Newsletter GreenCap

Energetic Model

Issue Nr. 1

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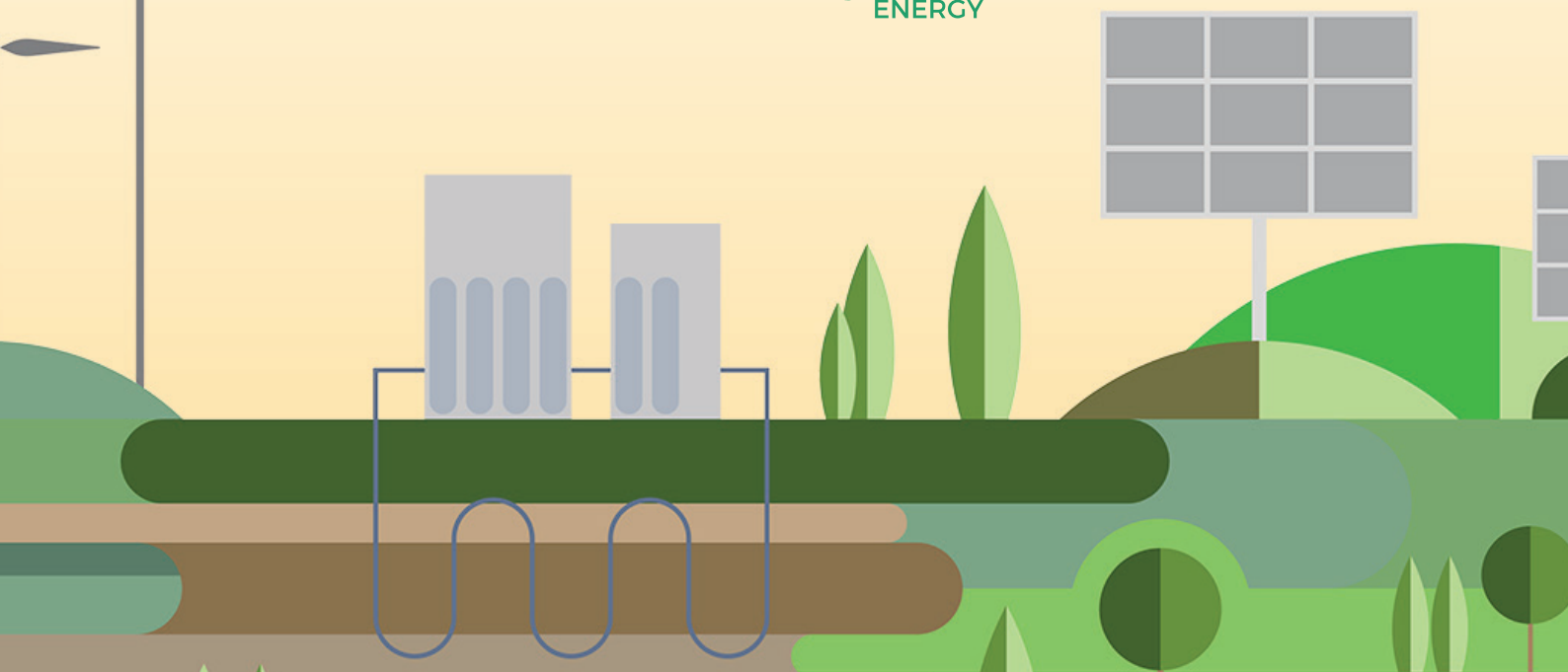

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editorial

Is it possible to achieve a new energetic model in the Mediterranean?

Dear reader,

This is the first edition of the GREENCAP Newsletter. GREENCAP is the horizontal project in charge of the Renewable Energy Community of Interreg MED. The purpose of this newsletter is to disseminate information about activities and to advance the Modular projects that are part of the RES Community, as well as to intercommunicate and research renewable energies within the Mediterranean region. The objective is to network useful information for the community and promote synergies between MED partners and stakeholders.

The Newsletter offers also a set of Special contents where readers can take a look into cases developed primarily in the Mediterranean region. In the first issue, we examine the energetic shift in two communities: Tilos, Greece, and the island of Cyprus. These cases are brilliant examples of the future of a renewable energy cluster in the MED region. We will also highlight the recent approbation of energy self-consumption in Spain as a step forward in energetic policies. This is a big step towards a more democratic, decentralized and sustainable energetic management, creating benefits to neighborhoods, associations and citizens by letting them connect to a single electricity generator.

