2004, 15 m^2 of solar collectors should be installed in Europe according to the CTO, which is equivalent to solar water heating systems for 3 Million households.

The name of Soltherm was first used for the long-term regional market development strategic plan of the Walloon Region of Belgium. This project was one of the first large scale regional market plans integrating at the same time quality development of products and services and an overall approach to marketing and dissemination.

The Initiative was born in 2001 as a result of a collaboration agreement between more than 40 organisations, mostly from the EU Member States, but also from some accession countries (AC). It is centrally co-ordinated by Ecofys, an international renewable energy consultancy and research company, but involves a very wide range of bodies: energy agencies, government bodies, research centres, utilities, suppliers of energy technologies, installers, consultancies, etc. To make the Initiative a success, the activities carried out by the consortium have been divided into four levels:

- Stakeholders at EU level: being the European Commission the most important.
- Organising partners: these are organisations that can co-ordinate all activities in a country or for a specific market segment.
- Industry partners and installers: they will play a key role in all aspects related to quality and technology. Their input and participation is also needed in the information campaigns that will be launched.
- Facilitating partners: this category is comprised by organisations with goals consistent with the objectives of the Soltherm Initiative, such as the National Energy Agencies, NGOs, local authorities, etc. Information and financial, but also legal aspects (e.g. building permits) of Soltherm will have to be attuned to their plans and activities.

The Soltherm Initiative is presently in its starting phase, and new members are expected to join in in the next months. Until now, a publicity campaign has been launched in order to attract key partners, with special emphasis on industrialists and the internal organisation is being set up.

Promoter

Ecofys BV The Netherlands

SOLTHERM Europe Initiative

Objectives/Actions

The general objectives for the Soltherm Europe Initiative are:

1. To contribute substantially to the White Paper on RES (including the EU Campaign for Take-Off) with the short-term goal to catalyse **the implementation of 15 Million m² of solar thermal collector surface in 2004.**
2. **To become the platform for all parties contributing to** the realisation of the solar thermal targets of **the Campaign for Take-Off.**
3. **To create a co-operation framework** between sales & installation companies, info centres and awareness campaigns in all EU countries.

Launch

The Soltherm Initiative aims at increasing the awareness of customers as well as to mobilise the complete production and installation chain. Based on more than ten years experience, national campaigns will be started to boost the sales. In these campaigns, Soltherm Europe will especially involve the installers as they plan an important role in the promotion of solar water heaters. The Initiative has started to unfold its activities through the launch of the central web site (www.soltherm.org) and by concluding Renewable Energy Partnerships between its partners and the European Commission.

Guidelines for common operation mechanisms

One of the main fields of operation of Soltherm will be the development of a market analysis and the preparation of a common set of guidelines for system quality, the launch of a number of qualification schemes for sales & installation companies and the distribution of common working guidelines for the information, sales and installation process.

Success stories and promotional campaigns

Country-groups will be formed to design and implement National Plans including information and sales campaigns. Throughout the project, dissemination of the experiences will take place to stimulate and maximise the learning effects. The actions will be directed to solar water heaters both for single families and apartment buildings (mainly for renovation utilising the replacement of existing water heaters as a natural purchase moment, but when appropriate also for new buildings), solar space heating and other specific markets.

As most of the participants of the Initiatives enjoy a long of experience in the field of dissemination of energy technologies, a major role of Soltherm will be to catalyse this know-how and apply it to the new challenges.

