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PEER REVIEW 11 – 15 JUNE 2018, VALENCIA, SPAIN

REPORT

1. INTRODUCTION & FOCUS OF THE PEER REVIEW

The Peer review Team included representatives from: Oldham/Greater Manchester, UK; Abruzzo, Italy; Hajdu-Bihar County, Hungary; Lake Constance, Germany; Prahova, Romania; Sofia, Bulgaria.

COALESCCE stands for Community Owned And Led Energy for Security, Climate Change and Employment (or Economy). Community owned and led energy is referred to simply as "Community Energy", and refers to renewable energy projects which have been conceived, developed, financed and delivered by a collection of citizens acting together as a community group.

Because community energy projects are in the main motivated by a desire to make a positive contribution to the fight against climate change, rather than primarily for making money, they have a number of advantages over renewable energy projects delivered by the private and public sectors (although the public sector can legitimately be said to be a member of the wider community and a key stakeholder in community energy).

Community energy can deliver energy security at a very local level, due to the local ownership and management of individual projects and the local distribution of energy generated by them. It can also deliver carbon emissions savings that are missed by private and public approaches to renewable energy because communities are generally interested in smaller, local projects which have a local relevance and benefit (such as solar PV on community owned buildings) that energy companies and local authorities are not generally interested in. When amalgamated, these smaller community projects can yield significant carbon savings. Finally, the local supply chains used in the construction of community energy projects, and the local ownership of these projects, means that the local economy benefits much more than larger projects where technical teams are brought in from outside the locality for construction, and ownership is generally at regional or national level.

The Peer Review considered what benefits could be realised from a strengthened community energy sector in Valencia. These included:-

<u>(Energy) Security</u>

- Fuel poverty – grants available to community groups, awareness raising / behaviour change for citizens
- Competitive businesses – cutting their energy costs

Climate Change

- Communities develop smaller projects which are often overlooked by energy companies and public decision makers – often roof space for solar PV which is biggest ambition
- Electric vehicle co-ops can tackle emissions from transport which is the biggest challenge
- Locally produced energy (where it is consumed) is more efficient – community energy ideal to meet self-consumption targets
- Engagement of citizens in the issue of climate change, may not happen under 'top down' approach

Employment (Economy)

- Community energy projects use local supply chains
- Community ownership keeps value of energy sales locally
- EU Energy Performance in Buildings directive was introduced 17/4/18 – community energy ideal to deliver
- From the EU directive: "For the EU as a whole, total employment is expected to increase by +0.25% (approximately 568,000 jobs) by 2030."
- Low carbon transition – community energy can upskill citizens for the job market

A feedback meeting was held in Valencia on 14 June 2018.

1.1 Specific questions the Host Region asked the Peer Review Team.

1) How can we raise awareness among local people concerning community energy, and among local governments?

2) How to enhance cooperatives in the field of energy.

3) Which cooperation and business schemes are most suitable to foster community energy projects?

1.2 Specific outcomes the Host Region expected to achieve from this Peer Review

1) Recommendations on measures and actions that can be taken at the regional level, to support development of projects on community level helping them to become self-sufficient and sustainable in energy.

2) Recommendations on cooperation and financing schemes that can be promoted to support consumers and communities in becoming more active in the energy market.

2. FEEDBACK

The Peer Review team reflected on findings at the end of each day. The morning of 14 June was spent discussing the findings and recommendations.

The SWOT analysis conducted produced two main themes; Communication and Business Models / Finance. Findings and recommendations were therefore presented along these themes and good practice examples were also provided.

Each section notes good, positive or interesting practice

2.1 Communication

Good Practice observed in the Peer Review

EU-funded behaviour change projects already exist and are showing significant savings.

ENERCOOP – an information support network for energy co-ops is already established.

The Peer Review group visited a rural farming co-op, which was a fully operational educational centre demonstrating all aspects of sustainability.

Challenges observed

There is a lack of awareness and understanding of the wider concept of community energy, with no clear definition that would enable people to engage on this basis.

There are no longer term sustained behaviour change campaigns for citizens to maintain savings made by current successful projects.

