

Beyond Energy Action Strategies



D.3.4 – Workshop report on implementation of bankable energy actions

Title of the Workshop: Implementation of bankable energy actions

Date realised: 2nd March, 2016

Location: Puerto del Rosario, Fuerteventura



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1. General

Topic	Implementation of bankable energy actions
Date	2nd March, 2016
Location	Puerto del Rosario, Fuerteventura
Number of participants	11 people

2. Objective

The objective of the Workshop was to present results obtained in the framework of BEAST, of work done on the wind-diesel Punta Jandía project, and discuss with representatives of public institutions of the island of Fuerteventura the next steps needed for the implementation of the project.

Punta Jandía is a remote small fishing village located in the south of the island of Fuerteventura. It has a permanent resident population of 36 people (7 families), but faces high increase of population during the weekends, given that it is a popular tourist destination for island residents. It also experiences high seasonal variations. The changes in population translate into high energy demand difference during the week days, and from the winter to the summer months.

ITC installed in 1997 a hybrid microgrid (wind-diesel system) that managed to substitute an important part of the diesel fuel. The original wind-diesel system was in operation for some years (1997-2002), but unfortunately due to several non-technical reasons (financial, bureaucracy, lack of political will, etc.); the system was stopped. Since then the local municipality has been supplying diesel to run a genset that supplies electricity “free” to the residents.

The proposed project aims at recovering the original wind-diesel system, in order to substitute 75 % of diesel consumption on a yearly basis. The main objective of the workshop, besides informing major stakeholders, was to inform of the possibilities of submitting a project proposal to the regional program FDCAN, to request public funding for the initiative.

3. Description and overall evaluation

The Fuerteventura workshop had a duration of 4 hours, and had participation of representatives of the Canary Island Government (the Regional Agency for Research, Innovation and Information Society – ACIISI); Canary Islands Institute of Technology (an R&D centre belonging to the Regional Government of the Canary Islands); Island Authority of Fuerteventura; Municipality of Pájara (where Punta Jandía is located).

The workshop began by addressing all mayor barriers identified, from territorial protection, to restrictions to access financing for the needed investment, and the absence of a framework that could allow for a retribution scheme that would allow for a return on the investment (currently electricity is supplied totally free to the residents of the small remote village of Punta Jandía). Actions for overcoming the barriers were discussed, and a presentation of the project was made by ITC representative.

It was explained to the participants that the wind-diesel project aims not only at having a system to substitute 70-75 % of diesel fuel consumed today, with RES, but also will offer an opportunity to dispose of a testing platform for demonstrating complementary technologies such as batteries, RO water desalination, electric vehicles and hydrogen technologies for energy storage. ITC representative explained that a project proposal was being elaborated for H2020, for demonstrating the integration of RES-H2 at Punta Jandía.

4. Outcomes and conclusions

During the workshop it was confirmed the high interest that the proposed wind-diesel project has for the public institutions of the Canary Islands, especially for the Island Authority of Fuerteventura, and the Municipality of Pájara where the Punta Jandía is located, and which is currently responsible for paying for the 144.000 liters of diesel being consumed yearly to provide free electricity to the village residents.

ITC presented the results of the work that has been performed in the framework of the BEAST, on the proposed wind-diesel Punta Jandía system, including the economic prefeasibility analysis, which shows the attractive return of investment that the proposed wind-diesel system could have for the Municipality of Pájara. The analysis also shows how from the perspective of the positive externalities that would be derived from the project implementation, the public support is justified in terms of reductions of CO2, and energy independence, and longtime price energy price certainty.

As a result of the workshop, the Canary Islands Institute of Technology (ITC), who promoted it acting as a BEAST project partner, assumed the responsibility for elaborating a basic engineering document needed to request the funding from the Regional program (ITC is a public R&D centre belonging to the Regional Government of the Canary Islands). The objective, agreed in the workshop, was to dispose of a document to strengthen the proposal to be submitted to the regional funds.

5. List of Participants

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Name	Organization	Position in the organization
Manuel Miranda	Regional Agency for Research, Innovation and Information Society – ACISI	Director
Marcial Morales	Island Authority of Fuerteventura	President
Natalia del Carmen Évora	Island Authority of Fuerteventura	Responsible for Environment
Rafael F. Páez	Island Authority of Fuerteventura	Responsible for Environment
Jordani Cabrera	Municipality of Pájara	Responsible for Industry
Eugenio Torres	Municipality of Pájara	Technical staff (Engineer)
Salvador Suárez	Canary Islands Institute of Technology	Head of the Renewable Energy Department

6. Agenda

- Discussions of existing barriers
- Presentation of wind-diesel project
- Presentation of the H2020 proposal for a hydrogen demonstration project
- General discussions

