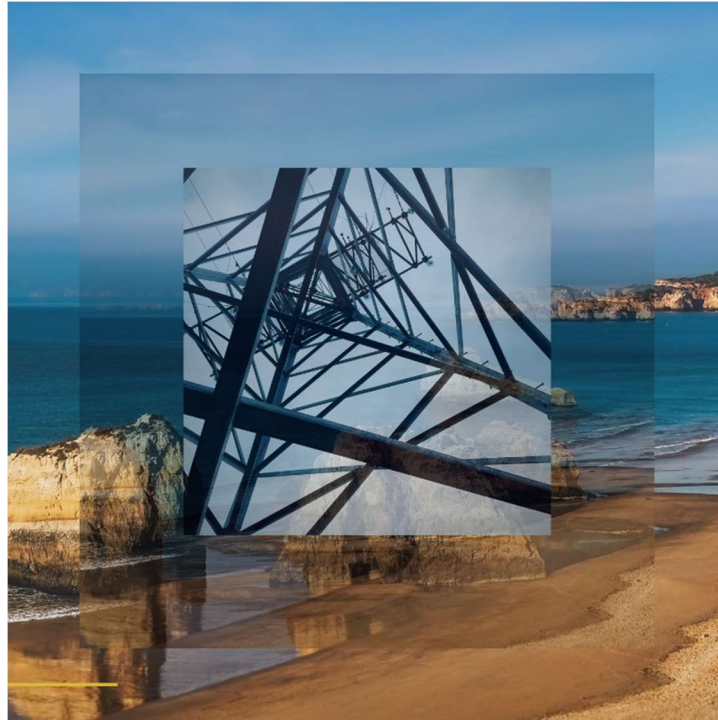


Action plan – Algarve

Introduction



The national / regional policy regarding the energy sector is constantly changing either due to economic aspects, directly linked to energy demand, or through the challenges recommended by the European Union, mainly the goals to which Portugal is committed to achieve. In order to overcome these challenges, the Portuguese energy sector has implemented important legislative and strategic policy changes. In general terms, according to the Portuguese Agency for Energy - ADENE, the goals of the current policy are:

- Reduce significantly the greenhouse effect emissions;
- Strengthen the diversification of primary energy sources, contributing to enhance the country security;
- Increase the energy efficiency of the economy, particularly in public sector, contributing to the reduction of public spending and to the efficient use of resources;
- Contribute to increase the competitiveness of the economy, by reducing consumption and costs on companies and management of the domestic economy, freeing up resources to stimulate the internal demand and new investments.

This is a policy that promotes a rational and sustainable energy model, without compromising the competitiveness of enterprises and life quality. For an easier consummation of the specific goals and streamline the various measures, the following program and plans were outlined:

- National Action Plan for Energy Efficiency | [PNAEE](#)
- National Action Plan for Renewable Energy | [PNAER](#)
- Energy Efficiency Program for Public Administration | [ECO.AP](#)

Managed by the Commission for Coordination and Regional Development of the Algarve (CCDR Algarve), CRESC Algarve 2020 (Regional Operational Program of the Algarve) is an instrument of recognized importance regarding Funding for the promotion of investments, including for those focused on a more efficient resources with lower CO2 emissions. The region's development path is based on the theme of renewable energies, driven by the urgent need to decarbonize economies, guaranteeing security of supply by taking advantage of the favourable conditions in the sector of clean energy production at the regional level. In this context, the socio-environmental implications underlying energy consumption are highlighted in order to respond to the emerging challenges of climate change and reduce dependence on fossil fuels.

The CRESC ALGARVE 2020 program presents four priorities, one of which is sustainability, which includes the following topics: Moving towards a low carbon economy; Invest in the use of renewable energy and energy efficiency; Revitalize cities; Preserve, protect and promote the natural and cultural heritage and Support the Strategies for Community Based Local Development.

In this context, it is planned to implement measures to change the energy consumption patterns of the region, as well as reduce associated costs, increasing energy efficiency, contributing to the reduction of CO2 emissions and behavioural change of the agents involved. Within the framework of the Regional Strategy for Research and Innovation for Intelligent Specialization (RIS3), the Algarve Region intends to assume itself as a sustainable region, amplifying the actions implemented by the tourism sector and extending the behaviour to other sectors. In this context, it is essential harness the potential of the region's natural resources, stimulate emissions reduction by encouraging less carbon-intensive mobility and foster energy efficient policies on demand side.