There is no communications strategy for citizens to take advantage of current & future opportunities around community energy.

Opportunities

There is a new plan under development to promote Electric Vehicles around Valencia – IVACE can input from a community energy perspective.

Municipalities could compile a register of potential energy projects which large energy companies are not interested in.

The pilot district heating / cooling scheme in Portell de Morella can be disseminated to existing energy co-ops.

Opportunities arising from changes in legislation can be communicated to citizens, as well as opportunities from currently existing incentives.

There are opportunities for the housing & energy departments of IVACE to work together.

Recommendations

1. The 2030 strategy should contain a chapter on community energy

2. A partnership between IVACE and ENERCOOP, Union Renovables Coop etc should be considered to develop a new community energy support network
3. Promote new term for community energy - "Energia por y para los ciudadanos" (energy for citizens and by citizens) – along with social, environmental, economic benefits

Transferable Good Practice from COALESCCE partners relevant to these recommendations

1. Community Energy England: networks & support

Community Energy England https://communityenergyengland.org/ is the umbrella organisation for community energy organisations in England (it has sister organisations in Scotland and Wales). With just three staff, it is funded through membership fees, corporate members and through charitable funding to provide support to groups, and representation and lobbying to government and the regulator. It holds events to help groups share best practice and understand regulation and has brought in both Distribution Network Operators and also some small independent energy supply companies to innovate with community energy groups. It also has a Community Energy Hub website where case studies can be uploaded to share.

2. Told village bio-briquette scheme

In Hungary, Told is a small Roma village with 500 inhabitants, mostly unemployed and living in extremely poor conditions. A foundation was set up by a few enthusiastic volunteers living in a nearby small town to engage and educate the inhabitants of Told to change the culture and create a self-sustaining community in the village, and this foundation set up a scheme to help provide home heating. They built some simple manufacturing machines and involved the local Roma people in making briquettes from paper and an agricultural by-product – straw from a local farm, donated free of charge. Within six months the project had made 70,000 briquettes to enable the Roma people to heat their homes. In 2018 they are even considering installing larger machines and increasing production to reach more homes and even in other neighbouring villages. A small, but classic community energy project.

http://www.badurfoundation.org/project-details/bio-briquette-production-pilot

3. Solar energy heating district (optionally cooling)

Example of a solar thermal district heating is situated in the very south of Germany surrounded by the swiss boarder. In 2013, Büsingen installed a small renewable heating grid with solar thermal and biomass boilers as core technologies. The heating grid is supplied with a 1,000 m² ground-mounted collector field, about 90 m² facade collectors as well as two biomass boilers with 450 and 900 kW thermal capacity. In the summer, the solar collectors supply most of the heat. In winter heat is supplied by the biomass boilers. This saves woodchips and increases the service life of the boilers, since they do not have to run continuously. The flow temperature of the heating grid is between 75 and 80°C and the return flow temperature is about 50°C. The share of solar thermal energy is about 13%.
Solar thermal for cooling:
The sum of global irradiation in Spain is approx. 80% higher than in the south of Germany. This makes solar thermal energy particularly interesting. The high global irradiation in the summer months results in high energy consumption for buildings air conditioning. It is possible to use the solar thermal system and distribution district by absorption/adsorption technology for cooling. First projects at Güssingen / Austria have proven a successful implementation.

4. Renewable energy tours

From Germany - guided tours visiting different energy related projects and sites. Each tour is organized like an excursion / field trip demonstrating the project by a guide (optionally together with the project contact). Small groups of participants are transported with buses to either a variety of renewable energy projects or specific projects e.g. solar, according to the needs of the tour programme. There is a once a month one tour open to the public (at no charge) as well as guided tours for groups available, at a small fee.

This example from Germany is organized by a citizen owned energy Service Company (Solarcomplex), and destinations can take different approaches, e.g. Energy Service Companies, Energy cooperatives, community energy, municipalities, Energy suppliers. Examples of Destinations: bioenergy village, heating district, biogas plant, Photovoltaic (open space & roof systems), wind farm, hydro power plants, solar thermal plant, wood-chip or pellet heating.