LOCAL LEVEL AS A STRATEGIC CATALYST

Several studies have already shown that the transition to renewable energy has greater opportunities to succeed at the local level. Indeed, there is evidence that citizen-based and local political action is most effective in implementing renewable energy. The Mediterranean area is composed of countries with variable progress in renewable energy sources and in strengthening the local authority's competencies.

Society also have to get aware that it is in their own interest to accept and become part of the energetic transition. In Greece, for example, since 2010 a significant percentage of the renewable energy special tax retained by the Hellenic Transmission System Operator is redirected to the local communities. This kind of measure, implemented at the local level, is a good way to ensure that citizens will engage to the cause of renewable energy. Certainly, there are several barriers to the development of a new energetic model, whether they be political, juridical or sociological. But more initiatives like these should be encouraged in the Mediterranean area, and the successful cases should serve as examples for other countries.

In summary, the future of renewable energy in the Mediterranean needs strategic synergies to build a cluster able to strengthen an economy based on a knowledge society and minimizing resource consumption, involving a real change both in states' regulation frameworks and in citizens' awareness.

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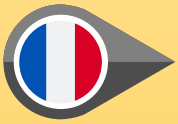


Axelera
www.axelera.org

Patras Science Park S.A.
www.psp.org.gr

what's new in our Community

Greencap Kick-off Meeting

March 2017, Turin

On March 7th – 9th was held the Kick-off Meeting of the horizontal project GREENCAP, which is part of the Interreg MED platform. The project aims to develop the capitalization of the renewal energy community made up by the modular projects StoRES, PRISMI, LOCAL4GREEN, COMPOSE, PEGASUS and ForBioEnergy.

The venue was hosted by Environment Park located in Turin City. The first day the GREENCAP partners met to update the activities of the project and define the strategy to be developed in the coming months. Danilo Čeh, from BISTRA, project leader, explained in detail the requirements for the submission of reports and the procedure that should be followed. The members of the meeting were representatives of every partner organization (ENVIRONMENT PARK , AXELERA, ZEDA, PATRAS SCIENCE PARK AND BCNECOLOGIA), and were accompanied by some associated partners: Maria Tsarmpopoulou of CRES, Yolanda Lechón from CIEMAT, Amra Mehmedic from City of Zeneca and Alberto Giaconia of ENEA.

On the second day were present representatives of the six modular projects. From COMPOSE project, Sergio Andreis (Kyoto Club); from ForBioEnergy, Fabrizio Miserendino (Sicily Region); from PEGASUS, Marco Caponigro (Comune di Potenza); from LOCAL4GREEN, Francesco Filippi (Mussol) and Andrea Vignoli (Anzi Lazio); from PRISMI, David Astiago (Sapienza University) and from Stores, Eliza Loucaidou (University of Cyprus).

The third day was held the first session of the thematic working groups divided into the following topics: Biomass value chain, Green fiscal policy, Local renewable, Energy mix and Near zero building.

The working days unfolded in a positive environment and with much interest in establishing mechanisms suitable for community building to obtain the maximum of synergies in the coming years. Nicolás Garnier, commissioner of the Board of the Interreg MED, attended the whole meeting and helped to highlight the main objectives of the MED platform and strategic scope of the program.

We are MED

May 2017, Alicante

On May 17th was held the We are MED event organize by Interreg MED Programm and the venue was hosted by University of Alicante. The aim of the event was to work together on a common work methodology and build a strong Interreg MED Community.

All representatives from horizontal projects present their thematic communities, the modular projects involved and the main guidelines they are following for communication and capitalization. Working groups where organize in order to make a SWOT analysis for communication and methodology strategies.

Finally, agreements between the partners of the modular and horizontal projects were signed in order to establish a commitment of collaboration during the development of the project.

The day before, partners from Low Carbon Economy Horizontal Projects: GREENCAP, GOSUMP and MEDNICE met to exchange some ideas for methodological synergies during the development of the projects. One of the relevant conclusions was to work together on the same policy recommendation report in order to strength its impact at political level.

Win win solutions

Sergio Andreis

The 2nd COMPOSE partners' meeting took place last 13-15 June in Rethymno, hosted by the Technical University of Crete Colleagues and with the participation, for the GreenCAP project, of Gerasimos Mentzelopoulos, from Patras Science Park.

