



## Inspiration Guide for Regional Decision-makers

Report from ENNEREG Pioneer Region

# Madeira Autonomous Region Portugal





**ENNEREG - Regions paving the way for a Sustainable Energy Europe** is a European Project supported by the **Intelligent Energy - Europe programme**. The project started on 1 May 2010 and runs until 30 April 2013.

The aim of the **ENNEREG project** has been to establish and inspire EU Regions to take up the challenges of fulfilling the EU 20-20-20 climate and energy targets of at least 20% reduction in greenhouse gas emissions, 20% increase in energy efficiency and 20% of energy from renewables by 2020 ([ec.europa.eu/climateaction/](http://ec.europa.eu/climateaction/)).

As part of the project **12 Pioneer ENNEREG Regions** have been producing regional **Sustainable Energy Action Plans (SEAPs)** and initiating **Sustainable Energy Projects (SEPs)**. The ENNEREG Pioneer Regions have been sharing their experience directly with 14 ENNEREG Twin Regions and ENNEREG has also been actively promoting replication in Sustainable Regions throughout Europe.

To promote and support these activities, the ENNEREG **Regions 2020** website ([www.regions2020.eu](http://www.regions2020.eu)) acts as a platform providing inspiration and encouraging networking and replication enabling regions and their local communities to exchange experiences and be inspired on their journey to develop and implement SEAPs and SEPs.

This series of reports from the **12 Pioneer ENNEREG Regions** has the objective of disseminating to a broad European audience what has come out of the ENNEREG intervention in those regions. It represents the contribution of each region to the ENNEREG Inspiration Guide for regional decision-makers.

The **Inspiration Guide**, along with supporting documents including **Good Practice Case Studies**, **Regional SEAPs** and many other resources, can be found on the Regions 2020 website at: [www.regions2020.eu/inspiration](http://www.regions2020.eu/inspiration)

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*This report has the objective of disseminating to a broad European audience what has come out of the ENNEREG intervention in the Madeira Autonomous Region. It represents the contribution of IDMEC and AREAM to the ENNEREG Inspiration Guide for Regional Decision-makers. The guide and supporting documents can be found online at: [www.regions2020.eu/inspiration](http://www.regions2020.eu/inspiration)*

## Contents

Setting the Scene .....	1
Putting a regional SEAP into place.....	3
Stories of SEAP/SEP implementation .....	4
Reflection and future prospects.....	8
Further information.....	9

## Setting the Scene

Energy constitutes a strategic factor for the development of the Autonomous Region of Madeira, as it bears all the economic and social activities and has a significant weight in the imports and in the economy, with repercussions on the competitiveness, employment and quality of life.

Primary energy demand has doubled over the last 20 years and the specificities of an insular, outermost region, distant from the big continental energy networks, imply higher costs for energy supply and conversion, due to the transport and diseconomies of scale. These additional costs mean that energy efficiency measures and valorisation of renewable energy sources become more interesting from an economic standpoint, in addition to the environmental and social benefits.

In this sense, the Autonomous Region of Madeira has followed an energy policy which aims to reduce energy dependence from abroad and to minimize the negative environmental impacts associated with fossil fuels.

The first energy plan was approved by the Region in 1989 and later updated in 1992 and 2002. The Energy Policy Plan of the Autonomous Region of Madeira constitutes, to the present day, a planning instrument which has guided the adopted strategy of valorising endogenous resources and promoting energy efficiency.

In sequence to the strategy that has been followed, the actual situation and future perspectives for socio-economic development and growth of the energy sector require a sustainable energy policy based on efficiency and valorisation of local resources, as described in the objectives set by the European Union on Energy and Climate.

The Vice-Presidency of the Regional Government of Madeira is the governmental body with relevant expertise in the energy field. It has the power to define and implement the necessary actions to be complied with the regional policy in the energy sector. In addition to these powers, it is the responsibility of the Vice-Presidency to oversee some public and government subsidized companies operating in the energy sector, to define policies and respective action plans, to control and supervise the implementation of those plans, to prepare the necessary legislation, to license and set taxes and tariffs.

In the Vice-Presidency composition, the Regional Directorate of Commerce, Industry and Energy (DRCIE) is responsible for supporting the Regional Government in the elaboration and implementation of the energy policy for the energy sector, and also to support other areas under its competence. This regional directorate has competences to approve projects of the energy sector and to license facilities and equipments that produce, use, transport or store energy products, in conjunction with other organisms, and promote and collaborate in the preparation or adaptation of regulations and technical specifications suited to the Region. It also has the responsibility to develop and propose measures that encourage the reduction of energy dependence from abroad and to tackle situations of interference in the normal supply of energy products.