4. UK national Community Energy Strategy

https://www.gov.uk/government/publications/community-energy-strategy

First published 27 January 2014, the strategy was the first ever Community Energy Strategy published by a UK government. It set out the role that communities can play in helping to meet the UK's energy and climate change challenges, including supporting a sustainable and secure energy system; reducing UK greenhouse gas emissions; and lowering consumer bills.

Although the strategy was updated in 2015, subsequent governments have not updated it and although the strategy remains a guide for UK policy, community energy has not been prioritised in recent legislative rounds.

2.2 Finance and Business Models

Good Practice observed in the Peer Review

Energy co-operatives do already exist, both old and new.

ESCO models exist for condominium block retrofit and municipal authority schemes.

A good practice example illustrating crowdfunded solar PV on an eco-hotel was observed.

Electric Vehicle car sharing organisations already exist.

Challenges observed

Current legislation limits the possibilities for community energy.

The Valencia Sustainable Energy Strategy assumes that 170MW of solar PV capacity will be delivered – sites need to be identified.

It is not known if rural municipalities own or run transport schemes for older populations on lesser used routes – maybe there is potential for Electric Vehicles here?

Opportunities

Forthcoming changes in legislation should enable solar PV in condominium blocks under a community ownership / supply model.

Community owned solar PV on publicly owned buildings could also happen, if collaborations between municipalities and community groups takes place.

Banks pay very low returns at present so community energy schemes are financially attractive for private investors.

Recommendations

1. IVACE to keep register of potential projects with returns too low for big companies but sufficient for community
2. When the law changes, IVACE to lead pilot schemes:- 1) municipality working with energy co-op / community group based on Oldham model 2) community owned condominium block retrofit including solar PV and energy efficiency measures

Transferable Good Practice from COALESCCE partners relevant to these recommendations

1. Oldham community energy finance model

Oldham is one of the poorest areas of Greater Manchester. The council is a 'co-operative council' and wanted the benefits of renewable energy to be shared with the residents. The council conducted feasibility studies on schools and a community centre for PV installation. Local members of the community were invited to collaborate on the project. Three people came forward to help, bringing a range of business and environmental activism skills. The study identified five schools and a community centre that were feasible for community-owned energy. A type of co-operative known as a Community Benefit Society was formed and they signed roof-top leases at zero rent. The group, called Oldham Community Power, offered shares. They raised some money, and borrowed a low interest loan from the council to meet the FIT deadline and install the PV panels. Once local people could see the PV panels on the roofs, they bought shares in the organisation, and over half of the cost of the scheme was paid for by local people who receive an annual interest payment on their shares. See: http://oldhamcommunitypower.org.uk/

2. Solar PV on tenement blocks in Sofia – Za Zemyata

Sofia is the capital city of Bulgaria and is very densely populated. The population is occupying mainly multi-level blocks of flats more than 90% of which are privately owned.

The PV system was installed on the roof of 15 level blocks of flats in Geo Milev District in Sofia. The building was constructed in 2010 – 2012 under the so called law on housing cooperatives which the shareholders (members) the right of use to their own dwellings in the society's property (right of residence). Housing cooperatives may also conduct activities associated with the right of residence.

Upon completion of the construction, a certain amount of money remained in the housing cooperative, which according to the law could only be used for the building. A decision was taken to invest in solar PV on the roof, which would generate income to the whole block. "The housing cooperative invested EURO 72 000 in this project, "says Anton Jelev, Chairman of the Board of the Cooperative. It is worth buying and installing 120 solar panels with a total power of 28.2 KWp. At the time the investment was realised the expected paid back period was 6 years based on the tariffs. However, due to an almost 50% reduction in preferential tariffs for solar installations of this scale currently this period is extended to 10 years.

Despite this fact the benefit for the housing cooperative is that the FIT payments provide income to maintain common areas and green grounds around the apartment block. This creates a better living environment and a good quality residential area, i.e. contributes positively to making places better for people and increased house value.