In Rethymno we reviewed the work being carried out in 11 countries, planned the next steps for the successful project continuation and assessed the current EU post-Paris Agreement renewable energy sources (RES) and energy efficiency (EE) developments. Lučka Kajfež Bogataj, Climatologist at Ljubljana University, IPCC Member and COMPOSE Ambassador, shared her thoughts on the future of energy and stressed the need to improve energy literacy.

It is a crucial time for the whole Interreg MED Renewable Energy Community: readers may remember that on 30 November 2016 the European Commission presented the Clean energy for all Europeans proposals, with the European Parliament repeatedly asking for 2030 RES and EE targets higher than those proposed by the Commission .

On 26 June 2017 Energy Ministers found an agreement, a so-called General Approach, on watered-down revisions of both the Energy Performance of Buildings Directive (EPBD) and the Energy Efficiency Directive (EED) and the final EPBD and EED decisions are expected for 2018, after the compromise process among the European Commission, Council and Parliament.

Maroš Šefčovič, Vice-President of the European Commission in charge of the Energy Union , has undertaken, in all Member States, the Energy Union Tour and his calendar is available on https://ec.europa.eu/commission/priorities/energy-union-and-climate/2017-energy-union-tour_en#country-visits.

As Community we should use the opportunity to meet him, learn, share our experiences and advocate, with him and with our national Governments, for an ambitious revision of both Directives and for increased support to RES: because RES and EE are win win solutions to overcome the current climate crisis, support research & innovation, create new jobs and have higher daily living standards.

1. https://ec.europa.eu/energy/en/news/commission-proposes-new-rules-consumer-centred-clean-energy-transition
2. http://www.europarl.europa.eu/atyourservice/en/displayFtu.html?ftuId=FTU_5.7.4.html
3. http://www.consilium.europa.eu/en/meetings/tte/2017/06/26/
4. https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/building-energy-union

PRISMI

Promoting RES Integration for Smart Mediterranean Islands

PRISMI project aims to support local authorities of Mediterranean islands in planning their transition towards low carbon and climate change resilient energy systems in a cost-effective way. To do so PRISMI aims to develop an integrated toolkit (based on a transnational approach) able to assess and map RES for the targeted elaboration of energy scenarios and techno-economic feasibility analysis. Important is the will to take a transnational approach thus the project envisages six investigation areas characterized by different environmental, economic, energy and landscape features: the island of Favignana (Italy), the islands of Korčula and Vis (Croatia), the island of Tilos (Greece), the Akamas Peninsula (Cyprus) and the island of Gozo (Malta).

Regarding the management (WP1) and the communication (WP2) sections a succesfull Kick of Meeting has been organized (the Project communication plan has been approved) and much of the website material is ready to be published (the 1st project leaflet has already been translated and printed). Currently the Mid-term Meeting is being organized, here results will be presented and approved, and the path for the next steps will be discussed. In particular about the Studying section (WP3), the methodological guidelines for assessing and mapping the RES potential have been accepted, the thematic data collection can be considered completed (all the partners have gathered a satifying quantity and quality of data as GIS and hourly data about RES potential). A RES state of the art analysis and an accurate SWOT analysis have been conducted in order to head the energy scenarios modeling.

Great steps forward have been made in the establishment of a stakeholders' network. Several main players in RES field have now officially joined the Members Network and a representative from all of them will join the Mid-term meeting.

One of the next steps will be launching the 1st survey to local administrators and stakeholders interested in the RES world.

https://prismi.interreg-med.eu
www.facebook.com/Prismi-project-249321535489626/
www.researchgate.net/project/PRISMIPromoting-
RES-Integrat ion-for-Smart-
Mediterranean-Islands

StoRes

Promotion of higher penetration of distributed PV through storage for all

StoRES addresses the development of an optimal policy for the effective integration of Photovoltaics (PV) and Energy Storage Systems (ESS) in order to allow for increased penetration of PV in the energy mix of islands and rural areas in the Mediterranean (MED) region. The main challenge is to allow the further deployment of small residential PV systems and solve all the technical and financial implications that restrain the further utilization of ESS in the distribution grid.

