

## COALESCCE

## COMMUNITY ENERGY TOOLKIT



## COALESCCE Community Energy Toolkit

### Introduction

The focus of COALESCCE has been to analyse local community energy markets, identify interventions which will develop a step change in the development of those markets, and put in place changes in local policy frameworks and structural fund allocation mechanisms enabling and delivering this step change. This Toolkit developed by the COALESCCE partners for the project will enable the dissemination of community energy initiatives and knowledge sharing across all EU member countries. It has been designed to specifically support the implementation of our Regional Action Plans

- 1. What is Community Energy?**
- 2. How can I get involved in Community Energy?**
- 3. Why Community Energy? The Benefits**
- 4. Community Energy Project Pathway**
- 5. Resources and Links**
- 5. Good Practice Case Studies (with index)**

COALESCCE is an Interreg Europe funded project led by Oldham Council on behalf of Greater Manchester. COALESCCE stands for 'Community Owned and Led Energy for Security, Climate Change and Employment'. It is a partnership of:

- Oldham Metropolitan Borough Council, UK
- Region of Abruzzo, Italy
- Euro Perspectives Foundation, Bulgaria
- Energy Efficiency and Renewable Energy Agency, Ae3R, Ploiești, Prahova, Romania
- Institute of Valencian Business Competitiveness, Spain
- LENERG Energy Agency, Hungary
- Lake Constance Foundation, Germany

COALESCCE aims to increase the capacity for community based approaches to local renewable energy provision across Europe in order to reduce carbon emissions, increase energy security and tackle fuel poverty whilst driving 'Green Growth'.

Phase 1 of the project was from January 2017 to June 2019. Phase 2 is a monitoring phase from July 2019 – June 2021.

<https://www.interregeurope.eu/coalescce/>

## 1. What is Community Energy?

***Community energy refers to the delivery of community led renewable energy, energy demand reduction and energy supply projects, whether wholly owned and/or controlled by communities or through partnership with commercial or public sector partners.***

*By placing democratic control, shared benefits and active participation at the centre of the energy system, community energy can create a foundation for the significant infrastructural and cultural change we need to reduce the impact of climate change and increase our energy security.*

*Where successful, community energy has the potential to draw people in, not just as consumers but also as active participants, or partners, in a process of change. 'Partners', because people share in the benefits, have some say in how things happen, are actively involved and feel a connection with the outcomes.*

**From: Community Energy England <https://communityenergyengland.org/>**

**Community Energy is characterised by local people owning, managing or co-owning:**

- **Renewable/low carbon energy generation and storage technologies** e.g. Solar PV, wind turbines, biomass boilers, AD units, heat pumps, electricity storage (batteries+), heat storage, inter-seasonal heat storage etc.
- **Low carbon or renewable energy supply systems** e.g. Energy Services Company (ESCO), energy performance contracting, electricity networks, heat networks, micro-grids etc. to businesses, individual homes or a wider community
- **Energy Efficiency schemes** e.g. energy efficiency advice, energy efficiency measures for individual homes, retrofit on groups of homes or housing blocks, energy monitoring and management services etc.
- **Provision of Community benefits** e.g. supporting community action on climate change, reducing fuel poverty, creating local jobs, using local installers, saving CO2 and reducing air pollution
- **Innovation projects** e.g. trialling new schemes to reduce energy demand, like working together to insulate homes; testing shared PV and battery storage at a community level; ensuring inclusion and affordability in the smart-energy transition - sharing benefits between people to create inclusive networks; delivering electric vehicle charging and car share schemes; raising finance to reduce dependence on government funding; developing open-source and open-data tools.

**Community Energy: local people leading on the energy transition: renewable energy, energy demand reduction, tackling climate change and generating social, economic & environmental benefits for the local community.**

## 2. How can I get involved?

There are lots of ways to get involved in Community Energy. Here are some ideas:

- Get together with others to set up a Community Energy company to generate renewable energy or provide energy efficiency services to your local area
- Invest in Community Energy projects through crowdfunding, joining a co-operative or investing in community energy shares or a community energy related savings scheme
- Join an existing Community Energy organisation or co-operative as a member or supporter
- Become a customer for Community Energy – join your local heat network, purchase Community Energy through your electricity supplier or ESCO
- Contact your Member of Parliament or local municipal/council representative to find out about policies that support Community Energy schemes, and if there are none, to ask them to develop some.
- If renewable energy companies are installing energy generation schemes in your area ask them if the local community can buy and own shares in the development to generate a return on their investment or ask them to set up a community fund out of some of the profits to support energy efficiency or environmental schemes in the area
- Sign up to a course, attend an event or visit a community energy group.

### UK: Co-op Energy, community energy supplier

Co-op Energy buy energy from Community Energy organisations and sell it to residential customers:  
<https://www.cooperativeenergy.coop/why-us/community/we-support-community-energy/>

Community energy is more established in some countries than others: some countries are just starting up so may have fewer opportunities to join existing projects or groups, and may require more “instigators” than “joiners”. You can see more on the COALESCCE partner countries in the Good Practice case studies.

Section 2 provides information about setting up a Community Energy organisation and projects.

### UK: Community Energy Fortnight in June

Community Energy Fortnight – visits, events & training  
<https://hub.communityenergyengland.org/resources/resource/295/how-to-get-involved-with-community-energy-fortnight/>

### Hungary: Straw Bale Houses

You can attend courses in straw bale house building  
<https://www.facebook.com/Szalmabalaepiteszet/>  
or volunteer to help others  
<https://www.workaway.info/619372627924-en.html>

### Do I have a local Community Energy group?

To find your local Community Energy group try a search for ‘community energy’, visit the Rescoop map... <https://www.rescoop.eu/community-energy-map> The National Association for Community Energy in Germany <https://www.buendnis-buergerenergie.de/home/> or The association of community energy cooperations in Baden-Württemberg <https://www.buerger-energie.de/>

### Europe: Energy Cities

Policy information and case studies if you want to lobby your politicians [http://www.energy-cities.eu/IMG/pdf/energycities\\_rnp\\_guidebook\\_web.pdf](http://www.energy-cities.eu/IMG/pdf/energycities_rnp_guidebook_web.pdf)

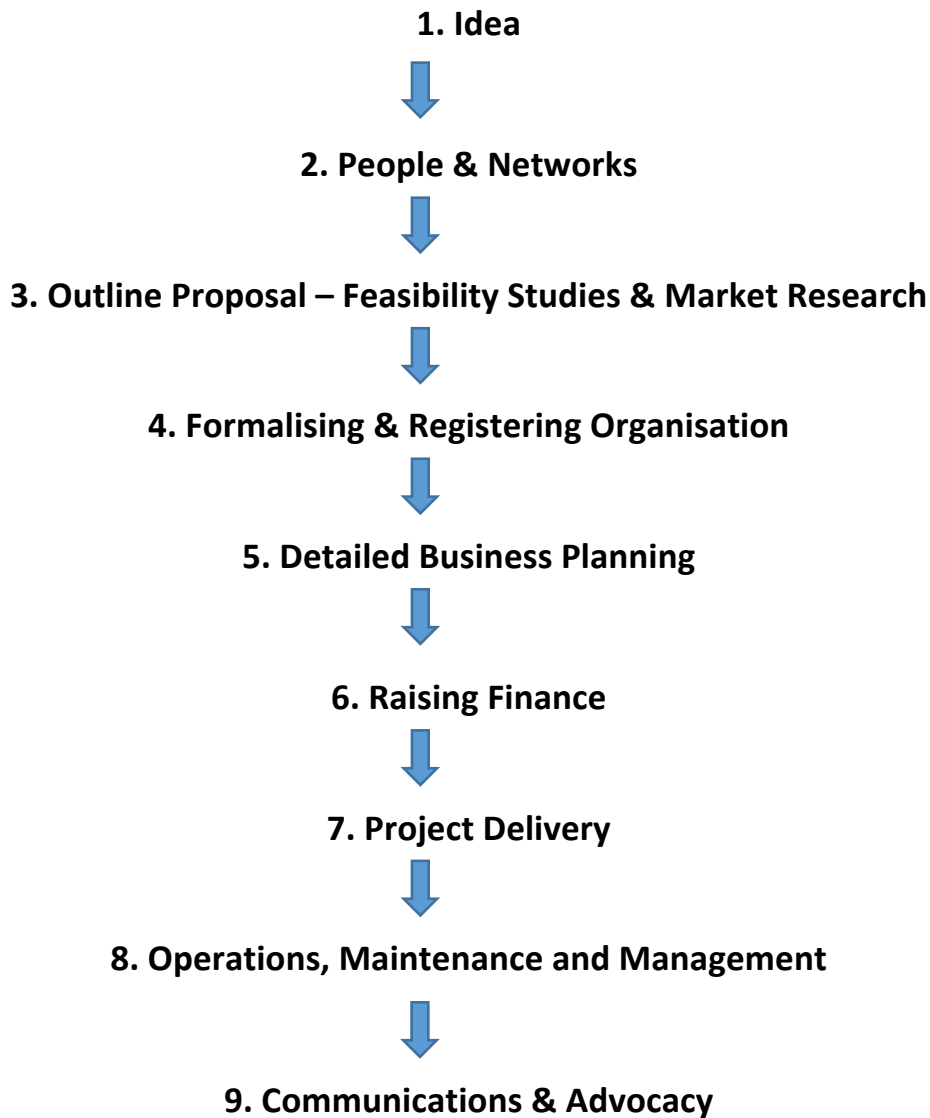
### 3. Why Community Energy? The Benefits

1. **Tackles Climate Change:** acting as a community to reduce CO2 emissions.
2. **Keeps Spending & Profits Local:** Traditional fossil fuel based energy expenditure mainly leaves the local area... Community renewable energy and energy efficiency schemes keep money circulating in the local economy, with profits benefitting businesses and citizens. See: [Germany Case Study no.2 & no.4](#), [UK Case Study no.8](#), [Romania Case Study no.10](#), [Spain Case Study no.13](#), [Hungary Case Study no.14](#), [Bulgaria Case Study no.17](#)
3. **Speeds up energy projects:** community energy schemes promote wider deployment of renewable energy sources than would occur if left to the market with its typically short-term investment agenda. See: [Germany Case Study no.2](#), [no.3](#) & [no.4](#), [UK Case Study no.8](#) & [no.18](#), [Romania Case Study no.10](#), [Bulgaria Case Study no.12](#), [Spain Case Study no.13](#)
4. **Fosters Innovative approaches:** Finding new ways to develop, finance and run projects, sometimes using new technologies See: [Germany Case Study no.1](#), [Spain Case Study no.13](#)
5. **Builds the Co-operative sector:** Community Energy organisations share ideas, guidance, financial models and expertise in the spirit of Co-operation See: [UK Case Study no.9](#) & [18](#), [Germany Case Study no.1](#), [Hungary Case Study no.15](#)
6. **Motivates action:** Community Energy is a great way to raise awareness of climate change, renewable energy and energy efficiency through school visits, community groups, councils and being able to see how energy is generated and used and saved. See: [Bulgaria Case Study no.12](#), [Hungary Case Study no.14](#)
7. **Led by People & Communities:** Local people engaged in community energy are more likely to develop projects that work for them. See: [Italy Case Study no. 7](#), [UK Case Study no. 8](#) and [Germany Case Study no.2](#) & [no.4](#), [Bulgaria Case Study no.12](#), [Hungary Case Study no.14](#)
8. **Harnesses Skills and Motivation:** Community Energy attracts and uses skills from within communities, universities and businesses using skills developed in other sectors to benefit the local community and tackle climate change and shares knowledge within the sector. See: [Germany Case Study no.1](#) & [no.5](#), [UK Case Study no.9](#), [Romania Case Study no.11](#)
9. **Creates Trusted Partnerships:** Community Energy groups are often more trusted than private companies or municipalities and can engage with local people on projects that seek behavioural change, and share information to ensure we all benefit from the change to smart energy networks. See: [Italy Case Study no.6](#), [Spain Case Study no.13](#)

- **For those not familiar with Co-operatives, or who associate Co-ops with government ownership, the Co-operative Principles are useful:**
- Voluntary and Open Membership
- Democratic Member Control
- Member Economic Participation
- Autonomy and Independence
- Education, Training and Information
- Co-operation amongst Co-operatives
- Concern for Community

## 4. Community Energy Organisation & Project Pathway

The flow chart shows the overall steps for setting up a community energy organisation and delivering schemes. Each step is outlined in more detail below. The Resources section below gives links to toolkits for planning renewable energy and community energy efficiency projects in more detail.