4. Community Energy England: sustainable transport groups

Electrical Vehicles (EVs) offer opportunities for all corners of the energy sector. There could be an estimated 1,000,000 EVs on the road in the UK by 2020 and latest figures suggest there needs to be an extra 29,000 charging points (85% of which need to be rapid or fast chargers) across the UK by 2030 to cope with demand.

Community energy groups in the UK are starting to explore transport as a method to maximise solar PV usage due to intermittency issues, with the charging points and / or EVs acting as a storage medium for otherwise wasted energy. There are currently 5 operational projects incorporating over 20 charging

points and community owned EVs. 10 further community energy organisations are exploring ways to integrate community electric vehicles in their future plans, particularly as a car club service to members.

CEE has published a guide on community owned electrical vehicle chargers to ensure that groups are aware of the opportunities, considerations and experiences

2. Major retrofit of residential blocks - Prahova

This is a long term programme included in the LEAP with the purpose of improving the insulation of the private flats while a different programme is targeting the heating system. The programme started in 2011-2012 when about 46 buildings were refurbished, the costs were split evenly 50% / 50% between national and local budgets. There was a long delay before finally the second stage was able to be implemented mainly because of the lack of consensus between the beneficiaries, but with the legislation changing allowing the majority to decide in 2018 another 43 buildings are in different stages of refurbishment. The financing is different this time 60% national budget, 25% local budget and 15% flat owners.

3. PRESENTATIONS & VISITS

3.1. Day of presentations in Valencia – Tuesday 12 June

3.2 Jose Vicente Latorre, IVACE – Valencia Sustainable Energy Strategy

- 2020 programme EU target driven
- 16% renewables target not 20% - more realistic and achievable
- Citizens placed at centre of strategy – self-consumption being encouraged
- Regional government can lead with own buildings
- 1 billion euro investment required
- Wind power 60% contribution to target
- Solar PV for self-consumption is the next largest chunk – trying to boost
- Recent increase in biomass use for large industrial boilers
- 250MW of renewables required
- Biofuels – 10% by 2020, bioethanol and biodiesel
- Income tax reductions for renewables, zero interest loans for renewable heat self-supply
- Transport is 48% of CO2 emissions – major challenge. Industrial 30%, services 14%, domestic 7% (lack of heating requirement)
- Main measures: industry – efficient production, energy audits for SMEs. Transport – modal shift, more efficient vehicles, EVs. Buildings – energy efficiency. Public sector – improving lighting. Conservative agriculture. Cogeneration for energy production
- 170MW solar – the largest share of 250MW renewables
- 12% co2 reduction by 2020 on 2014 baseline – 170 million euros

- New unified platform for all publicly owned buildings and other assets – including airports, courts, tax offices etc etc. Energy efficiency measures. Energy audits. Self-consumption is the priority
- Mobility plans will need to include energy reduction measures & renewables – transport infrastructure not included in emissions figures
- 30% reduction by 2030 on 2014 baseline in primary energy consumption
- Valencia only region doing tax incentives

Questions arising:

1. Jose presented a 2020 strategy while the target should be really 2030 now. Any update expected soon?
2. There seems to be a disagreement with national policies which are mostly aimed at bigger companies instead of SMEs and citizens.

3.3 Vincent Garcia, ALTERNAcoop – Mobility Co-operative

- Non-profit co-op
- Created with goal of offering products and services to members for more sustainable mobility
- People, environment, democracy, emphasis on participation
- EVs
- Part of RESCOOP – RESCOOP Mobility has 3 members only so far including ALTERNA. We want this kind of project in each region to ensure Valencia is not an isolated case
- Support car sharing, car pools etc
- Cars represent freedom – problem! Cities and towns are jammed and overcrowded
- 20% of working time is spent commuting
- Taking up public space – even motorcycles parked on the pavement
- 2013 – 3 million deaths associated with air pollution, 23,000 in Spain
- The future needs less dependency on private vehicles
- Smart phone – most important tool in achieving sustainable transport. Vehicle bookings of EVs, charged with renewable energy
- Private companies offering car pools but focus on private profit
- Poor employment conditions in these private companies – co-operative has completely different goals
- Use vehicles efficiently e.g. council vehicles can be used outside working hours by citizens free of charge, so that they can try out an electric vehicle
- Albalat dels Sorrells – village with 10,000 inhabitants. Aim to make it carbon neutral
- Key is to make projects visible and raise awareness amongst citizens – charging stations need to be seen