A number of small Residential Storage Systems (RSS) was selected in each of the participating pilot regions (Cyprus, Greece, Italy, Portugal, Spain) where local particularities and requirements were taken into consideration. A selection process was developed and implemented in each region in order to identify the pilot sites. The process was mainly focused on households with existing residential PV systems with a typical energy profile. The process output showed the diversity of PV capacities of the pilot systems, confirming the different legislative framework that exists in each region with various upper limits on the maximum allowable installed PV capacity. This will be an important input for testing and validating the optimum utilization and sizing of storage systems and will eventually lead to higher rates of self-consumption [1] and even higher PV penetration [2] in the participating regions.

Further to this, StoRES foresees the development of a Community Storage System (CSS) which will be implemented only in Cyprus. The CSS will be installed in a preselected distribution feeder that supplies the residential pilot systems. Consequently, by taking the necessary measures, a credible comparison between distributed and centralized storage will be performed in order to identify the optimum sizing for community and domestic storage systems. Finally, possible storage services will be examined in order to eliminate the barriers related to the intermittent nature of renewable sources and the integration of ESS to the public grid [3].

1. F. Vieira, P. Moura, A. de Almeida, Energy storage system for self-consumption of photovoltaic energy in residential zero energy buildings, Renewable Energy, Volume 103, Pages 308-320, 2017
2. A. Zahedi, Maximizing solar PV energy penetration using energy storage technology, Renewable and Sustainable Energy Reviews, Volume 15, Issue 1, Pages 866-870, 2011
3. J. Weniger et al, “Sizing of Residential PV Battery Systems,” Energy Procedia, vol. 46, pp. 78-87, 2014

HP TALIA
Social & Creative Community

International Seminar

June 28th – 29th 2017, Barcelona Spain

On June 28th to 29th, the Horizontal Project TALIA held the International Seminar: "Co-working evidence in the creative and cultural industries" in Barcelona.

The aim of the seminar was to involve the participation of modular projects from the Social & Creative thematic community, as well as associated partners and stakeholders in the thematic area. Léonard Lévêque (of the Coworkmed project) and Nuno Vaz Silva (JS Project Officer) initiated and mediated the seminar, followed by representatives of TALIA project: InnovaPuglia and ENoll. Jesse Marsh from ENoll, offered a perspective regarding different methods to achieve innovation and creativity. He also highlighted the culture of the Mediterranean area, as an example of natural creativeness and its public space as a key urban feature to build community.

Each modular project from Social & Creativity Community exposed their objectives and their visions of co-working strategies. Most of the debate was focused on how features of co-working were crucial in various fields: smart factories, territorial dynamisation, innovation and social transformation. The topics and scope of the seminar were categorized accordingly: physical characteristics, composition and management, and business/economic impact. In regards to physical characteristics, most of the assistants agree in an open and flexible design model that allows people to co-operate and inspire each other.

The COWORKMED project encouraged the physical relevance and supports tactical, hybrid co-working spaces. In regards to composition and management, many agree that social and activity diversity maintain equilibrium between collaboration and competition, which creates an encouraging and effective innovative space.

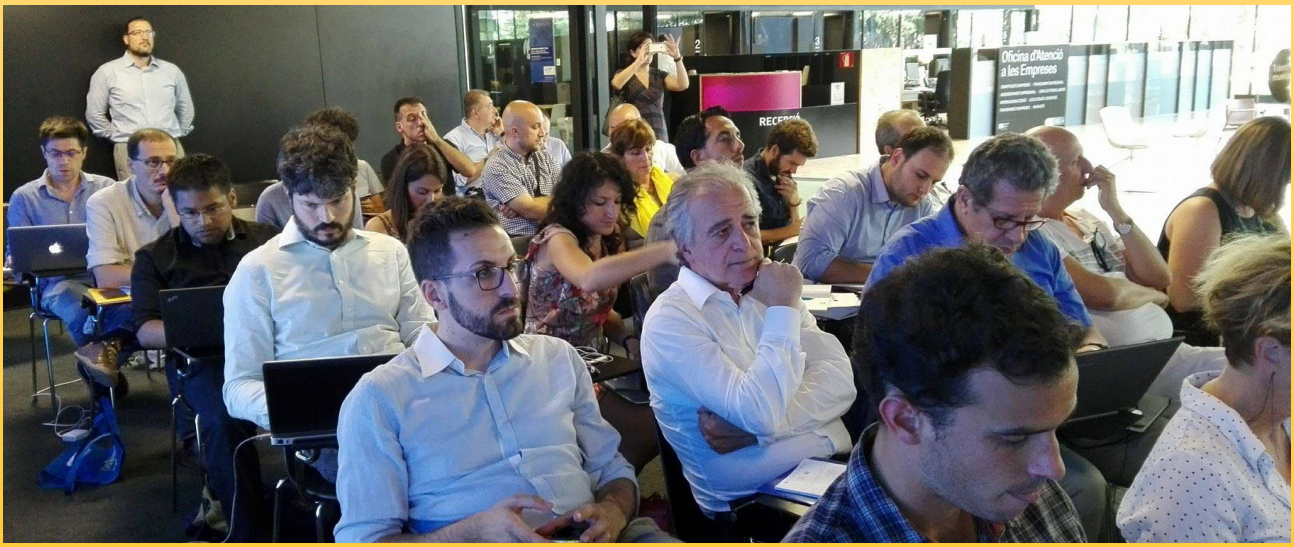
Finally, for the business context, the panelists agree that co-working systems require economic clusters and diversified networks to increase respective market values. The SMACK project encouraged networking and managing tactics in order to procure a cohesive co-working community, in which the whole is greater than the sum of its parts. Other interesting projects were presented such as TheQube and IEMed, which demonstrate the value that co-working tactics provide.