*This Pathway was developed at a workshop of COALESCCE partners in January 2019 and is also based on the steps in *Simply Start-Up*, a guide from Co-operatives UK downloadable at: <https://www.uk.coop/resources/simply-start>, the *Transition Enterprise Handbook* [http://www.reconomy.org/wp-content/uploads/2015/08/Transition\\_Enterprise\\_Handbook\\_FINAL-v2.pdf](http://www.reconomy.org/wp-content/uploads/2015/08/Transition_Enterprise_Handbook_FINAL-v2.pdf) and Local Energy Scotland's toolkits.*

## 1. Idea

Your community energy idea may come from a local challenge or need, from an opportunity that arises, or from being inspired by another community energy project. Importantly, you'll have an idea that could be viable for a range of people and organisations involved. At the start you will explore ideas and the whole concept will change, develop and evolve.

### Questions to ask at this stage:

- What are we trying to achieve?
  - CO2 emissions reductions to tackle climate change
  - Saving people money on fuel bills
  - Tackling fuel poverty
  - Energy security
  - Keeping money locally in the community
  - Clean air and environment
  - Community cohesion and pride
  - Generating a profit from a service/product to fund other schemes, like energy efficiency or fuel poverty projects
- What is the specific problem or need we are trying to address? If more than one, can we prioritise them? Is this project a good way to address the priority issues?
- Is there a business idea that could be sustainable for a not-for-profit organisation or profit-making business? Or is this a charitable project?
- Who else is doing this? Are they in competition or can they help? Is there room in the market for new ways of providing this service/solution?
- What is our 'community'?
  - Residential block or street
  - Village or town
  - Local area or municipality
  - A community of interest (a group with something in common if not geographical)
- Who has the power to act on this?
- Who else needs to be involved at this stage?

### Useful activities:

- SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) of your project and your capacity to deliver it
- Gathering initial support: through individual contacts or community meetings to test out your ideas and identify early challenges to the project
- Research about similar projects: what they did, what they've learnt, similarities and differences between your projects, changes that might affect your business case.

### Outcomes:

- Priority list of what you might achieve & how you are going to do it
- People who are involved

## 2. People & Networks

Some projects start with a few people and the community gets involved as members, customers and suppliers later on, while other projects have a lot of people involved from the start. If you aim to be a community energy organisation it is important to plan early how you will engage and include people even if you go public after you have done some of the technical work. It is a balance between raising expectations and not delivering, and engaging people rather late which means you can miss out on knowing exactly what solutions will work in the local area and people having a true sense of ownership and trust.

### Questions to ask at this stage:

- How big a group do we need at what stage of the project?
- What skills have we got and what do we need?
- Are there specific people we need? Who is missing: look at the group – is it sufficiently inclusive and representative?
- Who are the key stakeholders and supporters e.g. customers, workers, members, investors, suppliers, council, energy suppliers?
- How do we talk to our stakeholders?
- Are there any conflicts of interest (these can be managed by declaring and recording people's interests, i.e. where the organisation or project may affect their business, home etc)
- Where can we get help?

### Useful activities:

- Stakeholder mapping & analysis
- Skills mapping
- Community meetings
- Exploratory event: e.g. Workshop/World Café/Open Space/Movie night/speaker
- Talking to/visits to other Community Energy organisations or projects
- Futurecasting or Visioning for the next few years

### Outcomes:

- You know who needs to be involved
- Skills analysis
- Stakeholder analysis (this does not have to be a big report; it could be a diagram)



### 3. Outline Proposal – Feasibility Studies and Market Research

At this stage you are developing your ideas, perhaps splitting up into working groups to go away to do some more research. You'll keep coming back together to communicate and begin to develop an outline proposal. You'll carry out technical, market and financial research to determine whether your Community Energy idea is feasible or not... you will need to change and amend your ideas as you discover more. Test your ideas thoroughly at this stage, because you don't want to waste your time or create problems later by missing important information, or being too optimistic.

#### Questions to ask at this stage:

- What is our product or service?
- How will we delivery it?
- Is there a market for our product or service?
- How much will it cost ... and will it generate enough income to cover costs?
- Are there external factors that could affect (positively or negatively) the finances of the project (e.g. changes in government policy or grants available)?
- Do we have any key deadlines we need to meet (e.g. Feed in Tariff deadline, funding deadline, decision meeting of potential partner organisation etc)?
- What do we know already?
- What do we need to find out? What order do we need to do this research in? How detailed does it have to be at this stage?
- Who has done a similar project and how can we find out more?
- Do we need external support to develop a feasibility study?
- How do we describe to other what we are doing or trying to achieve?
- Who are key external decision-makers, and how/when do we contact them?
- Who does what in the group? Who can commit to what? It's easy to over-commit then not deliver, so try to create clear roles and take responsibility.
- Who is responsible for pulling the information together and taking the decision to proceed or not?

#### Useful activities:

- Steering groups/working groups doing clearly defined tasks and reporting back
- Regular meetings to assess progress and identify critical issues
- Mentors/facilitators to help with planning
- Action Planning tools or methods

#### Outcomes:

- Initial feasibility study including an outline description of the project: technical aspects, financial assessment (estimated start-up and ongoing costs, likely income, investment or funding required), communications, marketing and engagement plan.
- Organisational relationship or contract mapping (between your community energy group, key customers, partners, members, suppliers, finance/investors etc)
- Capacity assessment (who can deliver what)
- Decision as to whether to continue, stop or try a different approach.

#### 4. Formalising & Registering the Organisation

This can happen after the next stage, but generally has to be done to access development finance or grant support, or give you a formal organisation to approach stakeholders. You may choose a Co-operative, a limited company, a charity or a partnership... depending what regulations are in place.

In Germany: The National Network for Energy Transition provides advice for the foundation of co-ops or other legal forms: <https://www.energiegenossenschaften-gruenden.de/energiegenossenschaften.html> and The Federal Association of Co-op in Baden-Württemberg <https://www.wir-leben-genossenschaft.de/de/energiegenossenschaften-45.htm>

In Hungary: <https://fnlaw.hu/szakteruleteink/tarsasagi-jog-cegjog/szovetkezet-alapitasa.html>

In Spain: Chapter 5 of the "Guide for the advancement of energy communities" is dedicated to legal structures. There is a comparative between the different models. <https://www.idae.es/publicaciones/guia-para-el-desarrollo-de-instrumentos-de-fomento-de-comunidades-energeticas-locales>

In the UK: <https://www.uk.coop/developing-co-ops/select-structure-tool> is a useful tool

#### Questions to ask at this stage:

- What is the best legal form for our organisation's aims and objectives?
- Are there regulations in our country which mean we have to choose a particular legal form? (e.g. in the UK the Financial Conduct Authority have required community energy organisations generating energy to be Community Benefit Societies which benefit the wider community rather than Co-operative Societies which benefit the members.)
- Who is going to own and control the organisation?
- What oversight will there be on the organisation's activities?
- Will it be run by volunteers, employees or a mix?
- Who is going to benefit from any surplus/profits (workers, consumers, community, etc)?
- How will we raise our finance (some legal forms of organisation cannot issue shares)?
- What will happen to our assets if we wind up? Can we ensure that our assets can only be sold or transferred to an organisation with similar aims to ours rather than to a private company that will make a profit with no social benefit?
- What are the key Rules that define our organisation?
- Is there a Business advisor or Co-operative support organisation to advise us and help write our Rules?
- Do we have the right directors on board at this stage?
- Are there training courses available for our directors?
- What are the financial and tax reporting requirements and other rules we must meet once legally registered?

#### Useful activities:

- Getting support from Community Energy networks or organisations
- Getting support/guidance from the Co-operative movement or Business Advisors
- Finding out what other similar groups and ESCOs have done

#### Outcomes:

- Development of Rules / Constitution / Articles
- Formal registration of your organisation
- Creating a formal organisation that can have contracts/relationships with other stakeholders

## 5. Detailed Business Planning

You will need a detailed business plan that you can use to raise the finance or funding you need to achieve your organisation's aims and objectives. You have already researched what you're going to do, your markets, and technical aspects. You will now draw all these things together along with financial modelling to develop your Business Plan. You need to stress test your assumptions and ensure that your plan is robust and resilient.

The Transition Enterprise Handbook helpfully lists everything your business plan should contain:

- Executive Summary – a quick summary; this is your elevator pitch essentially
- A description of the business – what you're going to do
- A description of the organisation – your structure and governance
- A description of the key people involved – who you are and why you should be trusted
- A description of the product or service
- A description of the social, environmental and/or community purpose of the enterprise – why you are doing it and how will you measure your impact?
- Market research: who will buy your product or service and why? who else is already doing the same or similar?
- Marketing – how you will sell your product or service and why you will do it that way.
- Success factors – SWOT analysis and how you will mitigate risks to your success
- Financial planning and projections (cash flow, profit and loss, balance sheet)
- Finance and funding – where you will get your money to start
- A timeline – what you are going to do and when.
- Appendices – fine detail of anything which might otherwise clutter up the business plan or is supplementary to it. For example, you might include maps, plans, CVs, letters of support.