- Council pays for the charging services – 20 euros a month worth of electricity
- People need to be given the facts about how to use their vehicles for e.g. long journeys
- Plan A – for people interested in sharing an electric vehicle
- 1 person 1 vote – co-operative. Aim to have employees and not to depend on large companies. Willing to co-operate with any entity though
- Expensive insurance covers maintenance of vehicles – members over 25yrs, driving licence 2 years or more. Vocational training not learning electrical vehicles yet
- Cars always stored at same recharging point – not free floating
- 300 members – needed to provide capital

3.4 Alvaro Ferrer, Sergio Casero – biomass in Portell de Morella, in North of Valencia region

- Zero emissions is the target
- District heat network was one idea to contribute to this target
- IVACE has helped a lot. Cogeneration was chosen so that renewable energy can power e.g. electrical pumps etc as well as heat
- 20kW for pumps
- LED lighting for the town
- EV recharging point, free of charge
- Two wells plus some springs for water sources – water pumps run when electricity is cheaper
- Monitoring – incoming flow and temperature of water. All computer controlled
- 12 euros for a heat network connection – when over 20,000 kc used the 12 euros is reimbursed, to make sure that local residents are supported
- Why biomass not solar thermal? Basically town is located in a huge wild forest. Very low prices for raw materials. Provides employment opportunities
- Town Council owns the heat network – depopulation makes private ownership a problem. Ownership of heat exchangers transfers to home owner after 10 years
- Heat network replaces diesel oil in the main
- Inhabitants very happy with the system
- New sports centre coming – roof will be covered with solar

3.5 Luis Costa – street lighting contract in Catarroja

- Valencian people love night life so this is a factor
- During recession some street lights had to be partially switched off
- Street lighting was poorly maintained – sodium bulbs, electrical panels in bad shape
- 4000 columns
- New tender for 6 basic services including energy supply, maintenance & inspection, total guarantee for 15 year contract, investment in energy efficiency & renewables, contract work

- Fading can take place in winter as people are not using the streets. Also weekends at 2am, in summer due to less daylight hours
- Initial problems with watertightness in new LEDs but these were rectified by the supplier
- Good relationship between the company and the council
- Equipment will most likely last the full 15 years despite improvements in technology

3.6 Placid Madramany, director AER – Energy efficiency services in la Comarca de la Ribera

- Serves small and medium sized communities
- COALESCCE objectives
- Lack of communication, information, knowledge, capacity, legal barriers
- Increasing training, skills, changing habits, supporting municipalities, promoting best practices, pilot projects are all ways to tackle the barriers
- Cities are responsible for 70% of emissions
- Private sector is the lion's share at 95% – municipalities only 2%+
- Covenant of Mayors – 40% reduction CO2 by 2030. Participation of civil society is essential
- Many benefits to involving citizens – better intelligence, better engagement
- Promoting energy saving behaviour, providing tips on how to save energy, signposting to funding and subsidies. Aim to erase energy poverty
- Yearlong project to change habits in around half the population of the County
- Encourage families to change behaviours in a six week period. Feedback by form or email. Additional support with additional challenges
- 97% of participants changed their activities – 67% by the end of the project
- 87% believed they had saved energy
- Installation of LEDs, reduce temperature of boiler, save water in kitchen, save water in shower and other places in house
- Saved 8.3% of electricity consumption by end of project

3.7 Ernesto Faubel, Valencia Council – participation of citizens in energy projects

- H2020 – lighthouse projects, nature based solutions
- Mobility, energy, ICT, (social) – has its own cross-cutting category
- Valencia one of the new lighthouse cities – the leader
- Regeneration of a target Valencia district with low carbon focus – retrofit, new buildings, multimodal hubs
- Smart controls, smart grids, intelligent transport, city ICT platform
- Grow Green – nature based solutions for urban heat island effect, cleaning water, green and blue corridors
- Quantification of benefits for purposes of dissemination to citizens
- Co-design and co-creation

- Small NGOs can be very good at engaging citizens and other stakeholders
- Engaging citizens through traditional means – stakeholder mapping, workshops, questionnaires

Questions / comments arising:-

1. The Council is running lots of projects many focused on start-ups and innovation.
2. Refurbishment of old buildings is not a priority.