SOLTHERM Europe Initiative

Local initiatives

Soltherm seeks to integrate existing initiatives to obtain maximal synergy. Examples of win-win integration that partners are working on are:

- Co-operation with ASTIG on the development of a suppliers' declaration on system quality based on the EN quality standards.
- Integration with the ESIF/ ASTIG Altener Solar Keymark project, co-ordinated by the Solar Energy Centre Denmark.
- Integration of the Altener Qualisol project, aiming at an improved and broadly disseminated solar installer qualification, including installation courses.
- Integration of IEA task 24 "solar procurement", which intends to create a sustainable, enlarged market for active solar water heating systems.
- Co-operation with the Mediterra Solar Campaign, which is enlarging on an action plan to stimulate the market for domestic solar thermal applications in France, Spain and Italy.
- Co-operation with the German DFS, for example on the follow-up of the Solar Na Klar campaign.
- Co-operation with the Government of Wallonian parts of Belgium in the framework of their Soltherm programme, in which already many elements of the Soltherm Initiative are incorporated.
- Integration of the Altener Solhas project for the development of market strategies targeted at housing associations in Europe.

Transfer of knowledge

The aspect of transfer of technology and of know-how (for instance, means of optimising the impact of awareness campaigns, organistional methods, etc.) is one of the driving forces of Soltherm. The progressive incorporation of new members will facilitate this task.

Evaluation

Soltherm will evaluate the results of the campaigns carried out on a continuous basis (through the internet and periodic monitoring) by means of the common guidelines and standards. This will allow for the continuous improvement of these tools.

National partners

Within the Soltherm Europe Initiative, crosscutting activities are carried out at the European level. The role of each partner is the application of concrete information-linked-to-sales campaigns in its country, taking into account the special characteristics of the national markets. The following table synthesises the contribution of the partners that, until now, have joined the Campaign for Take-Off as REPs.

SOLTHERM Europe Initiative

Results

Some expected results are:

- Catalysis of a strong market growth towards the installation, by 2004, of 15 Million m^2 of solar collectors in Europe.
- Application of common standards, certification and a series of guidelines for the main actors involved in the production and distribution of the collectors.
- Dissemination of success stories between the partners.
- Active involvement of over 40 organisations from most EU countries and some AC.

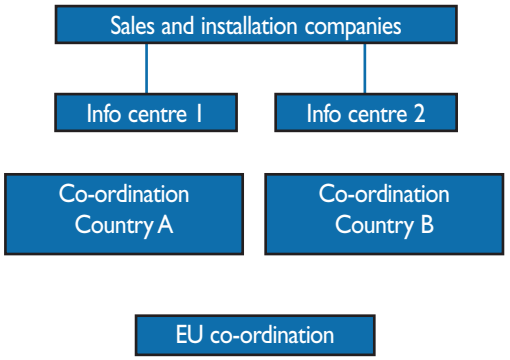
Financial resources

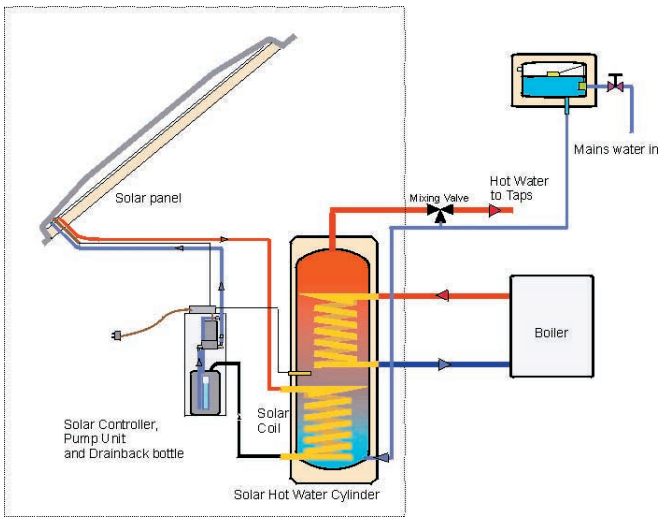
The set up and operation costs of the basic Soltherm Initiative have been budgeted at 1.33 Million Euro, of which 50% will be supplied by the Altener Programme while the rest is to be funded by the partners involved or by external financing.

The group also seeks to encourage the national instances (Ministries, regional and local authorities, energy agencies, etc.) to further contribute to the realisation of the objectives of the Plan.

Management

The main target groups are sales and installation companies, industry and consumers. These are contacted by national or regional parties and information centres, under the guidance of the national co-ordinator. The overall European co-ordinator is Ecofys in The Netherlands.