[http://www.reconomy.org/wp-content/uploads/2015/08/Transition\\_Enterprise\\_Handbook\\_FINAL-v2.pdf](http://www.reconomy.org/wp-content/uploads/2015/08/Transition_Enterprise_Handbook_FINAL-v2.pdf)

### Questions to ask at this stage:

- How do we describe our Community Energy organisation?
- What product/service do we offer and what is our Service or Project delivery plan?
- Who are we and do we have all the skills and resources to deliver?
- Will we need staff to deliver this? (Be wary of relying on volunteers who may burn out)
- Do we need specific policies?
- What else do we need in place to run the business?
- Who are our key partners or stakeholders and have they signed up to the enterprise?
- What legislative requirements must we meet?
- Do we need legal agreements signed before we can raise finance?

### Finance related questions to ask at this stage:

- Do we need start up finance, or can we start small and expand?
- Do we need a large capital outlay at the start?
- Where will our capital come from? (is our legal structure suited to this, so think about this before you register the organisation); do we understand the implications of different types of finance (grants, debt, equity etc) and how it affects our members and creditors
- What are the costs of raising different types of finance (interest rates, set-up costs)?
- Are there due diligence or legal costs associated with raising finance, issuing a share offer etc
- Where will the cash flow or income come from to service the capital raised?

- What are our annual operating costs? E.g. staff, office, energy, equipment, travel, marketing, bank charges, insurance etc.
- Do the figures add up? Do not be over optimistic about financial performance, err on the side of caution on capital costs, legal costs, insurance, maintenance, warranties/replacement, down time, technical performance/output, number of customers.
- Can the number of staff we have modelled for actually deliver the service we are providing?
- What is the profit and loss projection?
- What is the cash flow projection – will we run out of cash?
- Have we taken VAT or other taxes into account?
- How does inflation affect our modelling? How do changes affect us?
- Have we got prices/quotes for everything to deliver the project?
- Have we got a contingency fund?
- Does our model rely on specific government or local policies? Are they likely to change?
- Can our model work without subsidy?
- What are the risks and how do we manage them? (e.g. not enough people signing up as customers, technical problems with the installation, government policy changes, market changes, price of electricity falling, lack of local suppliers, bad publicity etc)
- How can we stress test our model? Ensure you have sufficient margins to cope with the risks outlined above. If it's very marginal, you may need to raise cheaper capital, offer lower interest rates, charge more, find a cheaper installer or cancel the project.
- Who can check the assumptions and figures? But do not rely solely on an external advisor/consultant, make sure you all understand the financial model in detail, and how changes to some input figures affect the output figures.

**Questions to ask about the operational stages:**

- Do we have a plan for operations, maintenance, billing and communications?
- How will we manage and measure our social, environmental and economic impacts?
- Once we are up and running, how might we expand or develop new projects?
- How will we continue to engage the local community?

**Useful activities:**

- Using Business Model templates, or reviewing similar Community Energy organisation's business models, Business Model Canvas is useful for this stage.
- For services, Service Design Blueprint is a very useful tool <http://www.thisisservicedesignthinking.com/>
- Using a simple excel spreadsheet or a template from an advisor or support organisation
- If you are using a program make sure you understand the assumptions in it
- Getting professional support from someone with relevant experience (NB many accountants do not understand Co-operative accounts or community shares)

**Outcomes:**

- Business Plan including financial model
- Delivery Plan or Service Design Plan
- Finance-raising Strategy
- Risk Register
- Marketing & Communications Strategy

## 6. Finance Raising

Your organisation or project is likely need some money to get started. If you are providing a product or service, you will need significant amounts of capital investment to buy and install renewable energy generation equipment, or to pay staff to provide energy efficiency services.

### Questions to ask:

- How much money do we need to start up and when do we need it?
- Where will we get the money?
- Do we understand the different types of finance and what it means for us?
  - Grants that do not have to be repaid
  - Debt (loans) that have to be repaid and will most likely have an interest rate and time limit (term)
  - Equity (usually in the form of shares) that is invested: the shareholder has a right to a share of the profits, and usually has a vote or way to be involved in decisions , but no guarantee that their investment will be repaid
- Can we blend sources of finance? You will need to model for different rates of interest and terms of repayment.
- Can we put some of our own money in as a loan or donation?
- Do we need to apply for a grant?
- If so do we have to be formally registered and have a bank account?
- Do we need to approach a social investor or bank?
- Are we going to raise money from community shares or membership fees?
- What information do we need to provide for different sources of investment?
- Do we need legal advice on this? Always chose a legal advisor who has done this before, rather than a friend who is a lawyer in another field.
- Is the information required by our funders/investors covered in the Business Plan and Financial documents?
- Have we factored the time it takes to raise finance into our project delivery plan and our cash flow projections?
- Do we have contingency plans if we do not raise sufficient funds (e.g. do less, install less, borrow from another source, arrange for underwriting of a share offer from a council or social investor).
- How are we going to approach investors and funders and when?
- Do our investors need more information about our social and environmental goals?
- Longer term, where is our income going to come from?

### Useful activities:

- Research what other similar projects and organisations have done
- Getting support from a Co-operative or Business advisor
- Using good practice guides, e.g. in the UK The Community Shares Handbook from Co-ops UK

### Outcomes:

- Finance raising plan or Share Offer Prospectus

## 7. Project Delivery

Depending on your type of Community Energy organisation, your project might build up gradually or it might be a big project that then settles down. Either way, you'll need a project delivery plan.

### Questions to ask at this stage:

- Do we have a clear delivery plan that outlines different tasks and activities in the correct order with identified inter-dependencies and key decision (go/no-go) points?
- Have we got the finance/funding in place?
- Have all project delivery partners signed up to the plan?
- Are we working well in our organisation, with our working groups/directors reporting back to the steering group/board?
- Is our business plan and finance modelling being kept up to date?
- Are we managing our risks effectively?
- Have we included insurance, communications and marketing, health and safety, procurement and supplier engagement, legal registrations (eg VAT) in our plans?
- What have we forgotten? Are we learning from others' experiences?
- Are we managing data correctly? Member details, finances, sign up, do we have a database for our members/key transactions?
- Are we on top of our obligations in terms of governance, reporting to our regulator etc?
- Are we asking tough questions and ensuring we are being honest and open and democratic?

### Useful activities:

- Each person involved has a clear role
- Communication is clear – using email, meetings, technologies such as google groups or Loomio
- A mentor could be useful in hand-holding you through the project delivery phase

### Outcome:

- A cohesive group moving through project delivery, well monitored and dealing with unexpected issues that inevitably arise

## 8. Operations, Maintenance and Management

Sometimes everyone is so relieved to have got the organisation up and running, and the project set up, that they forget the next important part! Running the organisation and keeping the enterprise on track for financial, social and environmental sustainability...

So after you have celebrated your Community Energy project's launch, it's vital to keep everyone on board, and your members and community engaged...

### Questions to ask at this stage:

- Are we ensuring that we are monitoring performance (of suppliers, of renewable generation, energy use etc), paying our invoices, sending out bills and receiving payments on time, ensuring our customers are satisfied etc.
- Are we running in accordance with our legal governance document?
- Is our governance on track? Are we meeting as a board, conducting our legal, tax, financial and other reporting obligations?
- Do we hold regular Annual General Meetings?
- Are we communicating with our members and engaging them?
- Are we providing the community benefit we expected?
- Are we measuring and managing our impact on our community?
- Is our marketing and communications plan working?
- What do we need to change or do better?
- Do we need to get more board members and new skills onto the board?
- Do we need to decommission or close any projects?
- What new opportunities are there? New policies, new technologies, customers or community asking for something else?
- What can we do next or replicate?
- Are we sustainable?

### Useful activities:

- Regular update of the financial modelling and monitoring
- Regular minuted board meetings
- Provision of annual accounts including community benefit
- Regular (at least annual) meetings with investors
- Ongoing client or customer engagement
- Communications with the community (e.g. impact, CO2 saved, energy advice etc)

### Outcomes:

- A smooth running professional organisation
- Satisfied partners/customers/members/funders
- Clear reporting on impacts

## 9. Communications & Advocacy

A key element of Community Energy is working together to develop a just, zero carbon, fair energy system.

After you are up and running, it's important to support the growth and success of other groups in the sector.

### Questions to ask at this stage:

- Do we need to join an association to share our lessons and learn what others are doing?
- Can we write up our project with lessons learned, what we would do differently and what we would recommend to others?
- How can we contribute to good practice?
- How can we continue to learn from others?
- Is there local or national policy that is lacking or holding us back?
- Can we campaign for policy change by speaking to our councillors or Members of Parliament?
- Can we join our national association?
- How can we spread our story and news?

### Useful activities:

- Joining RESCOOP if yours is a Community Energy generator
- Joining your national association for Community or Renewable Energy or similar association
- Getting involved in an EU project to learn from others and share your lessons
- Hold visits and publish your results and successes
- Offer to speak at community and energy events

### Outcomes:

- An active and well-known Community Energy sector
- Government and municipal policy that supports Community Energy
- Potential new partnerships with other organisations



## 5. Community Energy Project Resources

**REScoop.eu is the European federation of renewable energy cooperatives. It is a growing network of 1,500 European energy cooperatives and their 1,000,000 citizens who are active in the energy transition.**

**Rescoop** is the EU membership organisation for Renewable Energy Co-operatives and its website has many good practice guides, starter guides and information in various EU languages on business models, finance, stakeholders and Energy Democracy. It has a Mentors group which can provide support.

<https://www.rescoop.eu/starters>

Rescoop is an excellent place for EU member states to locate potential and existing EU supported projects and partners. The website has a good explainer videos in various languages (Dutch, Portugese, English etc)

<https://www.rescoop.eu/energy-democracy> These videos could be useful if you are running a Community Engagement event.

### Local Energy Scotland

Comprehensive website on setting up local energy projects, with various excellent resources, including on setting up and managing a local group, with a focus on good governance, procurement and legal support.

<https://www.localenergy.scot>

Local Energy Scotland has developed the **CARES Renewable Energy Handbook** to contribute towards Scotland's target of installing 500MW of community and locally owned renewable energy capacity by 2020. It provides useful information technologies, system requirements, environmental aspects, development tips and whether each technology is suitable for a community group or rural business for wind, hydro, biomass, heat pumps, solar PV and solar hot water.

[https://www.localenergy.scot/media/110222/renewables\\_handbook.pdf](https://www.localenergy.scot/media/110222/renewables_handbook.pdf)

They also have a Solar PV handbook – which is out of date in terms of the Feed in Tariff and may be UK specific, however, it outlines the steps for installing community owned Solar PV and may provide a useful checklist.

[https://s3.eu-west-2.amazonaws.com/prod-wl-ccc/resources/files/Community\\_Renewables\\_Toolkit\\_Solar\\_PV\\_Module\\_Final\\_V1\\_SY6jTau.pdf](https://s3.eu-west-2.amazonaws.com/prod-wl-ccc/resources/files/Community_Renewables_Toolkit_Solar_PV_Module_Final_V1_SY6jTau.pdf)

### Community Energy England Resources

<https://hub.communityenergyengland.org/>

The Community Energy England hub has a set of resources and project examples, ranging from grid connections, finance and flexibility markets to energy saving tips for vulnerable customer.