3.8 Jose Carcia, ENERCOOP – Cooperative energy model

- Valencia is a reference for energy co-ops nationally
- Electricity co-ops not a new concept in Spain
- Powers on co-ops devolved to regions. National co-op act varies locally
- Co-ops of user and consumers
- Historically co-ops could generate, sell and distribute energy but with emphasis on the latter
- 2013 act enabled co-ops to distribute energy but separate activities – distribution must be a separate organisation and is now only done by the veteran co-ops. New co-ops generally just generate electricity and sell it
- New co-ops generally contribute to energy democratisation and user empowerment. Traditional ones served remote villages where big energy companies not interested
- 118,000 people in 35 co-ops nationally
- Members are owners of co-op
- Energy price different not hugely different – slightly lower in co-ops. 100% renewable energy
- Lots of social functions of historical co-ops which also own significant amounts of infrastructure, much of it very modern
- Historical co-ops now looking more at generation – large scale wind and solar plants
- Installing charging stations for EVs
- Prosumer concept could fit with new co-ops, a few are already doing. Generation still lagging behind
- Big challenge is lack of awareness of the new energy co-ops
- Not currently working with municipals buildings for energy generation projects – looking at generation and closely linked with municipalities but not gone down this route
- Co-operative is the main organisational model for citizens to come together on an energy project

Questions / comments arising:-

1. Co-ops use an old model, time proven and functional, yet they are still in process of innovating and adding new layers to the concept to include for example prosumers or newest technologies.

3.9 Maria Ortiz, IVACE – Contracts with ESCOs in the public sector

- Only two examples in the region, one of these mainly a maintenance contract
- One example very good, successful
- ESCO definition – must face an economic risk, get paid for achieving energy efficiency improvements
- Easy in public lighting, not so easy for buildings
- Energy Supply Contract, Energy Performance Contract
- A large degree of competitive dialogue in ESCO procurement
- ESCO model not widely trusted, contracts complicated and long, energy savings opaque, outsourcing energy management not considered a benefit, lack of government support, financially risky contracts
- Standard suggested contracts now available to try to promote ESCOs in public authorities

3.10 Joaquin Mas, IVACE – Plan to foster self-consumption of electricity in Valencia region

- Very sunny in Valencia so perfect for solar PV
- For households there is tax relief – income tax, 20% of value of investment made, includes VAT. Maximum of 8,000 euros
- Solar PV eg on a whole block of flats – tax relief can be equally distributed amongst residents. Only one third of residents required to sign up to get go-ahead
- Non-domestic – zero interest loans, up to 500,000 euros, 100% of value of investment, includes city councils, 10 year term, collateral for 50% of loan, councils exempt
- Special supporting materials for town councils including roadmaps, PPAs enabling another entity to sell energy to the town council. Councils could reduce taxation to incentivise installations. Educational programmes, awareness-raising, architectural integration
- No payment for power fed into the grid
- Multiple supplies from same generator currently illegal but this will change soon

3.11 Juan Sacri – La Pinada Eco-neighbourhood

- Intentional community with different sustainability working groups including energy
- Want to create their own smart grids
- 80% ownership of site, 20% small landowner

3.12 Jose Gamiz, HIPTOTEP – energy efficiency in residential buildings

- Building company that got into energy after the financial crash
- Apartment buildings the main focus
- ESCO approach
- 100% finance, savings guaranteed to the residents, maintenance included
- No change of electrical supplier
- Training of building administrators is necessary to get them to understand the concept and idea of an energy audit and energy services contract. The administrators feel threatened and diminished by the idea of handing over energy management
- There is a register for ESCOs
- Slow growth in the business