Action Plan

Part I – General information

Project: SET-UP

Partner organisation: AREAL – Regional Energy and Environment Agency of Algarve

Other partner organisations involved:

Country: Portugal

NUTS2 region: Algarve

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Part II – Policy context

The Action Plan aims to impact:

- Investment for Growth and Jobs programme
- European Territorial Cooperation programme
- Other regional development policy instrument

Name of the policy instrument addressed:

- » CRESC ALGARVE 2020; Priority Axis 4 – Low Carbon Economy; Specific measure 4C – **Energy Efficiency Support and Intelligent Energy Management and Use of Renewable Energy** in Public Facilities, especially in Public buildings and households
- » Regional Strategy for the Algarve 2030 / National Investment Program 2030 ("PNI 2030")

Part III – Details of the actions envisaged

ACTION 1 – Introducing smart grids actions on the Regional Energy Strategy 2030

1. The background

Over the last years AREAL had developed an in-depth territorial analysis, exchange of experiences and research/analysis of good practices both at national and international levels. Taking advantage of this work it was possible to identify the needs and barriers of the smart grids' implementation process.

The cooperation established in SET-UP project allowed to define an orientation of the good practices developed in the partner regions and internalized into the Algarve Region. Some clear examples that contributed to this effect were:

- the [SOLENN project](#) developed in Brittany region which is focused on the promotion of several activities like test electricity demand management and power supply security solutions and power supply security solutions by involving local community stakeholders.
- the [Smart Energy GB](#) developed in United Kingdom which is an innovative national campaign to promote awareness of smart meters for households and SMEs. This initiative allowed the process of educating people to use a smart meter and learn how it can be useful.

Taking into account its innovative and current character, these initiatives were transmitted in several meetings and some regional events promoted by SET-UP. One of the examples was the "Workshop: Innovation, applied research in renewable energy and relationships with SMEs", held at the University of Algarve.

2. Action

Taking as the starting point all the knowledge acquired from the SET-UP project partners, it is important to encourage the introduction of smart grids actions on the Regional Energy Strategy 2030. In this framework, an effort is being made to integrate in the regional strategic instruments a selection the good practices identified, in order to encourage an effective investment on smart grids.

AREAL takes part in this process thanks to its participation in the Algarve Regional Innovation Council (CIRA) that promotes a regional participation model to contribute to the Regional Energy Strategy 2030. CIRA, headed by CCDR Algarve, as Managing Authority of the Regional Operational Program of the Algarve, assumes the Regional RIS3 Management, is a triple helix cluster composed by private companies, technology producers and advanced users, entities of the scientific and technological system, universities, national management entities and intermunicipal entities. CIRA's specific mission is to accompany and streamline the implementation of the Regional Strategy for Intelligent Specialization (RIS3 Algarve).

In the scope of the SET-UP project, AREAL had a unique opportunity to learn about important topics for the region, namely:

- flexibility and grid stability through energy storage solutions, namely through the presentation of Distributed Energy Storage-Moixa Technology, during the "SET-UP Workshop Economic Models: Analysis of the economic drivers for the delivery of SMART grids" carried out on 4th October 2016 in Leicester. It was possible to confirm that this type of solution is a compact all-in-one smart system that increases solar payback, services revenue and grid stability.
- remote and bidirectional communication equipment (e.g. smart meters) and awareness campaigns to promote empowerment by consumer engagement, essentially through the visit to rolled out smart meters at Paks' public institutions in the framework of TOGETHER Central Europe project carried out in Paks. In addition, it was also interesting to see the presentation of Smart Energy GB about the UK Smart Meter Rollout during the "SET-UP Workshop Economic Models: Analysis of the economic drivers for the delivery of SMART grids" carried out on 4th October

2016 in Leicester. In this presentation it was evident through a humoristic campaign, that smart meters can give us control over energy.