### Community-led Heat Projects: A Toolkit for Heat Networks

A toolkit developed by Regen, for the UK Government, in March 2016. It covers setting up a community group, viability, success factors, stakeholders, different business and ownership models, local impacts, technical and financial feasibility, fuel sources, business planning, financing stages, development and construction, operation and decommissioning.

*NOTE: since 2016, hot water district heating networks seem to have been replaced by a largely electric heating approach/micro-grids in the UK, combining solar PV and heat pumps – but the stages any project will go through are shown here. So while out of date, the document is still useful.*

<https://hub.communityenergyengland.org/resources/resource/151/community-led-heat-projects-a-toolkit-for-heat-net/>

**University Community Solar how to list**

UniSolar is the UK's first University led Community Energy group – their one page guide sums up how to get a project going: [https://s3.eu-west-2.amazonaws.com/prod-wl-cee/resources/files/UniSolar\\_How-To\\_Guide\\_Final.pdf](https://s3.eu-west-2.amazonaws.com/prod-wl-cee/resources/files/UniSolar_How-To_Guide_Final.pdf)


Written by Quantum Strategy & Technology Ltd for Oldham Council & COALESCCE

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## 6. Good Practice Case Studies

Number	Theme/Country/Project name	Subsidy-free	Requires government/other funding (loan or grant)	Hub/skills/co-ordination	ESCO	Schools	Municipal	Community owned	Energy Efficiency	Renewable energy generation
1	Germany: Regional Energy Agencies for Citizens		✓	✓			✓			
2	Germany: Bioenergy villages	✓	✓		✓			✓		✓
3	Germany: Solarbundesliga (Solar Bundesleague)	✓		✓						✓
4	Germany: Funding scheme; Climate Protection Plus		✓	✓		✓	✓	✓	✓	✓
5	Germany: Bioenergy villages - scientific approach		✓	✓				✓		✓
6	Italy: Citizens & Climate Change; Participatory Approach		✓	✓						
7	Italy: ESCOs model				✓	✓	✓		✓	
8	UK: Oldham community energy finance model		✓	✓			✓	✓		✓
9	UK: Community Energy England		✓	✓				✓	✓	✓
10	Romania: Major retrofit of residential blocks - Prahova		✓						✓	
11	Romania: University – business cooperation for development of sustainable business models in energy sector			✓						
12	Bulgaria: Municipality of Bratsigovo		✓				✓		✓	✓
13	Spain: Cooperative model for generation of electrical energy distribution and consumption	✓					✓	✓		✓
14	Hungary: Biobriquette in Told		✓	✓						✓
15	Hungary: Straw bale house community	✓		✓					✓	
16	Ploiesti – public-private heat network serving half of city, Romania		✓		✓		✓			✓
17	Bulgaria: Biogas heat thermal station, Ihtiman Municipality		✓				✓			✓
18	UK: Specialist Sector Support			✓				✓		

## 1. Regional Energy Agencies for Citizens, Germany

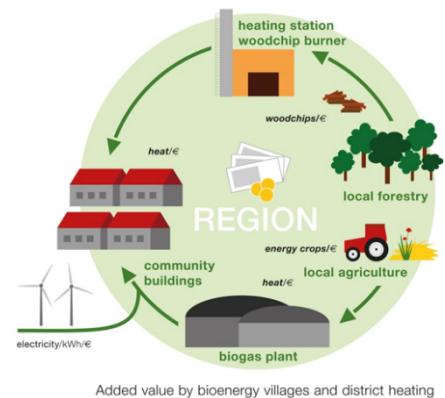
Detailed information	
<p><b>General approach:</b> Regional Energy Agencies (EAs) in state of Baden-Württemberg have the expertise and specific knowledge about the local and regional situation. They are important actors for the implementation of the state's climate protection goals. There are more than 30 regional EAs in Baden-Württemberg. Members of the EAs are mostly public authorities, local businesses, local/regional energy providers as well as finance institutes and NGOs.</p> <p>The fields of action are:</p> <p>Energy consulting for private house owners and tenants; Consulting on RES; public relations and training; energy services (e.g. communal energy management); energy expertise and advice.</p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>- Area-wide support, consulting and knowledge on climate protection issues</li> <li>- Competent and independent regional partners for citizens, businesses and communities</li> <li>- Involvement of regional stakeholders in energy issues</li> <li>- Stronger identification of regional stakeholders</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<ul style="list-style-type: none"> <li>- More than 30 regional EAs established</li> <li>- New network of EAs for regional cooperation of EAs</li> <li>- Provided expert advice services to thousands of house owners and tenants</li> <li>- Expert advice provided to 1,000s of local businesses</li> <li>- Expert advices for 100s communities</li> <li>- Increased awareness (citizens, businesses, public authorities)</li> </ul>	<ul style="list-style-type: none"> <li>- In some cases the membership structure might be difficult, as also energy providers and businesses with a strong affinity to fossil fuels can become members and funders of the EA. Conflicts of interest between the partners might arise.</li> <li>- There must be a clear demarcation between the subsidised services of the EAs and services offered by businesses</li> </ul>
Resources needed	
<ul style="list-style-type: none"> <li>- Funding for management (personal, office, mobility)</li> <li>- Funding could come from the EU or from national budget</li> <li>- Regional co-funding from members</li> <li>- In most cases the EAs have at least 1.5 staff members and additional freelancers for the citizen support</li> </ul>	
Potential for learning or transfer	Contact & further Information
<ul style="list-style-type: none"> <li>- Great transfer potential to every country</li> <li>- The first EAs in Germany were financially supported by the EU</li> <li>- Possibility to combine public and private funding (PPP)</li> <li>- Consulting and expert advice for citizens can also be implemented in pre- existing EAs as a new focus area               <ul style="list-style-type: none"> <li>- Existing structures</li> <li>- Existing knowledge</li> </ul> </li> </ul>	<p><b>Origin:</b></p> <p>Germany</p> <div style="text-align: right;">  <p><b>Bodensee Stiftung</b> Lake Constance Foundation</p> </div> <p><b>Contact:</b></p> <p>Bodensee-Stiftung / Lake Constance Foundation Volker Kromrey (Language: German, Englisch) Tel.: +49 (0)7732-9995-48 E-Mail: <a href="mailto:volker.kromrey@bodensee-stiftung.org">volker.kromrey@bodensee-stiftung.org</a></p> <p><b>Homepage (German):</b> <a href="https://www.energiekompetenz-bw.de/kommunaler-klimaschutz/netzwerk/regionale-energieagenturen/">https://www.energiekompetenz-bw.de/kommunaler-klimaschutz/netzwerk/regionale-energieagenturen/</a></p>

## 2. Bioenergy Villages, Germany

### Detailed information

**General Approach:** Particularly in rural areas, heating buildings relies heavily on fossil fuels which have to be imported. This means that financial resources leave the community and climate goals cannot be reached. Bioenergy villages strive to use local/regional energy resources as much as possible (by definition at least 50% of the primary energy comes from biomass). The heart of the bioenergy village is its district heating network. Often the waste heat from CHP (biogas) is used to cover the base load. Other renewable sources supplement the biogas heat (e.g. wood chips, solar heat).

It is vital to include the community in planning processes as well as in the management of the heating network. High acceptance and direct participation are critical for successful implementation. It takes about 2 years from the concept to the first heating period. The infrastructure is open technology. Once installed the heating network can be fuelled with any sustainable heat source and can thus be adapted to future development.



### Who are the main stakeholders and beneficiaries of the practice?

The community is the main stakeholder, being the consumer of the energy, being part of the operator structure and maybe even being the biomass supplier.

Other important stakeholders include:

- local farmers (biogas, biomass)
- local energy suppliers (operators, financial management, planning, investors)

### Evidence of Success (results achieved)

In Baden-Württemberg there are already about 170 bioenergy village installed and running. The total regional added value exceeds 50 million € per year and the bioenergy villages contribute significantly to reducing CO2 emissions from heating.

### Resources needed

- Depending on the size of the village and the length of the heating network substantial financial resources are needed (1-3 million €)
- Money is raised from the members and by bank loans.
- There are different supporting mechanisms from federal ministries and at a national level to support those investments.
- For district heating the most common legal form is the co-operative. The energy production is often organized by businesses.
- It needs quite a bit of effort to convince the community and as many people in the village as possible to connect to the district heating. At least 60% of all households have to connect in order to make it economically feasible.

### Difficulties encountered / lessons learned

It needs a lot of effort and several information days and personal talks in order to convince enough house owners to connect to the district heating.

Some bioenergy village projects fail to start up as they are not able to provide heat at a competitive price (the low oil price is a project killer).

Links:

- [www.energieregion-waermetetze.de](http://www.energieregion-waermetetze.de)
- <http://www.energiekompetenz-bw.de/waermetetze/wissensportal/informationstransfer/leitfaeden-und-studien/>

### Potential for learning or transfer

- Bioenergy villages are a great possibility for rural communities to participate in the energy transition.
- District heating networks work in most parts of Europe (as long as there is heating demand).- District heating can be based on regional resources, this increases energy security and reduces dependency on fossil fuel.

### Contact & further information

**Origin:** Germany  
**Contact:** Volker Kromrey (German, English)  
 Bodensee-Stiftung / Lake Constance Foundation  
[volker.kromrey@bodensee-stiftung.org](mailto:volker.kromrey@bodensee-stiftung.org)



### 3. Solarbundesliga, Germany

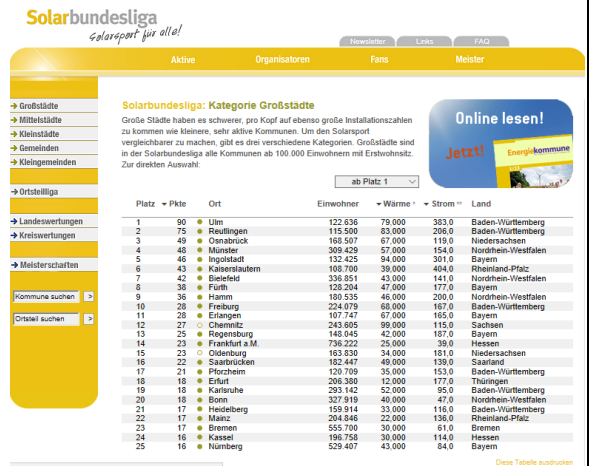
#### Detailed information

**General approach:** The Solarbundesliga is a ranking of the most successful solar energy communities in Germany. The benchmark used is the per capita output for solar heat and solar power installed in a municipality. The organization is the same as most soccer leagues in Europe. The categories are metropolitan (Series A), the middle towns, and small villages. As with the soccer national league and county leagues, the competitors aim to win the championship through increasing solar PV installations.

The ranking is published at the end of the season.

**Impact:**

- Raising awareness of solar PV
- Motivates the municipalities to find new solar PV projects in their area and motivates citizen to join in by installing PV on their roofs
- Village and cities compete among themselves
- Winning the championship increases the popularity of the village
- Marketing effects
- Organized information and exchange program for cities involved.