The seminar involved the participation of the Horizontal Project Greencap, which contributed to the debate from a holistic angle, highlighting the relation between co-working communities within the renewable energy sector.

http://talia.guadalinfo.es/

http://www.sistema.puglia.it/SistemaPuglia/talia

http://www.ascame.org/en/talia-med-project-co-working-evidence-creative-and-cultural-industries



Green Growth Community

Transnational Event:
New Challenges in the Agrofood Sector
28- 30th June 2017, Girona (Spain)

The Green Growth Community, organize from 28- 30th of June the Transnational Event: "New Challenges in the Agrofood Sector" which was held at Girona. The aim of the event was to gather the whole Green Growth Community and relevant stakeholders of the Mediterranean area and other European Regions to jointly discuss about the new challenges that the sector is facing nowadays. Greencap attend the event and the Horizontal Project Meeting held in the same venue.

Workshops and round tables were classified in five topics . Considering our very particular interest for the development of renewable energy sources, Greencap attended the following workshop and roundtable: Methodologies for sustainability assessment in the agro-food and energy sectors on the one hand, and Clusters and business development on the other hand, moderated by a representative of the Italian National Agency for new Technologies, Energy and sustainable economic development (ENEA). The objective of the group was to discuss about GRASPINNO and PEFMED methodologies. The first one, aims to improve the energy efficiency of their buildings based in a Life-cycle Costing. It is a cost and benefits assessment system for investment or a tender, taking into account the environmental externalities. Although the efficiency of this tool, its application among public administrations is still limited, because of its complexity. PEFMED applies the "Product Environmental Footprint" methodology, that is a "multi-criteria measure of the environmental performance of a good or service throughout its life cycle. PEF information is produced for the overarching purpose of seeking to reduce the environmental impacts of goods and services taking into account supply chain. " PEFMED applies this methodology to more than 100 companies of the agro-food sector in more than 9 countries of the MED area. The discussion enabled to highlight a common desire to implement these methodologies, but the main obstacle for them is the lack of clarity and of visibility in the requirements.

Clusters and business development roundtable discuss about how to promote cooperation but also competition between its different components, which are all part of a same sector. This mix between cooperation and competition is called "coopetition" and the objective is to create opportunities.

Topics are really close-related to RES, because their implementation depends mainly on the economic opportunities it represents for the different actors involved. Also, a reinforced cooperation between different actors is very desirable in order to facilitate their development. Consequently, a consolidate renewable energy cluster represent an interesting alternative to encourage.