- the introduction of dynamic market rates and the cybersecurity of networks, through participation in the round table carried out during the visit to NPC - National Pricing Commission in Vilnius. Furthermore, also the workshop organized by Regen SW in London, represented an opportunity to learn about the local market flexibility.
- the development of micro networks of electricity, benefiting from electricity self-consumption, mainly through a practical exercise based on the Business Model Canvas, held in Paks during the 4th Project Meeting. Partners developed together a business canvas focusing on self-consumption.
- incentive lines related to Smart Grids, through the presentation of the Technical Guide - [Smart Grids - "Andalucía es más"](#) - Program for the Sustainable Energy Development of Andalusia presenting during the Interregional workshop: Funding sources developed at the 3rd project meeting held in Seville. Subsequently, we had the opportunity to deepen the subject in the exercise B2B meetings between partners held in the Algarve.

Inspired by the above lessons learnt, AREAL has been acting to put on the agenda of CIRA's the theme of smart grids as an important ally of the roadmap for Regional Energy Strategy 2030. The strategic reflection on the future of Portugal in the medium and long term is an exercise of the greatest importance, which the Government wants to carry out comprehensively, involving the most varied actors. The objective was to give input to the Regional Energy Strategy 2030. This dynamic of participation is important to make the regional actor's active part in the process for drawing priorities, setting collective agendas and improving decision support in order to align financial incentive systems with the region needs.

In this context, AREAL contributed to the activities of the Innovation Council by preparing a proposal that included the following points:

- foster decentralization of the energy system through microgeneration and energy storage;
- establish regulations for energy storage systems and for decentralized production, in special collective prosumers;
- promote awareness of smart meters for households and SMEs;
- creating incentive systems for energy efficiency/smart grids.

The interregional learning carried out with the SET-UP project was crucial for the identification of the points mentioned above. In fact, as mentioned previously, many of the exercises or actions carried out at the interregional level, helped to identify viable solutions to our territorial needs. Finally, the proposal made by AREAL was accepted by the Association of Municipalities of Algarve (CI-AMAL) that submitted our contribution to the national government for further approval.

Following the governmental approval of the Strategy, the scope and degree of introduction of the points above proposed will be assessed. This assessment will be carried out by quantifying the number of actions that will be introduced in the regional energy strategy 2030.

3. Players involved

CCDR Algarve is the key player to implement this action with success. CCDR Algarve is full member of AREAL. AREAL is an active member of Algarve Regional Innovation Council (CIRA) that have technical, scientific experts and political members. The implementation of this action will be influenced by AREAL and operationalized by CIRA.

4. Timeframe

The participation of AREAL at CIRA started 2016 and have periodical meetings and actions.

Considering the importance of the CIRA initiative, we can indicate the following:

Public consultation on the Strategy open from January 2019

Drafting of AREAL proposal: February 2019

Contribution sent to National Government by the Association of Municipalities of Algarve on March 2019

Governmental approval of the Strategy expected: December 2019

Implementation of the Strategy: 2020-2026

Assessment reporting: 2020

5. Costs

The costs associated with this action are difficult to measure, however, it is necessary to consider the costs with the team that will participate in the process and also the possible dissemination of contents. An estimation of costs is 30 k€.

6. Funding sources

Algarve Operational Program (CRESC ALGARVE 2020)

ACTION 2 – Definition of a potential call for proposals for promote smart energy communities in the Algarve (eg. Island smart energy community)

1. The background

During the project period, there were several communications and relevant experiences that can be capitalized and promoted to the energy transition of each region. However, the experience that AREAL had the opportunity to examine in depth during the staff exchange in Ushant Island (Brittany), had a very interesting impact due to its geographic characteristics.

More specifically, AREAL had learnt several good practices that had been carried out at Ushant Island in order to turn it more self-sufficient, resilient and secure energy systems, in particular:

- The integration of awareness initiatives with power demand and offer. This experience of sensibilization and population involvement was interesting because it happened in the various steps of the energy transition strategy: 1. reduce

consumption; 2. produce green electricity; 3. smart grid and energy storage. The positive impacts of this kind of experience can be part of the guidelines in future projects at the Algarve region. Based on the idea of creating energy communities that manage their own energy and implement a participative model that allows the distribution of costs and revenues of renewable generation.