#### Evidence of Success (results achieved) / Difficulties encountered / lessons learned

First Solarbundesliga season started in 2000/2001. Since 2,422 municipalities participate actively, more than 7.4 million kW PV installation, more than 2.4 million m<sup>2</sup> installed

**Resources needed**  
**None!** The attractiveness of the solarbundesliga is the ease of participation. The league is organized by the editors of a renewable energy journal and received start up support from a national environmental organization. Nowadays the attractiveness of the solarleague is so important, that large companies (e.g. energy supplier, PV installation companies) sponsor and support the league. A simple calculator program creates the ranking. Reporting tables for citizens, communities, municipalities.

The solarbundesliga is actually an even runner. Publicity for the Solarbundesliga was difficult at the start, but with a number of different ambassadors (especially mayors), its fame increases with every season. Snowball effects were observed at the beginning of the project, so when some cities joined up, their neighbour cities then followed. Sponsorship boosted the solar league. In some very successful cities the motivation to participate has decreased because new PV installations do not have such a big impact on the ranking any more. It is helpful when the Environmental Department of the city is in charge of the report to the league organizer.

#### Potential for learning or transfer / Contact & further Information

- Great transfer potential to every country with awareness of the soccer league ("La Seria Solare A")
- The competitive spirit and motivation increases PV installation, especially if the municipal authorities offer further incentives (e.g. small grants for new installation)
- Great marketing options and communication methods to tell everyone about the potential of solar energy and for the solar league.
- No special good practice required
- Possibility to address a variety of different target groups:
  - o Business oriented participants
  - o School classes (support educational and awareness work)
  - o General public
  - o Municipalities, Energy suppliers
  - o Community energy people
- Vision of an European Champions League for solar energy

**Origin:**  
Germany

**Contact:**  
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E-Mail: [dimitri.vedel@bodensee-stiftung.org](mailto:dimitri.vedel@bodensee-stiftung.org)


**Homepage (German):**  
Solarbundesliga <http://www.solarbundesliga.de/>



## 4. Bioenergy Villages, Germany


Detailed information	
<p><b>General approach:</b></p> <ul style="list-style-type: none"> <li>– Funding programme for clubs, church organizations, municipalities etc.</li> <li>– Investment measures towards CO2 reduction</li> <li>– Support for technical skills and measures for CO2 reduction</li> <li>– Support for public organisations to strengthen awareness and accelerate development of RES and energy efficiency</li> </ul>	
<p><u>Funding scheme Part-A – Programme of CO2 reduction</u></p> <p>&gt;&gt;Funding of investments measures for CO2 reduction</p> <ul style="list-style-type: none"> <li>– Grants of 50€ for each tonne of CO2 saved</li> <li>– Funding climate protection measures on non-residential buildings</li> <li>– Funding rate of 30% (maximum of 200.000€)</li> <li>– Examples of measures: electric heating replacement, district heating, thermal insulation if required standard achieved, renewable energy heating system, air conditioning refurbishment, lighting system converted to LED</li> </ul>	<p><u>Funding scheme Part-B – Programme Structure, qualification and information</u></p> <p>&gt;&gt;Funding for support for climate protection measures (consultancy, energy audits, networking, knowledge transfer)</p> <ul style="list-style-type: none"> <li>– Measures to promote professional competence</li> <li>– Development of efficient and sustainable processes to reduce CO2</li> <li>– Each Measure with different grant and funding</li> <li>– Examples of measures: Support for regional energy agencies, network of energy efficiency experts, consultancy for energy efficiency at hospitals, expert assistance for operating a combined heat and power plant, systematic energy management for public organisations, inter-company energy saving network</li> </ul>
<p><b>Impact:</b></p> <ul style="list-style-type: none"> <li>– Support for refurbishment and improving the infrastructure of public organisations</li> <li>– Projects with a role model function → Raising awareness</li> <li>– Reduction of CO2, triggering investments, reduction of energy bills</li> <li>– Starting Community Energy schemes with existing communities</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<p>Evaluation of program 2002 – 2010:</p> <p><b>Funding Part-A</b></p> <ul style="list-style-type: none"> <li>– No. of approved applications: 1,614</li> <li>– Approved funding: 54 Mil. €</li> <li>– Initiated Investment: 397 Mil. €</li> <li>– Annual CO2 reduction: 113.347 t</li> <li>– Efficiency of the Funding: 26€/t CO2</li> </ul> <p><b>Funding Part-B</b></p> <ul style="list-style-type: none"> <li>– No. of approved applications: 1,319</li> <li>– Approved funding: 16 Mil. €</li> <li>– Initiated Investment: 97 Mil. €</li> <li>– Annual CO2 reduction: 61.781 t</li> <li>– Efficiency of the Funding: 20€/t CO2</li> </ul>	<ul style="list-style-type: none"> <li>– A short processing time for applications helps to ensure projects are delivered</li> <li>– Technical details are necessary to evaluate applications</li> <li>– Technical Measurements are less efficient in terms of CO2 reduction compared to programme part B of supplying Information etc.</li> <li>– Financing some projects can be a huge challenge despite of attractive funding and grants; this is due to legal issues, as well as due to the lack of acceptance.</li> </ul>
	Resources needed
	<ul style="list-style-type: none"> <li>– The programme is funded by the federal ministry of environment and energy in Baden-Württemberg.</li> </ul>
Potential for learning or transfer	Contact & further Information
<ul style="list-style-type: none"> <li>– Good potential to transfer on a national/state level</li> <li>– Funding programme can be an effective, incentivised way to focus community energy development. Energy transition is a structural change which needs the support of the civil society.</li> <li>– Approach to trigger community energy</li> </ul>	<p><b>Origin:</b> Germany</p> <p><b>Contact:</b> Bodensee-Stiftung / Lake Constance Foundation Matthias Koppe (Language: German, English) Tel.: +49 (0)7732-9995-442 E-Mail: <a href="mailto:matthias.koppe@bodensee-stiftung.org">matthias.koppe@bodensee-stiftung.org</a></p> <p><b>Homepage (German):</b> <a href="https://um.baden-wuerttemberg.de/de/klima/informieren-beraten-foerdern/klimaschutz-plus/">https://um.baden-wuerttemberg.de/de/klima/informieren-beraten-foerdern/klimaschutz-plus/</a></p>

## 5. Bioenergy villages – scientific approach, Germany

Detailed information	
<p><b>General approach:</b></p> <p>Particularly in rural areas, heating buildings relies heavily on fossil fuels which have to be imported. This means that financial resources leave the community and climate goals cannot be reached. Bioenergy villages strive to use local/regional energy resources as much as possible (by definition at least 50% of the primary energy comes from biomass). The heart of the bioenergy village is its district heating network. Often the waste heat from CHP (biogas) is used to cover the base load. Other renewable sources supplement the biogas heat (e.g. wood chips, solar heat).</p> <p>It is vital to include the community in planning processes as well as in the management of the heating network. High acceptance and direct participation are critical for successful implementation.</p> <p><b>Scientific approach:</b></p> <p>Bioenergy villages are well established in Germany, but for the first Bioenergy Village scientific support was crucial. A scientific joint venture of several universities including applied sciences provided academic research and analysis to support the whole process from concept through to commissioning. This included inter-disciplinary approaches from different specialist departments including the following research areas:</p> <ul style="list-style-type: none"> <li>– Sociology (acceptance, participation)</li> <li>– Economic (Operator strategies)</li> <li>– Technical (Technical requirements)</li> <li>– Agriculture</li> </ul> <p>Each subject area wrote a scientific report on the research results and a produced very practical guidelines for citizens or energy cooperatives. All guidelines were published through the Ministry of Agriculture and distributed to the public authorities in the regions. This enabled support services in the regions helped develop new initiatives.</p> <p><b>Expected effects:</b></p> <ul style="list-style-type: none"> <li>– Raising awareness for bioenergy villages</li> <li>– Scientific analysis</li> <li>– Guidelines</li> <li>– Definition of bioenergy villages as base line for subsequent support services</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<p>As a scientific experience, the measurability of success is difficult to define. However, with more than 150 new bioenergy villages since 2006 all over Germany and most of them based on the model of the first bioenergy village, the evidence of success is apparent.</p>	<p>From a strictly economic point of view, the operator form would be different in today's context. In the scientific context the heat production benefit from an important financial contribution. The prices for the heat didn't reflect the real prices. But the low prices for the heat were necessary to create acceptance and contributed to a high participation.</p>
Resources needed	<p>The general approach of how to create an interest in, and acceptance of, bioenergy villages is still relevant. All the guidelines are regularly reviewed and updated based on the latest funding support and financial loans.</p>
<p>The resources invested were very important. However, the scientific approach financed the delivery of the project. The village of Jühnde was a living lab. The complex research findings and guidelines were all presented in a user-friendly manual.</p>	Potential for learning or transfer
<ul style="list-style-type: none"> <li>– Great transfer potential because of the existing support for research across different disciplines.</li> <li>– Existing studies</li> <li>– No new strategy required</li> <li>– People involved in and sensitised for community energy in different field of actions</li> <li>– Vision of a European Champions League for solar energy</li> </ul>	Contact & further Information
	<p><b>Origin:</b></p> <p>Germany</p> <p><b>Contact:</b></p> <p>Bodensee-Stiftung / Lake Constance Foundation            Dimitri Vedel (Language: German, English, French)            Tel.: +49 (0)7732-9995-47            E-Mail: <a href="mailto:dimitri.vedel@bodensee-stiftung.org">dimitri.vedel@bodensee-stiftung.org</a></p> 