Agenda of the event:
http://mon.uvic.cat/ct-beta/new-challenges-in-the-agrofood-sector-agenda/

key events

2nd International Conference on Green Energy Technology ICGET 2017
July 18-20, 2017
Rome, Italy
http://www.icget.org/

EXPOBIOMASA 2017
September 26 - 28 2017
Valladolid, Spain
http://www.expobiomasa.com/

9th EUROPEAN SEMINAR
Offshore Wind and other marine renewable energies in Mediterranean and European seas.
October 11-13, 2017
Bari, Italy
http://www.owemes.org/

AETP 2017
Almacenamiento energético; tecnologías y proyectos
October 19, 2017
Madrid, Spain
http://www.energetica21.com

BioEnergy Italy 2017
October 25-28, 2017
Cremona, Italy
http://www.bioenergyitaly.com/

Key Energy 2017
Nov 07-10, 2017
Rimini, Italy
http://www.keyenergy.it/

Ecomondo – The green technologies expo
Nov 07-10, 2017
Rimini, Italy
http://www.ecomondo.com/

SMART CITY EXPO WORLD CONGRESS
November 14 - 16, 2017
Barcelona, Spain
http://www.smartcityexpo.com

A Model Mediterranean Island

Tilos, Greece 2017

Tilos is a small Dodecanese island in the Aegean Sea. An ambitious energetic shift is set to replace the current oil-based system entirely with renewable energy, depending solely on wind and solar energy and a localized microgrid. The island has a history of regard for the natural environment, however is about to set an example in island energy security that will make history.

The strategic and technological context of Tilos´ energetic model is impressive. In the past, the Island has heavily relied on fossil fuel energy, mainly transported underwater via a cable from nearby island, Kos. However, the project will implement a hybrid wind and solar farm, alongside a battery station and smart microgrid. The model is the first of its kind in the country, and is located on one of the windiest and sunniest island regions in Europe. The system allows grid-connected as well as stand-alone energy production; so it could even begin displace fossil fuel energy in the island of Kos, a leading consumer in the region.

Tilos´ historical transformation to sustainable energy and the local community´s environmentalist attitude serves as a model for people around the world. The island was chosen for the 2017 EU Sustainable Energy Award, and has garnered world-wide attention. The energetic model, climate, location, and sheer geologic beauty of the island are cause of substantial eco-tourism. However, the model effectively predicts and prepares for correspondent peak energy loads, and endears even visitors to environmentalism.

The project plans to economically shift the demand for energy away from fossil fuels in entirety. The European project Horizon 2020 has been fully embraced by the population of Tilos, who vies to immediately cover 70% of the energetic demand upon installation, as well as entirely cut fossil fuel consumption within a few years. The positive publicity and triumphs thus far give the mayor hope for solar powered street lighting, electrical vehicle implementation, as well as steadily increasing eco-tourism.

The project did not have a profound political context; however it highlights a few important features for the future. The mayor played a considerable role, but the project was largely propelled by European directives, and a wider project (Horizon 2020) involving 13 partners from seven countries. Moving forward, any integrated energy policy must consider national, local, and sectoral energetic needs, as well as researched exclusion zones and developmental plans so as to maximize efficiency, and protect the natural and human environment.

Integration of Renewable Energy Technology:

Cost Effectiveness and Compliance

Cyprus is in the process of changing its energetic model by reducing its reliance on imported fuels. The island has struggled fiscally in recent years and their dependence on outside countries for reliable energy sources is not contributing to a sustainable economy. Economic adversity and their membership to the European Union (EU) have driven them to search for "a cost-optimization approach" to change the means by which they receive and ultimately consume energy.

The European Union has proposed that all twenty-seven of its member countries comply with the agreement (Horizon 2020) wherein the countries within the coalition utilize at least 20% renewable energy by the year 2020. This arrangement stemmed from a desire to put an emphasis on utilizing energy sources that are sustainable for years to come. To contribute to this goal the EU has requested that Cyprus implement 13% renewable energy usage by the year 2020.

Cyprus is an island country which depends on surrounding regions to supply fuel for the purposes of electricity production. Its heavy reliance on neighboring countries puts the cost of energy in the hands of Cyprus's providers. All of the countries in the EU are required to work toward the organization`s, but for many of the other countries it is an easier task than that dealt to Cyprus. After Cyprus experienced a financial crash in 2013 many banks closed making it much more difficult for renewable energy plants to receive loans. Although Cyprus has received assistance from the EU in their quest to overcome the deficit, there is no doubt that it will still be difficult for them to accomplish the goals set by the European Union.

However, Cyprus has already made large strides toward an economically feasible energetic model. To achieve this feat they have begun to change how they consume energy. The island's largest investments toward modifying their energy usage are the construction of sizable renewable energy farms. Namely, the development of solar PV parks and wind farms has contributed to the switch to renewable energy usage. There are six wind farms currently producing energy on the island. Together, they have the capacity to produce 158 MW as of 2016. This is the result of 92 turbines on the wind farm campuses.