- The perspectives to increase the renewable energy quota in the island by adding more PV resources and marine tidal energy production. It was possible to verify that the first results represented 1 425 MWh / year. This increase in renewable energy production capacity is the basis of this concept of smart energy community. These results help to conclude that the focus on decentralized energy production systems is clearly a way forward to solve the challenges related to the sustainability of the Algarve region.
- The integration of a storage system (1MW) in the local low voltage electrical grid (to minimize the variability of the renewable production). With the aim of expanding predominantly the potential of the solar resource, and improving network stability, this experience will be a good solution to implement at Algarve region. This storage system integration must have adequate capacity and contemplate a complete energy management system that is able to match the energy consumption and the generation.
- Dynamics of the process, both of technical and financial support to the inhabitants. About 80 projects were funded in Ushant Island which saved 1 100 MWh. Considering its complexity, the success of the energy transition and the implementation of energy efficiency measures depends heavily on the existence of funding systems and adequate technical monitoring.

Considering this set of observed initiatives, AREAL has shared each of the experiences with the regional authority (CCDR Algarve), believing that this could be an excellent basis or contribution to sustain and help outline the type of operations to be financed in the future.

2. Action

The entities and community of the Algarve begin to be motivated to build their own clean energy projects, now it is important to connect them with the right technical expertise and innovative financing.

Following the expansion of the "inovgrid" project for the barrier islands (Culatra and Armona), with a coverage of about 1.200 households, and the project "Culatra 2030 - Sustainable Energy Community" supported by European Clean Energy for EU Islands, it is expected that new calls will be launched based on an integrated strategy that will lead to a sustainable energy system for future generations.

In fact, these above two initiatives emerge as good practices for what is expected to develop smart grids in the region of the Algarve. Its implementation will simultaneously contribute to an effective energy transition from these environmentally sensitive areas and to a replicability effect that would encourage greater integration of renewable energy systems in the region.

Following the Ushant Island good practice, the main benefit of introducing smart energy communities is to allow real-time monitoring by the consumer and remote-control network elements by the power supplier. This aspect has a special emphasis to smart energy communities that are based on the installation of smart meters and others energy efficiency equipment's. Associated with this advance, it will be fundamental to foster incentives by public entities, to address focused measures related to effective consumer engagement, decentralized renewable production, storage and electric mobility.

In this context, with the knowledge acquired by the SET-UP project, AREAL will be an active partner in the development of smart energy community project, such as the Culatra 2030 project in special to set an energy strategy, choose energy technologies and to involve the regional/national partners.

The focus will be on establishing a dynamic dialogue with the Management Authority of the CRESC Algarve program (CCDR Algarve), in order to redirect incentives to support smart energy communities, based on the experiences learned by AREAL in the SET-UP Project.

3. Players involved

- » Algarve Regional Coordination and Development Commission (CCDR Algarve) - To promote financing instruments, as Managing Authority of the Regional Operational Program of Algarve and managers of Regional RIS3.
- » AMAL – Inter municipality Community of Algarve - Support for the initiative as an interested part and contribution to the provision and adaptation of municipal regulations.
- » AREAL – Regional Energy and Environment Agency of Algarve - To promote, clarify and support smart grids initiatives.
- » University of Algarve - Foster the implementation of the action, from a perspective of scientific and technological support.
- » Association of island residents - As facilitators of the actions to be implemented.
- » EDP Distribution (DSO) - Operational Experience Transmitter.
- » Águas do Algarve - Partner in the process of implementing efficiency measures in the water supply process.
- » Algar - Partners in the energy efficiency process relates to the collection of waste and possible valorisation of biofuels.
- » Fagar - Partners in the energy efficiency process relates to the collection of waste and possible valorisation of biofuels.
- » Energy Services Regulatory Authority (ERSE) - Promotor and regulation provider of the services of the intelligent electricity grids.

4. Timeframe

A call will be expected in 2020 and an assessment will be made in 2020.

5. Costs

Total Budget: €2-3 million

6. Funding sources

ERDF – PO Axis 3.1 (subsidy)

National Funding

Date: 08.07.2019

Signature:



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