



basis of an installed panel surface of 15100 m<sup>2</sup>. The medium term objective is of 8000 m<sup>2</sup> of solar panels.

Similar work has been carried out for the domestic sector and small industries.

### Solar Photovoltaic

The current high costs limit the possibilities of grid-connected systems. However, there is already in the island an experimental 42 kW plant and it is proposed a comprehensive long-term strategy to allow more market penetration when the conditions of market permit.

Regarding small scale facilities, where the quality of service predominates over the cost, prospective for new applications has been made, especially in protected areas, dispersed archaeological monuments and the traditional applications to the rural world and the communication.

### Solar Passive

Minorca traditional architecture offers passive solutions of great interest. In the tourism sector it is seen as one of the fields for the incorporation of solar solutions with greater future. The need for systematic refurbishing of the premises introduces the possibility of attacking these solutions to a certain scale. The work was made on the scope of application of 51 000 conventional tourist beds that exist in the island.



### Biomass

This is the chapter of the Plan that has shown lesser possibilities of development. The maintenance of a dispersed agricultural-forest system that produces a singular landscape and the low density of urban and industrial biomass waste, make practically non-viable new energy valorisation systems of biomass. The study made on forest biomass has shown its energy and commercial impossibility. In the aspect of animal biomass low density is also detected.

### Renewable and environment sustainability criteria

The special consideration of Minorca as a Reserve of the Biosphere of UNESCO has brought about that the resolution of the so-called eco-dilemmas in implementation of renewable energy sources has occupied a preferential place in the Plan.

Possible environmental impacts caused by the incorporation of renewables have been analysed in detail, on the basis of the existing regulatory packages and the directives from the Reserve management board.

The planning criteria have included also other also important aspects in the field of sustainable development:

- Employment creation according to potential by sources.
- Promotion of the small and medium-sized local business.
- Qualification of the business and labour staff.
- Strengthening capacity of the image of joint responsibility that implies the Reserve.

### Action strategies

Any activity that is framed within the sustainable development mandate inherent in the Reserve of the Biosphere must primarily have the perception and active collaboration of its inhabitants. The widespread recourse to renewable energy sources is deemed a capital vector for the establishment of solid sustainable development strategies in Minorca.

The Plan develops the following aspects on an horizontal approach:

- Specific information to the market actors
- Join the renewable energy component to Minorca's institutional logo.
- Establishment of a service of guidance and support on renewable energies.

As specific activities per renewable source the Plan foresees:

### Wind Energy

- To take measures for at least 1 year from 40-45 m over ground level in the area, in the selected sites, as a step previous to the introduction of the windfarms.
- Viability and environmental impact study of the sites.

### Thermal solar energy

- To favour specialised training for thermal solar system installers.
- Training and information actions for designers and architects, as well as for the building sector on the possibilities of solar thermal techniques and their integration potential in buildings.
- To exemplarise, from the public institutions, by means of incorporating solar concepts into new public projects.
- Concerted action with the hotel sector aiming to reach an 8 000 m<sup>2</sup>. Objective

### Photovoltaics

- To launch as a pilot project the integration of photovoltaics into the rehabilitation strategy for dispersed archaeological and historical heritage into the island (illumination, communications, traffic signs and didactic systems).
- Actions of training and information towards the designers

### Passive Solar

- Actions of training and information on the traditional solutions and on new solutions aimed towards designers.
- Preparation of a catalogue of accessible solutions and typological recommendations that considers as a common factor formal solutions

## Energy Saving and Efficiency An additional strategy to the Renewable Energy Plan

The Renewable Energy Plan of Minorca is conceived in the framework of an integral sustainable development policy where energy efficiency and saving are additional objectives to the strategy for the penetration of renewables. Given the impact and relevance that the public initiatives have in the island, the municipal public lighting system has been chosen as object of analysis and proposal regarding energy saving, taking into account that the electrical consumption in this sector represents 6% of the total.

This demonstration action is completed with the proposal of incorporation of rational use of energy criteria to the Code of Good Practice and Renewable Energies of Minorca.

## Prioritising activities actors and sectors

### Major sectors and actors

Town Councils and Consell Insular

The model nature of the municipal activities and of the ones financed by the Consell Insular suggests that it is in this area where the first steps of the Plan implementation are taken.

- Integration thermal solar applications into the principal public buildings.
- Photovoltaic installations in monuments and tourist centres in natural areas.
- Passive solar design for new public constructions.

Tourism Sector

- To launch a campaign aiming to install 8 000 m<sup>2</sup> of solar panels in the island's tourist buildings.



- To incorporate renewables as guidelines of action with the support of environmental management systems and Bio-hotel labels.

## Sources and technological availability

### Wind

- To establish a concertation scheme between potential wind operators, upon the initiative of the Consell Insular and with the support of the competent departments in the Govern Balear.
- To establish, in the island and regional legal frameworks the environmental and technological requirements for the use of wind energy in accordance with the directives of the present Plan.
- To contribute the necessary logistics that permits the best identification and characterisation of the sites.
- To consolidate the viable sites in the framework of the territorial management instruments, via municipal planning and inclusion in Special Plans that regulate the uses in ANEI (Natural Areas of Special Interest).

### Solar

- To consolidate and disseminate the current grant scheme, implementing Guarantee of Results approaches.
- To identify the fields of application of isolated photovoltaic projects and of small scale (rural services, archaeological heritage and tourist sites).
- To provide guidelines

## Management and co-ordination of the Plan

The Consell Insular de Minorca is the principal actor for articulating the promotion and implementation of the Plan.

It is proposed to consolidate this figure as:

- Local group of the Balearic Energy Agency.
- Group of Energy within the Consell, capable of putting together and of driving the efforts and supporting itself in the existing bodies: IME (Institut Menorquí



d'Estudis), Socio-environmental Observatory of Minorca and the Biosphere Reserve Board.

The body's tasks are the following:

- To bring about the necessary concerted actions between public and private actors.
- To identify immediate opportunities for renewable energy implementation in the different sectors, especially in those where sufficient potential has been identified.
- To facilitate technical and procedural assistance.
- To identify additional financial resources.
- To co-ordinate promotion and information campaigns on the possibilities of renewable energies in Minorca.

## Other measures

Implementation of the plan has foreseen the adoption of accompanying measures such as:

- The creation of the Code of Renewable Energies and Energy Efficiency of Minorca.
- The necessary regulatory and legal actions.
- Deepening of specialised training.

## Regulatory and legal actions

- Inclusion of the renewable energy concept in Minorca's institutional logo.
- Analysis of the creation of a specific label that awards investors.
- Specific consideration for renewable energies in future management plans of the territory.
- Negotiation with large hotel workers established in the island for the implementation of mechanisms of 'technology procurement' in Minorca.