Monitoring

The progress of the Soltherm Europe project will be monitored through the internet on a continuous basis. The data monitored will consist of data on sales, on the number of information campaigns and of other market developments and, finally, on the number and type of suppliers and installers involved.

Contact

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Web Site: www.soltherm.org

List of parties involved

• International:	IEA, solar heating and cooling programme
• EU:	Astig – Active Solar Thermal Industry Group
• EU:	Climate Alliance – Klima-Bündnis
• EU:	ISES Europe – International Solar Energy Society
• Austria:	AEE – Arbeitsgeselschaft Erneuerbare Energie
• Austria:	ESV – O.Oe. Energiesparverband
• Belgium:	3E nv
• Belgium:	The Ministry of the Region of Brussels Capital – Brussels. Institute of Environmental Management (MRBC – BIEM)
• Belgium:	The Ministry of Energy of the Walloon Region of Belgium – Directorate General for Technology, Research and Energy (MRW – DGTRE)
• Belgium:	The Ministry of the Flemish Region – Department of Natural Resources and Energy (MVLG – ANRE)
• Belgium:	The Belgian Solar Industry Association (BELSIA)
• Belgium / Netherlands:	GTI – Installation company
• Denmark:	DTI – Danish Technology Institute, Solar Energy Centre
• France:	Ademe – Agence de l'Environnement et de la maîtrise de l'Energie
• France:	RAEE – RhoneAlpesEnergie-Environnement
• Germany:	Berliner Energieagentur GmbH
• Germany:	DFS – Deutscher Fachverband Solarenergie
• Germany :	Ecofys GmbH
• Germany:	Viessmann – supplier
• Germany:	Unternehmensvereinigung Solarwirtschaft (UVS)
• Germany:	Berlin Ministry for Urban Development
• Greece:	CRES – Center for Renewable Energy Studies
• Italy:	Ambiente Italia srl
• Netherlands:	Ecofys BV
• Netherlands:	Novem – Nederlandse Onderneming voor Energie en Milieu BV
• Netherlands:	Vanderbeijl – Installation company
• Netherlands:	Essent – Energy utility
• Netherlands:	Projectbureau Energie 2050 – project agency
• Netherlands:	Energiebureau Limburg – project agency
• Netherlands :	Ecostream – sales and marketing company
• Netherlands:	Platform Space for Solar – buyers group
• Netherlands:	VNI – National Association of Installers
• Netherlands:	Sol*ID – sales company
• Norway / Netherlands:	Solarnor – manufacturer
• Poland:	Ecofys Polska
• Portugal:	Grupo de Estudos em Ordenamento do Territorio e do Ambiente
• Spain:	ICAEN – Institut Catala d'Energia
• Spain:	TTA – Trama Tecnoambiental S.L.
• Spain:	Ecofys SA
• UK:	BRE – Building Research Establishment
• UK:	Energy Saving Trust
• UK:	Ecofys UK

SOLTHERM Europe Initiative

Synthesis of activities and individual REP contact details:

REP	Main actions	Contact details
3E	• Technical and/or general co-ordination of the below mentioned solar thermal energy projects. • Development and demonstration of new applications of solar thermal energy systems or projects.	3E nv Vereniginsstraat 39 B – 1000 Brussels – Belgium Tel: 00 322 217 58 68 Info@3E.be
AEE Intec	• Co-ordination of the Austrian campaign for market development of solar collectors and initiation of new campaigns. • Co-ordination of the national initiative OPTISOL for the dissemination of large scale solar heating systems in households. • Participation in an ALTENER project to promote and install solar combi systems for hot water and space heating.	Mr. Werner Weiss AEE Intec PO Box 142 Feldgasse 19 A 8200 Gleisdorf – Austria Tel: 00 43 3112 58 86 XX Fax: 00 43 3112 58 86 18 Office@aee.at
ASTIG	• Contribution of market information and actions focused on providing supportive tools for the CTO in the Netherlands. • Search for members and distribution of information, representing around 60% of the solar thermal industry in Europe (supply side). • Facilitate and establish co-operation among associations, test institutes and other actors in the solar thermal industry. • Monitoring of the present state and future prospects of the solar thermal development in the European Union, including evaluation of best practice in simulation programmes.	Mr. Teun P. Bokhoven ASTIG C/o ZEN International Lage Gouwe 198 NL 2801 LM Gouda – The Netherlands Tel: 00 31 182 599 899 Fax: 00 31 182 599 127 TenBokhoven@cs.com
BELSIA	• Development of quality label for member- suppliers and technical co-ordinator for the Vlazon project, which is a solar energy strategic development programme for the Region of Flanders, financed by the Ministry of the Flemish Region.	BELSIA Salesianenlaan 1ª B –2660 Hoboken – Belgium Tel: 00 323 820 67 39
BRE	• PV in buildings: collection of information on the buildability, operating performance, reliability and maintainability of building integrated PV systems, including a monitoring regime. • Monitoring of Amorphous- silicon PV performance of the facade of the BRE Enviromental Building in order to disseminate results to designers and other interested parties. • Integer Millennium House: intelligent house with a fully integrated, roof-mounted PV system which supplies electricity to the house. • Leadership of the "Faraday Partnership" to foster strong networks between the industry academia.	Ms. Monika Munzinger The Building Research Establishment (BRE) Ltd. Bucknalls Lane Watford WD25 9XX – United Kingdom Tel: 00 44 1923 66 45 37 Fax: 00 44 1923 66 40 97 Munzingerm@bre.co.uk
DTI	• Co-ordination of the Danish campaign for market development of solar collectors and initiation of new campaigns. • Leadership of the works related to the development of common guidelines for system quality, qualification schemes for sales and installations companies, common working guidelines for the complete information, sales and installation process.	Mr. Erik Scheldon DTI – Danish Technological Institute Gregersensvej PO Box 141 DK 2630 Taastrup – Denmark Tel: 00 45 7220 24 61 Fax: 00 45 7220 12 12 Erik.schldon@dti.dk
Ecofys BV	• General co-ordination of the Soltherm Initiative. • Co-ordination of the campaign for market development of solar collectors in the Netherlands. • Participation in the Beldezon ("call the sun") action, which offers consumers customised solar water heaters at a fair price, with hassle free installation and guaranteeing superb customer service. • Co-ordination of the SOLHAS programme, to develop a market strategy for the sector of housing associations for solar water heaters.	Mr. Bart Van der Ree ECOFYS BV PO Box 8408 NL- 3503 – RK Utrecht - The Netherlands Tel: 00 31 30 280 83 27 Fax: 00 31 30 280 83 01 b.vanderree@ecofys.nl