## 6. Citizens and Climate Change: Participatory approach, Italy

Detailed information	
<p><b>General approach:</b> The participatory approach took the form of a series of meetings and conferences bringing together citizens with expertise from the regional and local governments, energy agencies, private agencies, industries, associations, research institutes and university. Stakeholders can also meet politicians to talk about energy efficiency, sustainable energy and climate change.</p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>- Sharing citizens' feelings about themes such as energy efficiency, sustainable energy and climate change;</li> <li>- Sharing citizens' expectations from the region, relating to, for example, agriculture and tourism;</li> <li>- Citizens can put forward solutions and discuss challenges and opportunities;</li> <li>- Citizens can share best practice examples.</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<p>The Region of Abruzzo has successfully implemented three types of participatory events aimed at involving all citizens of the territory:</p> <ul style="list-style-type: none"> <li>- <b>World Wide Views on Climate and Energy</b>, the largest ever citizen consultation on climate change held on 6th June 2015 in 75 countries including the region of Abruzzo.</li> <li>- <b>100 Solutions for Climate</b>, the international competition for citizens on climate change. Abruzzo Region was the only coordinator for Italy. 587 projects have been submitted from all over the world including 19 from citizens, municipalities and schools of Abruzzo Region.</li> <li>- Participatory process related to the development and implementation of the <b>Climate Change Adaptation Plan for Abruzzo Region</b>. The objective is to develop and implement a bottom-up and replicable participatory process in order to transfer technical-scientific information to stakeholders and identify and implement adaptation measures to climate change. 5 meetings have been organized so far in 5 different cities of the Region.</li> </ul>	<p>Difficulties:</p> <ul style="list-style-type: none"> <li>- Reaching a relevant number of citizens, including experts and stakeholders, in the implementation of events and initiatives due to the lack of human resources at the energy and environment department dedicated to those kind of activities;</li> <li>- Limitation of financial resources.</li> <li>- For example, for the World Wide Views project, we received training in Paris, documents were printed participants, venue rental, catering etc... for a total amount of about Euro 16,000</li> <li>- The online Participatory process was organized in public buildings and excluding staff costs cost around Euro 8,000</li> </ul> <p>Lessons learned:</p> <ul style="list-style-type: none"> <li>- Citizens are very concerned with energy, climate and environment issues and they want to have an active role in the regional policy and initiatives.</li> </ul>
Resources needed	
<p>The following resources are needed: know-how and support from experts in the field of environment, energy and climate change. Local universities, Agencies, Authorities and enterprises planned public events and seminars in order to share knowledge about energy efficiency, renewable energy and climate change; a budget for the delivery of the events (location, educational and training materials, etc...).</p>	
Potential for learning or transfer	Contact & further Information
<ul style="list-style-type: none"> <li>- Involvement of citizens and their awareness about important themes such as renewable energy and climate change;</li> <li>- Sharing citizens feelings about these themes;</li> <li>- Sharing good examples;</li> <li>- Training and development activities;</li> <li>- Meeting between stakeholders and citizens;</li> <li>- Improved involvement of all citizens in the regional policies and activities.</li> </ul>	<p><b>Origin:</b></p> <p style="text-align: center;">Abruzzo Region (Italy)</p> <div style="text-align: right;">  </div> <p><b>Contact:</b></p> <p style="text-align: center;">Regione Abruzzo</p> <p><b>Homepage (Italian):</b>  <a href="https://www.regione.abruzzo.it/content/contatti">https://www.regione.abruzzo.it/content/contatti</a></p>

## 7. ESCOs model, Italy

Detailed information	
<p><b>General approach:</b> The Energy Services Company (ESCO) model can enable public and private sectors to work together to deliver projects. Private Finance is any amount of funds provided by financial institutions that operate in the market in a manner comparable to a private sector financial institution, including private investors (ESCOs, institutional investors, general public) for investments in energy renovation of buildings</p> <p>In the Abruzzo Region three projects are delivering Energy service agreements - EPC, ESC (energy performance contracting; energy service contracting) - implemented in a school in Pescara Municipality; one as a public-private partnership on energy efficiency in a real estate in Montesilvano (Provincia of Pescara); one in a public-private partnership at Atesa swimming pool) have been highlighted as good practices within the NEW FINANCE project (Interreg MED).</p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>- Establishment of public-private partnerships</li> <li>- Delivery of building improvement projects (e.g. energy efficiency) by public-private partnerships</li> <li>- Lower emissions</li> <li>- Reduction of public expenditure by the municipality</li> <li>- Increased energy security and reduced dependence on foreign energy imports</li> <li>- Outreach and awareness</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<p><b>1_ Provincia of Pescara (School in Montesilvano)</b> The building, built after 1978, consists of a three-story ring plant. Heated surface 7532.1 sqm. The old thermal system was made up of six 132 kW CHAFFOEAUX modular heat generators. The solution chosen for the replacement of heat generators is the installation of 7 condensing-type FONTECAL heat generators, installed in a series with a total power of 590 [kW]. The heating system is able to meet the building's heat demand. Contract (EPC) 2012 September - 2017 September.</p> <p><b>2_ Municipality of Montesilvano:</b> energy efficiency in a real estate (window replacement with highly energy efficient windows);</p> <p><b>3_ Municipality of Atesa.</b> solar heating for swimming pools and domestic hot water. SEA invested and delivered a solar heating plant to produce heat for the swimming pool and hot water. 80 vacuum collectors were installed and are expected to produce at least 140.000 kWh per year of thermal energy. Heat is exchanged in a heat exchanger and delivered to the swimming pool, while domestic hot water is produced and stored into three boilers 2.000 litres each. A management system allows SEA to check all the relevant plant parameters, energy consumption and production, to verify that the energy production complies with output expectations. An EPC contract between SEA and the Municipality of Atesa, as the owner of the swimming pool, states that the plants must provide at least 140.000 kWh of thermal energy per year, or the annual payment to SEA will reduce. During the first six years, the minimum level has always been reached, apart from 2012 because of unusually snowy weather. This project has been used and approved in the Certification Scheme for ESCO required by the Italian standard UNI CEI 11352.</p>	<p>Difficulties:</p> <ul style="list-style-type: none"> <li>- The ESCOs model is well-known in territory; many people don't know about this model or they are wary;</li> <li>- Administrative and bureaucratic constraints.</li> </ul> <p>Lessons:</p> <ul style="list-style-type: none"> <li>- Training and information-sharing about the ESCO model is crucial;</li> <li>- The role of the region as mediator between ESCOs, banks, municipalities, etc... is strategic.</li> </ul> <p><b>Resources needed</b></p> <p><b>1_ Provincia of Pescara (School in Montesilvano)</b> TIR of the project: 0,40% Total investment in ECMs: 26.694 € A Public-private partnership was created through Consip Contract.</p> <p><b>2_ Municipality of Montesilvano:</b> Investment: 193.055,00 Simple Payback Period: 7 Energy Saving: 47 (kWh/ m2/ y) Financial Model: Public-private partnership Duration of Contract and/or loan: 9 Years, 0 months.</p> <p><b>3_ Municipality of Atesa</b> Total Investment: % of own resources: 35 % funded: 65</p>
Potential for learning or transfer	Contact & further information
<ul style="list-style-type: none"> <li>- Early research to identify possible improvements at different levels: engineering, building construction, and management;</li> <li>- Various private and public partnership and opportunities, means sharing experience, training and cooperation is essential.</li> </ul>	<p><b>Origin:</b> Abruzzo Region (Italy) <b>Contact:</b> Regione Abruzzo. <a href="http://newfinanceplatform.com/">http://newfinanceplatform.com/</a> <a href="https://www.regione.abruzzo.it/content/contatti">https://www.regione.abruzzo.it/content/contatti</a></p>

## 8. Oldham Community Energy Finance Model, UK

Detailed information	
<p><b>General approach:</b></p> <p>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: <a href="http://oldhamcommunitypower.org.uk/">http://oldhamcommunitypower.org.uk/</a></p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>– The Council loan to OCP enabled the group to complete solar installations in time to meet a Feed In Tariff deadline and maximise their income and return to community investors</li> <li>– Then the group had 2 years to refinance the loan by selling shares to Oldham citizens</li> <li>– Six sites are now saving money on their electricity bills, at a 20% discount from their main electricity supplier. Five of these are schools and one is a community centre</li> <li>– OCP has a 21 year lease with the Council for the roof space on the buildings</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<ul style="list-style-type: none"> <li>- Around £160,000 of shares have now been sold to Oldham citizens</li> <li>- Around 220kW of solar PV has been installed on six sites</li> <li>- Sites are saving 20% on the electricity they buy from OCP</li> <li>- The original 4 OCP directors (3 from the community and 1 from the Council) have now been joined by a new Financial Director, from the community, who is also a shareholder</li> </ul>	<ul style="list-style-type: none"> <li>- Ironically the greatest difficulties for the scheme were within the Council itself – officers in Legal and Property had no experience of delivering a community energy scheme, did not have the requisite knowledge and treated the voluntary community group in the same way that they would have treated a commercial organisation – with suspicion and in an adversarial fashion.</li> <li>- External legal expertise had to be bought in to inform the Council's legal team, and the lease agreement between the Council and OCP has taken two years to negotiate and is still not complete.</li> <li>- The Council loan to OCP had to be at the same rate (4%) as the forecast interest payments to shareholders – this was to avoid infringing EU State Aid rules</li> </ul>
Resources needed	
<ul style="list-style-type: none"> <li>- Volunteer time from the 3 community directors</li> <li>- Specialist support from Shareenergy co-op, who support community energy groups</li> <li>- Council loan of £250K for 220kW of solar PV</li> <li>- Officer time from Council officers to support the voluntary community group</li> <li>- A government grant of £20K for project development</li> </ul>	
Potential for learning or transfer	Contact & further Information
<ul style="list-style-type: none"> <li>- Any local authority / municipality could follow the same model with a local community group</li> <li>- Even private sector companies could use this model</li> <li>- In the UK, specialist support for community energy groups can be provided by organisations such as Shareenergy. In EU regions where this kind of support is not available, it may have to be provided by the municipality.</li> </ul>	<p><b>Origin:</b>UK – Oldham Council</p> <p><b>Contact:</b></p> <p>Andy Hunt            Strategy, Partnerships and Policy Manager            Oldham Council            Room 317, Civic Centre, West Street, Oldham OL1 1UG            T: 0161 770 6587            E: andrew.hunt@oldham.gov.uk</p> <p><b>Homepage:</b> <a href="http://www.oldham.gov.uk">www.oldham.gov.uk</a></p>