In addition, Cyprus experiences sunlight a majority of the year signifying that they have the capability of producing ample amounts of energy from solar farms. As of 2016, the construction of six solar PV parks are underway. It is already projected that the change will bring about financial benefits to Cyprus. The island already has the highest per capita usage of solar water-heaters in households and the nearly 1,184,800 citizens are receiving about 9.8% of their electricity from renewable energy sources.

Spanish Constitutional Court approve the self-consumption in Spain

Madrid, Spain

In Spain, until June 2nd 2017, self-consumption of energy was not allowed in shared buildings, in virtue of the article 4.3 from the Royal Decree 900/215. This article mentioned expressively that in any case a generator will be able to be connected to the internal network of various consumers. In other words, people living in different flats in the same building could not consume the energy from photovoltaic panels that they would have installed on the roof. Therefore, the production of renewable energy for self-consumption from photovoltaic in shared buildings was directly disqualified.

The Law office Holtrop Transaction and Business Law had already appealed several times against this provision to the Supreme Court, without receiving a positive verdict. But in February 2016, the Generalitat of Catalunya appealed against this disposition to the Constitutional Court, which gave a verdict that should open the path to the development of self-consumption in Spain. Indeed, the Court declared void the relevant article from the Royal Decree, but also other articles.

The Generalitat of Catalonia declare that there was a conflict of competence between the State and the Autonomy. According to the Generalitat, the State had no right to introduce such a ban, since it stepped over the shared competence of the Autonomy. The Court accepted this argument and declared that article 4.3 of the Royal Decree 90/2015 was thus unconstitutional. According to the claimant, the articles from the Constitution on which the national government had based the decree in question could not be applicable in this case.

These articles are 149.1.13a and 149.1.25a and mention that the State has exclusive competences respectively on basis and coordination of the general planning of the economic activities and on basis of the mineral and energetic regimes. They were denounced as being irrelevant because the installations in question, namely the installations of self-consumption related to several consumers, are too little powerful to have organizational and economical consequences. The Court dismissed indeed these two articles. Moreover, the Court stated that this prohibition kept Catalunya from developing renewable energy sources in a way that is in accordance with the European objectives for 2020.

As a result, there is hope that such a decision from the Constitutional Court is the starting point of the development for shared self-consumption in Spain, which could be really significant considering the important part of the population living in shared buildings. Indeed, with the cancelation of these articles, neighbors living in a same building will have the opportunity to share the costs of the installation of photovoltaic panels, and also to see their electricity bill reduce. In 2015, Spain was ranked by Eurostat as the first European country in number of people living in flats.

Therefore, this decision is a major one for the development of RES in the country. It also helps to show how important the local level can be for the spreading of RES. Although there is still progress to be made in order to reach a new energetic model in the Mediterranean area, it is undeniable that there is a real raise of awareness concerning RES and the necessity to develop local policies on this topic.

RES Community will have the oportunity to hear the experience of Piet Holtrop in first person during our next meeting of September in Barcelona.

http://www.holtropblog.com/es/images/PDF_files/SENTENCIATRIBUNALCONSTITUCIONAL.pdf

Crucial Steps towards Sustainability: A Shift from Fossil Fuels

Lochem, Netherlands 2014

The municipality of Lochem, in eastern Netherlands, features a citizen driven effort to incorporate renewable energy into an existing network of energy production. The local government has tasked reaching 14% renewable energy by 2020 (from 4%), which is a modest goal in comparison to other European municipalities. Lochem Energie, a local cooperative, has its own goal where the area will become self-sufficient on renewable energy by 2030. However, the strong lobbying force by the fossil fuel industry presents challenges to the movement that are critical to understand for the global shift to cleaner energy.

ACTION, EDUCATION, AND COOPERATION

The local energy initiative that became Lochem Energie contained over 1000 private households, interested in implementing renewable energy production. The initiative focused on business and technological aspects such as the installation of photo-voltaic panels and thermal insulation in homes. The group has also facilitated numerous outreach and educational seminars and meetings, as well as an initiative to allow residents to test electrical vehicles. These have proven successful in many regards, and the number of people interested in renewable energy, apart from the movement or not, has steadily increased alongside the number of electrically powered vehicles. The technological exposure and educational outreach forged a community that welcomed positive change.