The *Empresa de Electricidade da Madeira, S.A.* (EEM) is a public limited company with exclusive public capital, with the mission to produce, transport and distribute electricity, in agreement with the regional policy for the sector under the supervision of the Vice-Presidency, to manage Madeira's and Porto Santo's electricity systems, to carry out the necessary investments to meet the energy needs and to guarantee the quality of electricity supply services.

AREAM – Regional Agency for Energy and Environment of Autonomous Region of Madeira is a private, non-profit association, recognised as public utility, with the mission to investigate, innovate, promote and disseminate information in the energy and environment domains.

In the scope of carrying out its objectives, AREAM supports the Regional Government in the formulation and implementation of the regional energy and environmental policies, as well as, the economic agents to promote the use of efficient technologies compatible with sustainable development. AREAM studies, promotes and disseminates measures and technologies suited to the implementation of the energy and environmental policies, mostly regarding the reduction of energy dependence from abroad and protection of the environment. AREAM also carries out projects regarding energy efficiency and the use of renewable energy, innovation and inter-regional cooperation, especially with other insular and outermost regions.

The involvement of local and regional stakeholders is strategic in the elaboration and implementation phases of the sustainable energy action plans and the sustainable energy projects foreseen. Stakeholders from different areas were involved in the process, namely in the collection of data related to energy generation and consumption, and in the definition of the actions to be carried out until 2020.

In order for the strategy advocated in these action plans be implemented satisfactorily and the targets achieved, it is fundamental that all of society participates, it is foreseen a set of actions to bring about the involvement and commitment of citizens and stakeholders in the energy area, namely the development of awareness-raising and information campaigns directed to residential, trade and services sectors, involving associations and the media, to promote efficient equipments, the use of renewable energies, eco-driving and the adoption of more efficient practices in general.

The creation of financial support, incentives and schemes for public and private promoters, and citizens, to encourage the implementation of the actions of the Sustainable Energy Action Plan, in the several target sectors, is also included to ensure the stakeholders involvement.

It is also important, the enforcement of the legal frame, namely increasing the supervision on the application of some mandatory actions, to ensure the good results of the actions and of the plan as a whole.

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## Putting a regional SEAP into place

The initiative of developing a Sustainable Energy Action Plan must come from a public authority, with political empowerment to decide and influence the regional or local levels in its execution. The authority should assume its commitment at local, regional, national or European level and establish clear, measurable and practicable goals, to achieve within the execution of the Action Plan. These goals should be consensual with the European climate change policies and contribute to its goals in 2020.

The establishment of a long term vision and its comparison with the actual situation will serve as a basis to identify the strategy and the actions required to achieve the proposed objectives. The vision should be realistic and promote the improvement in quality of life and well-being, quality of the environment and economic growth.

The development of the action plan represents a challenge for the internal organization of regional administration, as it involves various areas of action, requiring implementation of planning procedures and continuous management. Taking into account the multi-sectoral nature of the action plan, it is important to organize a working structure involving all organisms of local or regional administration with interest in the developing process, in order to enhance the effectiveness of the plan's implementation.

In April 2011, the Autonomous Region of Madeira signed the Pact of Islands, together with other 11 European regions, representing a total of 62 islands.

The Pact of Islands signatories made a number of significant commitments, such as:

- To go beyond the objectives set by the EU for 2020, reducing the CO<sub>2</sub> emissions in their respective territories by at least 20%;
- To submit an Island Sustainable Energy Action Plan (ISEAP), including a Baseline Emission Inventory, which outlines how the objectives will be reached and priority bankable projects;
- To submit an implementation report at least every second year following the submission of the Action Plan for evaluation, monitoring and verification purposes;
- To organise Energy Days, in co-operation with the European Commission and with other stakeholders, allowing citizens to benefit directly from the opportunities and advantages offered by a more intelligent use of energy, and to regularly inform the local media on developments concerning the action plan;
- To attend and contribute to events organised by European Institutions relating to the Pact of Islands & the Covenant of Mayors;
- To mobilise sustainable energy investments in their respective territories.

On March 29th 2012, the Council of the Government of the Autonomous Region of Madeira approved the Sustainable Energy Action Plans for Madeira and Porto Santo Islands, developed under the Pact of Islands, to which joined in April 12, 2011.

In these plans, objectives and targets were set for the year 2020 and the actions for sustainable energy to achieve these targets were studied. The specific main objectives of the strategy for sustainable energy are to:

- Improve energy supply guarantee.
- Reduce energy dependence from abroad.
- Reduce energy intensity in Gross Domestic Product.
- Reduce carbon dioxide emissions.



The objectives and targets for the year 2020 with the implementation of the plan’s actions are presented in the following table.