7. Dissemination material

 <p>WP3 – Action implementation Savvas Vlachos 23/10/2014 Cyprus Energy Agency Member Nicosia, Cyprus</p>	 <p>BEAST project dissemination material including QR code, project partners, and a group photo.</p>
<h3>PUNTA JANDÍA 2010</h3> <ul style="list-style-type: none"> • Residentes permanentes 36 personas (7 familias) • Media los fines de semana se eleva a 183 habitantes • Población en verano crece hasta una media de 465 habitantes • 75 viviendas censadas • 32 caravanas instaladas todo el año, ocupadas fundamentalmente los fines de semana. En verano el número de caravanas crece • Actividades industriales: el pueblo cuenta con tres bares <p>Alta estacionalidad en el consumo energía Los cambios en la población se traducen en gran diferencia en la demanda entre días de semana y fines de semana, y de invierno a verano.</p> <p>CANARAGUA está contratada por el Ayuntamiento para garantizar el suministro de electricidad y agua al pueblo (subcontrata a AMMETRONIC).</p>  	<h3>ESTADO DEL SISTEMA EÓLICO –DIESEL EN 2010</h3> <p>La mayor parte de los equipos instalados en 1995 se encontraban inservibles. Componentes, como los volantes de inercia y el aerogenerador se podrían aprovechar.</p> <p>AEROGENERADOR - 2010 VESTAS V27 de 225 kW. Generador asincrónico, y su potencia puede variar entre 50 kW y 225 kW.</p> <p>En su día se limitó la potencia del aerogenerador (control de pitch), a un máxima 150 kW. Se podría reprogramar para aumentar su potencia para atender actual punta de demanda.</p> <p>En 1995 se estimó su vida útil en 20 años y 100.000 hrs. Debía haber estado operativo hasta el año 2015. Durante el periodo de funcionamiento sólo operó 5.000 hrs.</p> <p>Lleva parado 13 años. No presenta mal aspecto a simple vista. Tiene los cojinetes de las palas atascados y hay que sustituirlos y para ello hay que bajar las palas.</p> <p>El coste de recuperación se estimó en aprox. 100.000 €. Con un "overhaul" a fondo se podría alargar su vida otros diez años.</p> 
<h3>FINANCIACION COMPLEMENTARIA</h3> <p>Necesidad de contar con financiación complementaria para componentes del sistema, no elegibles en la convocatoria europea (que sólo financia tecnologías del H₂).</p> <ul style="list-style-type: none"> • La Comisión cofinanciaría únicamente los componentes del sistema de H₂, pero no los componentes de los sistemas de generación con EERR • Lo prioritario 100 k€ para la puesta en marcha del aerogenerador existente (VESTAS V27 de 225 kW). • La Comisión espera ver al menos 500 kW de EERR en Punta Jandía, y el aerogenerador es de sólo 225 kW. Harían falta aprox. 300 k€ para la fotovoltaica (asumiendo un coste de 1 k€/kWp). <p>Las necesidad de financiación complementaria se estiman en 700 k€, para el reemplazo de los componentes deteriorados/obsoletos, del antiguo eólico-diesel ("overhaul") del aerogenerador de 225 kW; instalación de 300 kWp de fotovoltaica; grupo diésel de back-up, y adquisición de componentes de control, regulación y gestión de la microred.</p> <p>Se necesita compromiso firmado entre GOBCAN, Cabildo y Ayuntamiento de aporte de financiación complementaria</p> 	<h3>PROPUESTA PUNTA JANDIA: INTEGRACION DE TECNOLOGÍAS DEL H₂</h3> <p>Convocatoria: FCH-02.10-2016 "Demonstration of Fuel cell-based energy storage solutions for isolated microgrids or off-grid remote areas", Duración del proyecto: 3-5 años Financiación: 5 M€ Promueven:</p> <ul style="list-style-type: none"> • Agencia Canaria de Investigación, Innovación y Sociedad de la Información, del Gobierno de Canarias - ACIISI • Instituto Tecnológico de Canarias - ITC • Instituto Nacional de Técnica Aeroespacial – INTA • Fundación Hidrógeno Aragón - FHA <p>El Puertito de La Cruz en Punta Jandía se ajusta a la tipología de emplazamiento que busca la Comisión Europea para el desarrollo de la experiencia piloto: Un pequeño sistema eléctrico aislado, y su lejanía a la red eléctrica insular (20 km) nunca hará económicamente viable la interconexión. Además el emplazamiento cuenta con muy alto potencial eólico y solar, y gran atractivo turístico que daría visibilidad a la actuación cofinanciada por la CE.</p>  