REP	Main actions	Contact details
Ecofys Germany	• Co-ordination of German campaign for market development of solar collectors and initiation of new campaigns.	Mr. F. Wouters Ecofys Energieberatung und Handelsgesellschaft mbH Eupener Strasse 161 D 52933 Köln – Germany Tel: 00 49 221 485 23 00 Fax: 00 49 221 485 23 01 Info@ecofys.de
Ecofys Polska	• Support the realisation of 15 Million m^2 of solar thermal collectors by 2004. • Creation of a platform for all parties contributing to the realisation of the CTO. • Fostering a co-operation climate between sales and installation companies and info centres.	Ms. Marynka Szweykowska- Muradin Ecofys Polska Sp. Z OO Ul Szczurkiewiczów 19 PL 60184 Poznan – Poland Tel: 00 48 61 661 0075 Fax: 00 48 61 661 0070 m.szweylowska-muradin@ecofys.pl
Ecofys UK	• Co-ordination of British campaign for market development of solar collectors and initiation of new campaigns. • Co-ordination of national buyers groups in the UK for the purchase of solar water heating installations.	Mr. Kees Stap ECOFYS UK Ltd Regus House, 1 Friary Bristol, BS1 6EA - UK Tel: 00 44 117 900 8447 Fax: 00 44 117 900 8283 k.stap@ecofys.co.uk
MRBC - BIEM	• Initiator of the "Promotion Campaign for Solar Water Heaters in the Region of Brussels Capital", integrating small and large demonstration projects, development of facilitating tools for professionals and information dissemination activities.	Ministry of the Region of Brussels Capital Brussels Institute of Environmental Management Gulledelle 100 B –1200 Brussels – Belgium Tel: 00 322 775 75 11 Energie@ibgebim.be
MRW	• Initiator of the Soltehrm Wallonia: long term development programme (2000-2010) for the solar thermal energy market and industry in the Region of Wallonia.	MRW – DGTRE Avenue Prince de Liège, 7 B –5100 –Jambes – Belgium Tel: 00 328 133 55 06 Energie@mrw.wallonie.be
SolarNor BV	• Activities in the national campaigns of marketing/sales, production and R&D for market development of solar collectors. • Development and demonstration of new applications of solar thermal energy systems. • Organisation of several presentations on RES to new target groups.	Mr. Gertjan Kooij SolarNor BV Hazelaarhof 7 NL 3355 RA Papendrecht - The Netherlands Tel: 00 31 651 220 392 Gertjan.kooij@solarnor.com
TTA	• Co-ordination of the Spanish campaign for market development of solar collectors and initiation of new campaigns.	Mr. Xavier Vallvé Trama Tecno Ambiental Ripollès 48 ES 08026 Barcelona – Spain Tel: 00 34 93 450 40 91 Fax: 00 34 93 456 69 48 tta@tramatecnoambiental.es

8

Progress achieved to date

In November 1997 the European Commission adopted the Communication "Energy for the Future: Renewable Sources of Energy" a White Paper for a Community Strategy and Action Plan, whose purpose is to contribute, by promoting renewable energy sources, to achieving a number of overall energy policy objectives. These objectives include security of supply, protecting the environment and safeguarding competitiveness, as key factors in fostering sustainable development. In order to achieve these goals, the White Paper proposes a doubling of the contribution of renewable energy sources of energy to the European Union's gross inland energy consumption, thus setting an indicative Community objective of 12% by 2010.

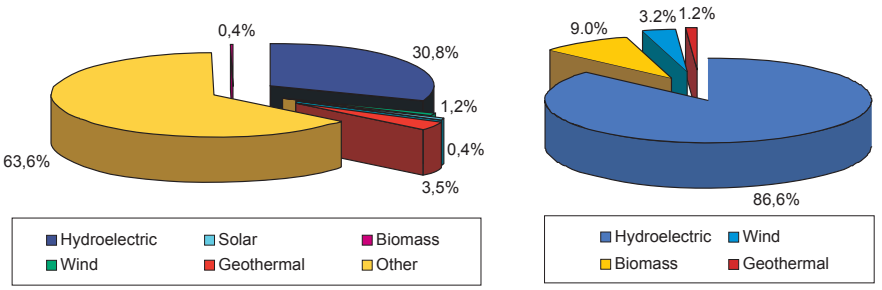
The comprehensive strategy set out in the White Paper includes a Campaign for Take-Off, designed to kick-start investments in key Renewable Energy sectors and underpin credibility by achieving substantial new initiatives by 2003. The aim of the Campaign is to involve actors in the EU-wide effort. The Campaign focuses on specific Renewable Energy sectors, establishing the following quantitative targets to be achieved by 2003:

- 1,000,000 PV systems.
- 15 Million m^2 solar collectors.
- 10,000 MW of wind turbine generators.
- 10,000 MWth of combined heat and power biomass installations.
- 1,000,000 dwellings heated by biomass.
- 5 Million tonnes of liquid bio-fuels.
- 100 communities aiming for 100% RES supply.