## 9. Community Energy England, UK

Detailed information	
<p><b>General approach:</b></p> <p>Community Energy England <a href="https://communityenergyengland.org/">https://communityenergyengland.org/</a> is the umbrella organisation for community energy organisations in England. It is a not-for-profit company, with five staff, it is funded through membership fees, event sponsorship and through charitable funding to provide support to groups, and representation and lobbying to government and the regulator. It holds events to help build capacity, disseminates the benefits of community energy to a wide range of stakeholders, helps groups share best practice, understand regulation and has brought in the District Network Operators (energy transmission and supply companies) to innovate with community energy groups. It also has a Community Energy Hub website where case studies can be uploaded to share.</p> <p>Every year, Community Energy England holds a “Community Energy Fortnight”, where community groups are encouraged to celebrate their projects with events and promotional campaigns, to raise awareness amongst the general public of community energy and the opportunities it presents. CEE holds an annual conference attended by hundreds of community energy practitioners and wider stakeholders.</p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>– Bi-weekly newsletter sharing developments in the community energy sector and insights into the current and future policy environment.</li> <li>– Annual Sector survey, leading to publication of an annual State of the Sector report used by policy-makers, DNOs, installers, media and the Community Energy sectors itself <a href="https://communityenergyengland.org/pages/state-of-the-sector-survey-2019">https://communityenergyengland.org/pages/state-of-the-sector-survey-2019</a></li> <li>– Communications and Profile-Raising; Community Energy Fortnight provides events, training, conferences and raises awareness of Community energy</li> <li>– Advocacy and Policy – In 2019 CEE appointed a new Policy and Advocacy Manager to work across government, local authorities, the regulator and DNOs</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<ul style="list-style-type: none"> <li>- Membership – Community members - 182, Corporate members - 20, Public members - 15</li> <li>- State of the Sector report for 3 years published</li> </ul>	<p>Difficulties: constant policy change in the UK government has meant CEE staff spend a lot of time responding to policy consultations. This restricts the amount of time they can spend on supporting groups.</p> <p>Membership fees and corporate sponsorship is not sufficient to enable CEE to perform without core charitable funding, as such funding bids must be made.</p> <p>Lessons: CEE has invested in a core member of staff who will be based in London and will lead on all aspects of policy CEE is helping to form more local hubs and working with these is a way to reach more community energy organisations to share support.</p>
Resources needed	
<ul style="list-style-type: none"> <li>- Staff, office; starting small, CEE now has five staff members based in Sheffield</li> <li>- Funding for staff salaries, travel and communications costs</li> <li>- Events funding / sponsorship</li> </ul>	
Potential for learning or transfer	Contact & further Information
<ul style="list-style-type: none"> <li>- There is good potential for transfer of a national Community Energy Sector organisation that can support sector growth and innovation and be the voice of the CE sector.</li> <li>- CEE works closely with Community Energy Wales and Community Energy Scotland, who are organisations with similar aims, but who each participate in renewable energy projects.</li> <li>- CEE started in 2014 with 1 staff members and has over 5 years expanded to five staff members, 11 directors and has raised the profile of the sector.</li> <li>- It is a member of RESCOOP</li> </ul>	<p><b>Origin:</b>UK – Oldham Council</p> <p><b>Contact:</b></p> <p>Andy Hunt Strategy, Partnerships and Policy Manager Oldham Council T: 0161 770 6587 E: <a href="mailto:andrew.hunt@oldham.gov.uk">andrew.hunt@oldham.gov.uk</a> <b>Homepage:</b> <a href="http://www.oldham.gov.uk">www.oldham.gov.uk</a> <b>Community Energy England website:</b> <a href="https://communityenergyengland.org/">https://communityenergyengland.org/</a></p>


## 10. Major retrofit of residential blocks – Prahova, Romania

Detailed information	
<p><b>General approach:</b> 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 when the refurbishment costs were split evenly 50% / 50% between national and local budgets. There was a 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 of the owners to decide in 2018 another smaller batch were refurbished with many others in different stages of preparation. The financing is different this time 60% national budget, 15% local budget and 25% flat owners.</p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>– Refurbishment of very old residential blocks in high need of repairs</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<p>During 2011-2013, financed by Ministry and Ploiesti Municipality, 46 blocks were refurbished totalling 3221 flats and 224.514 square meters.</p> <p>During 2015-2016, another 6 blocks were refurbished totalling 308 flats and 19.095 square meters.</p> <p>There are audits for 43 more blocks to be refurbished, contracting is ongoing.</p>	<p><b>Difficulties:</b></p> <ul style="list-style-type: none"> <li>- Convincing the owners to support the scheme</li> <li>- Identifying the proper financing tools to execute the works</li> <li>- Long duration (years!) between starting the necessary studies to the finalization of the investment.</li> </ul> <p><b>Lessons learned:</b></p> <ul style="list-style-type: none"> <li>- The energy savings are substantial, reducing bills and protecting the environment;</li> <li>- The interior of the flats is much more comfortable;</li> <li>- The exterior of the blocks has improved visually;</li> <li>- Having the first few blocks finalised increased the interest of other owners association to be included in the program.</li> </ul>
Resources needed	
Financial investment of 10.750.000 EUR	
Potential for learning or transfer	Contact & further Information
Energy savings were between 57-80%, from 200-384 kWh/m <sup>2</sup> /year before refurbishment to 65-85 kWh/m <sup>2</sup> /year after, average annual energy savings are estimated at 21 GWh.	<p><b>Origin: Prahova, Romania</b></p> <p><b>Contact: Ae3R Ploiesti – Prahova</b></p> <p><a href="mailto:office@ae3r-ploiesti.ro">office@ae3r-ploiesti.ro</a></p>

## 11. University – business cooperation for development of sustainable business models in energy sector, Romania

Detailed information	
<p><b>General approach:</b> For the past 2 years the Oil Gas University of Ploiesti has organized a competition to challenge students to develop innovative and sustainable models for implementation in the renewable energy sector. The students have the unique opportunity to pitch their ideas and receive valuable feedback from a specialist board that includes a wide array of key stakeholders well established in this sector from Prahova County Council, The Regional Energy Agency Ae3R Ploiesti – Prahova, Prahova Chamber of Commerce, The Romanian Association of Economists, The Society of Petroleum Engineers, The Romanian Association of Expert Accountants and various students’ representatives. Participation is national wide with University representatives from all over Romania: Brasov, Targoviste, Sibiu, Alba Iulia, Suceava, Pitesti, Galati, Oradea, Arad, Targu-Jiu and Ploiesti. Last edition organized at the end of November 2018 was a huge success with 39 projects prepared by 94 students, the debates lasted 3 days and at the end the best ideas were awarded financial prizes.</p> <p>This kind of competition makes great use of fresh ideas coming from future specialists (students) while giving them the opportunity to interact directly to representatives from both public and private sector, exchange ideas and receive valuable feedback. The main idea is to put together stakeholders from all areas, to foster discussion, increase cooperation at regional/national level and develop innovative approaches to tackle various barriers in the renewable energy sector.</p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>– Stimulation of the younger minds competitiveness and creativity to tackle modern times barriers in the energy sector</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<p>Last edition organized at the end of November 2018 was a huge success with 39 projects prepared by 94 students, the debates lasted 3 days and at the end the best ideas were awarded financial prizes.</p>	<p><b>Difficulties:</b></p> <ul style="list-style-type: none"> <li>- Generation gap, the participating specialists in various sectors (energy experts, economists, engineers etc.) can find it difficult to communicate with the younger generation.</li> </ul> <p><b>Lessons learned:</b></p> <ul style="list-style-type: none"> <li>- Students are very interested to participate in these kind of competitions, each successive session having a greater success.</li> </ul>
Resources needed	
<p>20,000 EUR for organization of the events, depending on the scale and scope</p>	
Potential for learning or transfer	Contact & further Information
<p>Students can be stimulated by the competition to provide fresh ideas to existing challenges in the energy sector.</p>	<p><b>Origin: Prahova, Romania</b></p> <p><b>Contact: Ae3R Ploiesti – Prahova</b></p> <p><a href="mailto:office@ae3r-ploiesti.ro">office@ae3r-ploiesti.ro</a></p>

## 12. Municipality of Bratsigovo, Bulgaria

Detailed information	
<p><b>General approach:</b> The introduction of number of energy efficiency measures funded by different sources – ERDF, EEA and National funding aimed at introducing a combination of renewable energy sources to provide electricity, heating and cooling for the air conditioning of 12 municipal buildings. The investment in energy efficiency measures in Bratsigovo Municipality encouraged the transition from municipal owned buildings using fossil fuel to second-generation buildings/sites, which are sustainable powered and environmentally friendly. Main stakeholders in the initiative are the municipal authorities and managers of municipal enterprises as well as the local population. The Municipality of Bratsigovo has developed a Sustainable Energy Action Plan for the period 2015 – 2020 where further investments in energy efficiency measures and use of RES are planned.</p>	
<p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>– The investments enabled the installation of 4.5 MWp of biomass heat/electrical energy and 160 sq.m solar panels. Both renewable energy sources contributed to significant reduction in energy costs, cutting them by more than 50%.</li> <li>– On the roof of the health care centre in the main city of the Municipality a photovoltaic of 30 KWp has been installed and the electricity is used on site. Some of the electricity is sold to the grid mainly out of working hours.</li> <li>– Current energy savings for the Municipality are around 5 MW/h and reduction of CO2 emissions - 13 t/year.</li> <li>– The Municipality became member of Covenant of Mayors (CoM) in 2015 and was awarded the Energy Award for 2016 which recognises the firm commitment to increase energy efficiency and use of renewable energy in the municipal territories.</li> </ul>	
	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<ul style="list-style-type: none"> <li>- 4.5 MWp of biomass heat and power installed since 2012</li> <li>- 160 sq.m solar PV installed</li> <li>- Energy bills cut for 12 buildings by more than 50%</li> <li>- Energy Award 2016 from Covenant of Mayors</li> </ul>	<p>The difficulties encountered were the financing of the projects and raising awareness. The Municipality technical team has developed a pipeline for municipal and domestic buildings, however alternative finance has not been located in the absence or expiry of grant schemes. The lack of access to capital for municipalities and private owners and knowledge of how to raise alternative finance than grant finance is a common problem for the local authorities in Bulgaria. There are opportunities to share financial modelling for non-grant finance, for example from the privately owned residential PV scheme, the Bratsigovo hospital PV scheme and other projects which have achieved short-medium term payback with energy cost savings.</p> <p>The weak areas relating to communication are a serious threat to achieving scale in community energy schemes. Using community energy leaders/champions from existing projects to deliver the positive messages about energy efficiency, renewable and community energy, raising awareness and provide mentoring across region will contribute to the success of wider community energy projects.</p>
Resources needed	
<ul style="list-style-type: none"> <li>- The amount invested in EEM was 3 million euro from 2012 – 2016.</li> <li>- Finance from: ERDF, EEA, National funding – 85% other funding, the rest is provided by the Municipality budget.</li> <li>- Project management shared between municipal technical staff – 5 staff and external Technical Advisor.</li> </ul>	
Potential for learning or transfer	Contact & further Information
<p>This practice can be transferred to other small municipalities in Bulgaria since they face the same problems with high energy costs and use of fossil fuels. The structure of the social and utility infrastructure is similar and as well as the economic development. The lessons learned can be of support for other local authorities in Bulgaria.</p>	<p><b>Origin:</b> Bulgaria  <b>Contact:</b> Romyana Grigorova (Bulgarian)  Municipality Bratsigovo  Email: grigoriur@abv.bg  <b>Homepage:</b> <a href="http://www.bratsigovo.bg/documents.php?id=143">http://www.bratsigovo.bg/documents.php?id=143</a>  (Bulgarian / English)</p>