### Targets for 2020

Objectives		Targets
1.	Improve energy supply guarantee.	Increase by 20% the number of days of autonomy of primary energy storage in comparison to 2005.
2.	Reduce energy dependence from abroad.	Increase to 20% the use of renewable energy resources in primary energy demand.
		Increase to 50% the use of renewable energy resources in electricity production.
3.	Reduce energy intensity in Gross Domestic Product.	Reduce by 20% the energy intensity in Gross Domestic Product (primary energy/Gross Domestic Product) compared to 2005.
4.	Reduce carbon dioxide emissions.	Reduce CO <sub>2</sub> by 20% compared to 2005.

Regional and local stakeholders (public and private) and citizens, who constitutes the Advisory Committee, and will have a major role in the plans’ implementation and monitoring process were involved in the process. To an effective implementation of these action plans it is fundamental the maintenance of all the stakeholders in the process, in this sense, it is foreseen a set of actions to bring about the involvement and commitment of citizens and stakeholders in the energy area, namely the development of awareness-raising and information campaigns directed to residential, trade and services sectors, involving associations and the media, to promote efficient equipments, the use of renewable energies, eco-driving and the adoption of more efficient practices in general. The creation of financial support, incentives and schemes for public and private promoters, and citizens, to encourage the implementation of the actions of the Sustainable Energy Action Plan, in the several target sectors, is also included to ensure the stakeholders involvement. It is also important, the enforcement of the legal frame, namely increasing the supervision on the application of some mandatory actions, to ensure the good results of the actions and of the plan as a whole.

## Stories of SEAP/SEP implementation

### *Awareness raising campaign about energy efficiency and renewable energies directed to young people and seniors*

The actions carried out in the scope of the campaign, involved different publics, with a large range of ages, literacy and cultural levels. In that context, the actions were prepared to make different approaches according to the different publics, including presentations, didactic games and practical classes on how to make solar ovens and solar panels.



**Awareness raising actions held in Madeira**

The objective of the campaign was to inform, educate and raise the public’s awareness on the importance of energy efficiency and the negative impacts of fossil fuel energy in the environment.

The actions focused on educating how to improve daily habits in our homes, work, schools or in any other activities, on how to increase the use of renewable energy and on how electricity is produced in Madeira and Porto Santo Islands.

Actions were always divided into a theoretical part, approaching energy efficiency, renewable energy, energy production and demand, and an entertainment part, adapted to the target group age and areas of interest.

Actions were held in different places such as indoor spaces, public parks, camping environments, university, parish centre and museums.

About 20 awareness raising actions were carried out, with very successful results, reaching a global number of about 700 persons of different ages, from 18 organizations:

- 206 retired people of six different social support organizations;
- 153 youngsters of six different organizations including, scouts, catechism, university and social service institutions;
- 345 children of six organizations;

Several awareness raising materials and contents were developed.

The main concern of the organization was to reach a larger range of people, from target groups that are not commonly considered in these types of actions.



### **Awareness raising actions held in Madeira**

#### ***Hydrogen Exhibition***

The objective of the Hydrogen exhibition is to inform about the use of hydrogen to produce electricity.

The exhibition shows the chemical process of extracting hydrogen from water through electrolysis, using solar energy.

The Hydrogen exhibition was held in Museu da Casa da Luz (Electricity museum) during all February 2011 and was visited by about 1100 people, including pupils and general public.

It was held also in the Centro de Ciência Viva do Porto Moniz (Science museum) from March 22<sup>nd</sup> to September 30<sup>th</sup> of 2011.





**Inauguration of the H<sub>2</sub> Exhibition in Centro de Ciência Viva do Porto Moniz**

### ***Eco-driving campaign***

Initially, in the project propose, was foreseen an workshop about the introduction of the eco-driving concepts in the driving courses, involving local municipality, commercial and industrial association, and driving schools representative.

Due to lack of accession from driving schools and teachers, the workshop was cancelled, so this action was re-designed to a debate at University of Madeira about energy efficiency in transports, buildings and land use planning, which included efficiency in mobility and eco-driving.

The objective of the workshop was to raise aware the students about energy efficiency and to debate on how to improve the efficiency in buildings, transports and land use planning.

This action, held in University of Madeira, at November 11<sup>st</sup> 2012, had the participation of about 50 students and professors.



**University of Madeira Workshop**

To reach a more proactive involvement of the participants, in the days before the debate, students from energy efficiency and environmental courses had a preparation class, organized by project's partners, and were challenged to think of solutions to improve energy efficiency and environmental management in the three approached issues: transports, buildings and land use planning.

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A form was prepared to be fulfilled by the participants, with the following items:

- Description of action;
- Who are the target groups;
- Who is responsible for action implementation;
- Financing aspects;
- Legislation aspects;
- Expected results.