Progress achieved

The Communication of the European Commission on the implementation of the White Paper, published in February 2001 highlights that RES penetration is growing in all EU Member States but that efforts are still needed. In 1998, the European average stood slightly above 6% with notable differences between countries. The share of renewable energies in electricity production had risen to an EU average of 13,9%.

Graph 1: Share of renewable energy in total consumption in 1998 and share of renewable energies in electricity production in 1997



1998 1997

In terms of areas of RES, wind energy has clearly made remarkable progess, and the statistics show that the targets set at the time of defining the Campaign for Take-Off have been met three years in advance.

Solar photovoltaic and solar thermal are increasing rapidly in a limited number of areas with appropriate regulatory and promotional measures, mainly at regional and local level, but these RES need further attention if overall targets are to be met in time.

Biomass objectives, which account for four out of the seven key areas of the Campaign are difficult to assess, due to the dispersion of the installations (in particular for heat production) and the lack of adequate statistical data. Biofuels are gaining market share relatively slowly, but they are expected to grow substantially under high oil price and the recent proposals of Directive and Action Plan. Finally, energy use of landfill recovery together with sewage sludge, farm slurries and agro-food industry wastes added to an installed capacity of about 700 MW during 1998.

The Renewable Energy Partnership scheme

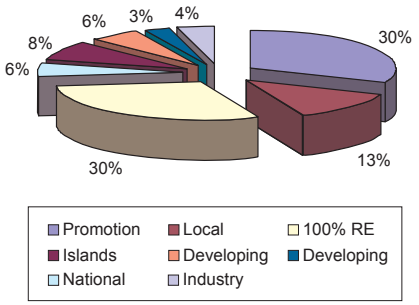
The Renewable Energy Partnership scheme is succeeding in attracting key actors from both the public and the private sector. By March 2002, more than 70 institutions and organisations had signed the Partnership Agreement with the European Commission. The target of identifyng 100 communities aiming at 100% RES supply is bearing fruit, and enough candidates have already been identified.

Renewable Energy Partnerships - some numbers

The Partners that have formally joined the Campaign for Take-Off are diverse in their nature, encompassing local, regional and national authorities, industry, energy agencies and associations, NGOs, among others. The range of activities they undertake is equally diverse, covering the key areas of the Campaign plus some others, such as geothermal energy, mini-hydro or transport schemes.

Table 1: Distribution of REPs by category:

Category	Number
100% Renewable Energy Communities	21
National Renewable Energy Partnerships	4
Regional Renewable Energy Partnerships	9
Renewable Energy Partnerships in Cities	4
Renewable Energy Partnerships on Islands	6
Renewable Energy Partnerships with Industry	3
Renewable Energy Partnerships for Promotion	22
Renewable Energy Partnerships in Developing Countries	2



An initial analysis of the nature of the Renewable Energy Partnerships that are currently involved in the Campaign for Take-Off brings to light some interesting features:

- Most of the programmes combine measures that support different sources of renewable energies.
- There are several examples of programmes promoting both energy efficiency and RES together. This kind of scheme is coherent with recent communications of the European Commission, which believes that the rational use of energy constitutes a pre-requisite for the success of the White Paper.
- Thematic campaigns (that its, campaigns that support one particular source of energy) are usually carried out at the national and, to a lesser extent, regional level and count on the commitment of a large number of socio-economic agents.
- Local partnerships usually undertake actions aimed at the promotion of most, if not all, RES.
- Partnerships promoted by local authorities (and counties, districts or other sub-regional territories) tend to look for the support of financial institutions for the implementation of their programmes.
- Energy measures at the local and sub-regional level often arise as a consequence of the preparation of a Local Agenda 21.

Updated information on the Campaign for Take-Off can be found on the following internet page:

http://europa.eu.int/comm/energy/en/renewable/ldae_site/index.htlm.

In addition, there exists a CD Rom, released in December 2001, which also presents the partnerships that have joined the Campaign for Take-Off during the years 2000 and 2001.

March 2002

RENEWABLE ENERGY FOR EUROPE

Campaign for Take-Off