The public official (alderman), who played a significant political role as well as a founding role for the initiative, facilitated many synergistic relationships among the community and with the local government. These connections covered social aspects such as education and communications. The most notable aspect was the alderman´s joint role in taking part of the initiative, while also incorporating important political actions to bring about the communities interests. While the initiative began and developed organically through citizens, Lochem Energie´s success at the national level showed the importance of promoting synergies between civil society and government bodies in shifting to renewable energy.

POLICY MATTERS

Despite the social and economic challenges facing Lochem, it maintains high expectations and demonstrates a model local energy initiative with a globally-relevant context. Energy in the Netherlands has always been highly business-oriented, as set forth by the profitable fossil fuel businesses that have dominated the energy landscape.

Financially, Lochem Energie is supported mostly by citizens, local businesses, renewable energy stakeholders, and the local government. The competition with highly influential non-renewable energies, as well as trouble allocating volunteer-work and prioritizing interests within the group, hinders progress towards making renewable energy economically viable.

It is therefore critical to focus efforts on changing the public and political discourse regarding sustainability, and to prioritize receiving grants, subsidies, and other government assistance to enable progress. The economic model for renewable energy is largely as it was prior: developing top-down plans and policies focused on specific energy methods, and allowing capitalistic forces to drive the development. Economic viability is crucial for any energy initiative and fossil fuels have met the demand for energy, however the environment must take precedent when considering the long-term energetic model.

A Shining Citizen Effort

Brixton, UK 2013

Brixton Energy is a non-profit, cooperative initiative for the implementation of renewable energy in the South London area of Brixton. 'Repowering London' is the organization that facilitated the setup of Brixton Energy Solar 1, Solar 2, and Solar 3, which are citizen based cooperative initiatives that demonstrate a best practice approach: an implementation of a renewable energy that is citizen sourced, focused on mitigating energy poverty, and improving efficiency while educating the youth for the future.

REDUCING CO2 EMISSION: A COOPERATIVE EFFORT

'Repowering London' specializes in facilitating renewable energy projects that are co-produced and citizen owned. 'Solar 1' involved the installment of a photovoltaic power station on the roof of Elmore House on Loughborough Estate. 'Solar 2' saw the installment of solar electric panels on the roofs of Style Gardens, collectively responsible for saving 16 tons of CO2 emissions yearly by displacing energy produced from coal and gas energy stations. Finally, 'Solar 3' saw a similar approach, and solar panels were installed on four buildings in the Roupell Park Estate, which saves 22 tons of CO2 by the same reasoning.

The group ´Repowering London´ fulfils all technical, legal, financial, and administrative requirements to implement each project; it manages the development process, and also mediates the large network of potential investors. It is comprised of 11 employees, and is supported by several hundred hours of volunteer time. The successes demonstrate model synergies between a non-profit mediator, investors, and citizens making sustainable developments at the local level. The first project was the UK's first inner-city, co-operatively owned renewable energy project, which stressed the importance of cooperation between the local government and stakeholders, while focused on the needs of individual citizens.

A PLAN FOR THE FUTURE

The economic model accounts for short-term action as well as long-term sustainability. Funding and resources were initially sourced by local and national government grants such as the Greater London Authority Low Carbon Zone fund, the Department of Energy and Climate change, the Local Energy Assessment Fund, the Carbon Energy Saving Program, and the Lambeth Council. The economic model implemented in this case is admirable. Primarily, it aims to catalyze green development in the short-term by including various policy arrangements and subsidies. However in the long term, the aim is sustainability as shown by a shift to green energy and a lack of reliance on the local government or grants for further developments.

Various political developments were involved in the case. Effectively, a fifth of the net profits for each project are set aside for the Community Energy Efficient Fund, which is set up to support energy saving, to perfect resource allocation, and to promote energy efficiency. The fund represents the preliminary steps to becoming a platform that is independent of government subsidies, and capable of moving forward with similar projects. Furthermore, a tax benefit for cooperatives and investors incentivizes sustainable development and energy mobility.

The financial and energetic model prioritizes social housing where energy poverty is an issue, which creates an effective and inclusive cycle of building energy resilience at the local level. In both the short and long term, this plan perfectly utilizes citizen effort and the local government to bring forth a plan in which citizens are truly the beneficiary.

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