Awareness rising eco-driving leaflets were prepared to distribute through pupils.

In the debate day, it was given the opportunity to each student to present his idea and to discuss it with the professionals present in the room.

The re-designed action resulted very well, with a very enthusiastic debate, reaching about 50 students and professors. The participants' preparation for the debate was the reason for the success of their active involvement.

### ***Bilateral Meetings with stakeholders***

In the scope of the ENNEREG project several bilateral meeting were carried out with local actors with the aim to, jointly, identify specific needs, problems and to find solutions that lead to the development of suitable SEP to improve energy efficiency, reduce costs and contribute to the objectives set in the signed regional commitment Pact of Islands. The strategy was similar for the promotion of the Covenant of Mayors. All municipalities of the Autonomous Region of Madeira were requested to attend a meeting where importance was given for Municipalities to join the Covenant of Mayors and develop its own Sustainable Energy Action Plan.

From these meetings six main project ideas were suggested in order to meet the needs identified by the regional and local actors and the solutions identified by AREAM:

- ***Covenant of Mayors:*** All municipalities of the Autonomous Region of Madeira to become signatories to the Covenant of Mayors and preparation of respective Sustainable Energy Action Plans.
- ***Public Buildings:*** Improving energy efficiency in regional public administration buildings.
- ***Street Lighting:*** Improving energy efficiency in street lighting.
- ***Urban Rehabilitation:*** Rehabilitation of a 30 years old housing neighbourhood.
- ***Public Swimming Pools:*** A pilot project applied in a public swimming pool to heat water through biomass or solar systems. The initial investment will be provided by third parties (ESCO).
- ***Public Transport:*** Renewal of public transport fleets for a more energy efficient fleet. This action, of regional scope, results from the need identified by Funchal city's public transport operator to improve energy efficiency, reduce maintenance costs, improve air quality and less noise in the city, and a more competitive public service than individual/private transport.

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## Reflection and future prospects

The ENNEREG project was an important project for the Autonomous Region of Madeira as an instrument to help the Region reach the global energy and GHG emissions objectives. The network created in the project is an important channel of experiences and good practices' exchange between regions, improving the replication of some practices in other regions. With this network, Madeira had the opportunity to learn with other regions, to discuss ideas with European stakeholders and to have access to important information about Sustainable Energy Projects already implemented, namely all the process to develop the project, the financial and human resources needed, results, barriers to its implementation and how they overcome these barriers.

About the involvement of local actors in the preparation process of an action plan and mainly in the implementation of actions described therein, ENNEREG project has given the opportunity of understanding its importance in the process, as it combines the needs and concerns of stakeholders with the defined strategy, in this way gathering synergies to comply with the objectives and targets set.

On the other hand, the SEP education implemented in Region contributed to the knowledge empowerment of the citizens to issues related to energy efficiency and renewable energy. It is important to note that the involvement of citizens is crucial to reach the energy objectives, and the first step of this involvement is to give them more knowledge about these issues. Awareness campaigns were organized in the scope of energy efficiency and renewable energies involving different publics, with a large range of ages, literacy and cultural levels. Within the campaign, an exhibition about hydrogen (H<sub>2</sub>) as an energy vector was held in two exhibition rooms (Electricity museum in Funchal and Science museum in Porto Moniz) during the year of 2011. The exhibition was visited by local people, schools and foreigners.

The Portuguese team intends to continue to do this knowledge empowerment not only to the citizens but also to the stakeholders. These actions will be carried out not only in the RAM, but also in its twining region.

The preparation of a regional or local SEAP constitutes a planning instrument, that defines a clear strategy of the adopted energy policy, as well as a support instrument for the implementation of foreseen measures in order to comply with the objectives and targets defined in the established timeframe. This is a fundamental instrument as it establishes a political commitment taken on a local, regional and European level, where the various sectorial policies carried out in its period of force, converge to comply with the objectives defined concerning energy and climate, as well as constitutes a political framework for access to funding programmes that require the definition of a clear strategy for energy policies, with implications in such sectors as transport, commerce and services, residential, street lighting and energy generation sectors. The involvement of local actors in the preparation process of an action plan and mainly in the implementation of actions described therein is one of the most important phases of the process, as it combines the needs and concerns of stakeholders with the defined strategy, in this way gathering synergies to comply with the objectives and targets set. In this perspective, the action of the ENNEREG project contributed to the dialogue with the stakeholders and strengthens its action and commitment in pursuit of Madeira's and Porto Santo's regional action plans.

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## Further information

Further information about ENNEREG activities in the Madeira Region, including the region's Sustainable Energy Action Plan and Good Practice Case Studies, can be found on the Regions 202020 website at: [www.regions202020.eu/madeira](http://www.regions202020.eu/madeira)

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