### 13. ALTERNA Coop Valenciana, Spain

Detailed information	
<p><b>General approach:</b>            ALTERNA Coop Valenciana is a cooperative for sustainable mobility. Its goal is to facilitate and encourage its members and society in general to use the least possible amount of energy for mobility (by walking, biking, and through shared electric vehicles). Thus, their main activity is car sharing among its members, using electric vehicles that are charged with electricity coming from renewable energy sources.</p> <p>ALTERNA (<a href="http://alternacoop.com">http://alternacoop.com</a>) is based in the Valencian municipality of Albalat dels Sorells, and it now has 327 members distributed among 6 main local groups in the Valencia Region. Its most active group is located in the centre of the Valencia city, where the cooperative has two electric cars and two charging stations. The two cars are shared among 20 users, and the car sharing is managed through an app installed in their phones.</p> <p>The cooperative also has another electric car in the village of Burriana, which is shared among 5 members of the cooperative. This car is not shared among more members because it is not ready yet to use the app. This means that the car cannot be opened with the phone, it has to be opened with the key, so the key has to be physically exchanged between the members and this takes time.</p> <p>Another goal of the cooperative is to share cars with the municipalities where the groups are located. In this way, the municipality staff would use the car during working hours, and the rest of the time and weekends the car, or cars, can be used by the members of the cooperative.</p> <p>The cooperative is growing fast in terms of the number of members; it has a big number of interested citizens, but the purchase is going slowly because of a lack of liquidity: they do not want to be financed and it is the cooperative who has to buy the cars. The recovery of the investment comes through the regular payments of the members of the cooperative and therefore it takes time. ALTERNA Coop is also part of a European network of cooperatives for mobility, which allow its members to share the cars of other cooperatives when they travel to their cities.</p>	
<p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>– Citizens have been brought together to form a community group</li> <li>– Increased electric mobility (number of cars and charging stations)</li> <li>– The project is already being replicated with 6 local groups in different municipalities</li> <li>– Collaboration with municipalities and public entities to create a network of public charging stations</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<ul style="list-style-type: none"> <li>– Number of cooperative members: 327</li> <li>– Number of local groups: 6</li> <li>– Electric cars: 2</li> <li>– Charging stations: 2</li> <li>– Estimated number of car users: 10 users/car</li> </ul>	<p><b>Problems</b></p> <ul style="list-style-type: none"> <li>– Lack of liquidity, takes time to get the money to buy the cars.</li> </ul> <p><b>Lessons learned:</b></p> <ul style="list-style-type: none"> <li>– Number of cars can be greatly reduced (10 users per car), people don't need to own their own car.</li> <li>– Benefits of belonging to a network of mobility cooperatives (mutual support, sharing of good practices, shared costs for platform development, collective purchase of cars, ...)</li> </ul>
	Resources needed
	<ul style="list-style-type: none"> <li>– Software and hardware to manage the car sharing</li> <li>– Funds to buy the cars and for the charging stations</li> <li>– Some staff to run the cooperative</li> </ul>
Potential for learning or transfer	Contact & further information
<p>The potential for transfer is good; there are many local groups interested. This approach is new in the Valencia Region but it has the potential to be transferred to any urban centre in the region.</p>	<p><b>Origin:</b> Valencia Region (Spain)  <b>Contact:</b> IVACE            Germán Cuñat (Language: Spanish, English)            Tel.: +34 961 209 604            E-Mail: <a href="mailto:cunyat_ger@gva.es">cunyat_ger@gva.es</a>  <b>Homepage:</b> <a href="http://alternacoop.com">http://alternacoop.com</a></p>



## 14. Biobriquette in Told, Hungary

Detailed information	
<p><b>General approach:</b></p> <p>Winter heating is a significant problem in poor areas of Hungary. Isolated villages mostly populated with Roma people are the worst affected. These disadvantaged communities suffer from multiple challenges including fragmented communities, unemployment, low quality infrastructure, low education levels, poor health, poverty and high crime levels. This is the case in the small village of Told in Eastern Hungary. In order to tackle some of these problems the NGO Igazgyöngy Alapítvány /Real Pearl Foundation designed an integrated social, educational and skills development program to enable those willing to participate to become more self-sufficient. The first step was to generate trust and acceptance using arts educational approaches with the children. The second phase addressed adults and introduced skills development, health, social and job generation.</p> <p>The Real Pearl Foundation– with the help of a dedicated external volunteer– introduced an adapted biobriquette manufacturing program adopted from the Legacy Foundation, which promotes this simple manual technique in many less developed countries globally. Some 20 residents (2-3 crew and 17 volunteers) produce biobriquette from agricultural waste (sunflower and corn residues, straw), paper and some water, using a low-tech approach. The amount manufactured has been sufficient to provide supplementary fuel for the families of the participants and some others (23 families).</p> <p>Because the manufacturing process is time consuming, and the heating value is low, this type of biobriquette was suitable for supplementary fuel. However, the early experience led to progress, and in 2019 the community with the help of Real Pearl Foundation procured a chopping machine and a professional biobriquette machine, which will allow the foundation to employ 2 people in full time and manufacture 3-4 times more biobriquettes. The output is sufficient for the entire village and will be sold to the community at 70% of the market price. Locally produced fuel cuts the transport costs for villages in having to travel to buy fuel. The production with the acquired machine is in experimental phase now (February 2019).</p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>– Sufficient supplementary non-fossil fuel for 20-23 families in the first (manual production) phase</li> <li>– Sufficient non-fossil fuel for the entire village in the second (machine production) phase</li> <li>– A healthier community with stronger cohesion including creation of two full time jobs</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<ul style="list-style-type: none"> <li>– Has provided fuel for over 20 families – now for 7th year</li> <li>– Joy of common work – initial reluctance of some turned into volunteering</li> <li>– Paved the way for further steps: <ul style="list-style-type: none"> <li>- towards higher level of production</li> <li>- towards better stoves/heating equipment</li> <li>- energy efficient refurbishment of houses</li> </ul> </li> </ul>	<p><b>Problems (for the first i.e. manual phase)</b></p> <ul style="list-style-type: none"> <li>– Time consuming, inefficient process</li> <li>– Low energy content and low energy density</li> <li>– Manual production is suitable for complementary fuel</li> </ul> <p><b>Lessons learned:</b></p> <ul style="list-style-type: none"> <li>– Not just a technique</li> <li>– Almost everyday presence needed from the foundation (for community building)</li> <li>– Enthusiastic external volunteer expert – some technical knowledge is helpful</li> <li>– Some external financial and in kind sponsorship is needed</li> <li>– Logistics of raw materials must be well organised</li> <li>– Motivated central figures are needed in the community</li> <li>– Existence of some work and crew leading experience in the community is helpful –at least for some</li> <li>– Social and environmental aspects/goals can be combined –no costly equipment necessarily needed</li> <li>– Do not give fish, give a net</li> </ul>
Resources needed	
<ul style="list-style-type: none"> <li>– Dedicated people with almost everyday personal presence for community building/development</li> <li>– A volunteer expert to provide training in the manufacturing process and to organise the logistics</li> <li>– c. EUR 2000 investment for the manual production</li> <li>– c. EUR 10 000 for the investment for the phase 2 chopping and manufacturing machine</li> <li>– A building for manufacturing and storage</li> </ul>	
Potential for learning or transfer	Contact & further information
<ul style="list-style-type: none"> <li>– Projects now in 10 villages in Hungary</li> <li>– It is transferable to countries with isolated rural poor, fragmented communities, with low skill levels, especially Roma communities.</li> </ul>	<p><b>Origin:</b> Hungary  <b>Contact:</b> LENERG  Valeria Szabó (Language: Hungarian, English)  Tel.: +36 30 232 0788  E-Mail: <a href="mailto:szabo.valeria@lenergia.hu">szabo.valeria@lenergia.hu</a>  <b>Homepage :</b> <a href="https://www.lenergia.hu/en">https://www.lenergia.hu/en</a></p>


## 15. Strawbale House Construction, Hungary

Detailed information	
<p><b>General approach:</b> In Hungary, community owned and led energy solutions are rare - for most people it is a new concept. A new idea - even if proven well-working elsewhere - needs initiators, catalyzers, market makers - whatever we call the pioneers who aim at making a breakthrough for their concept. The example of the Environment and Energy Foundation in Nyíregyháza, East Hungary shows that an NGO can play the role of such an initiator. Straw bale houses are a "new old" concept as the first such houses have been standing for 100 years, but these types of buildings are not widely known. These are highly energy efficient - their energy insulating performance is comparable to the most recent insulating materials. The Environment and Energy Foundation spreads the word through providing information, materials, posting articles on their website and organising training courses on straw bale construction covering theory and practical training sessions. The training is provided at an affordable cost.</p> <p>The Environment and Energy Foundation cooperates with an organic architect designer and a standard plan is freely downloadable. The architect can also be involved if the prospective owner wants to modify the standard plan. Since the Foundation created a forum, with a Facebook site of 28,000 followers, the number of straw bale houses built or planned has rapidly increased. Their forum enables users to share their experience or ideas on straw bale construction, and this Facebook group now operates almost autonomously forming a large community. The Foundation also helps organise community participation in straw bale house construction works. We often think of formal organisations/legal entities such as cooperatives as actors of the community energy sector - this initiative shows that informal groups such as the straw bale building community can also take part in the community energy movement.</p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>– Information and guidance spread on energy efficient and modern straw bale house building</li> <li>– An enthusiastic community is created</li> <li>– Standard type design is available –as well as designer resources for individual further development demands</li> <li>– Practical help –even helping hands in construction works</li> <li>– Number of straw bale houses are increasing at an increasing rate</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<ul style="list-style-type: none"> <li>– Number of straw bale houses are increasing at an increasing rate –several dozens have been built and hundreds are in the construction or planning phase</li> <li>– Intense user activity in the Facebook group</li> <li>– Standard type design is available</li> <li>– Experienced volunteers and entrepreneurs offer both intellectual and manual help in construction work to new people interested - and this offer is utilised indeed</li> </ul>	<p><b>Problems</b></p> <ul style="list-style-type: none"> <li>– Careful planning and execution is needed to avoid rodents and humidity/mould caused damage</li> </ul> <p><b>Lessons learned:</b></p> <ul style="list-style-type: none"> <li>– An NGO can be an engine for building a community</li> <li>– Enthusiastic external architect experts are helpful</li> <li>– Determination for the environment and organic architecture is needed for those who want to build straw bale houses</li> </ul>
	Resources needed
	<ul style="list-style-type: none"> <li>– A few dedicated people to create and maintain a Facebook site (though running it is mainly taken over by the group members)</li> <li>– Availability of an organic architect designer</li> <li>– Enthusiastic volunteers or entrepreneurs to help new people in construction works</li> </ul>
Potential for learning or transfer	Contact & further Information
<ul style="list-style-type: none"> <li>– The straw bale house concept is known to some extent in many countries – this promotion community method using social media is highly transferable to other European countries – to either urban or rural areas</li> </ul>	<p><b>Origin:</b> Hungary  <b>Contact:</b> LENERG  Valeria Szabó (Language: Hungarian, English)  Tel.: +36 30 232 0788  E-Mail: <a href="mailto:szabo.valeria@lenergia.hu">szabo.valeria@lenergia.hu</a>  <b>Homepage :</b> <a href="https://www.lenergia.hu/en">https://www.lenergia.hu/en</a>  <a href="https://www.facebook.com/Szalmabalaepiteszet/">https://www.facebook.com/Szalmabalaepiteszet/</a>  <a href="http://www.energiaeskornyezet.hu/szalmabala-epiteszet">http://www.energiaeskornyezet.hu/szalmabala-epiteszet</a></p>

## 16. Ploiesti – public-private heat network serving half of city, Romania

Detailed information	
<p><b>General approach:</b> In 2004 a PPP contract for 15 years was signed between Dalkia Romania, Ploiesti Municipality and Prahova County Council to create Dalkia Termo Prahova which was appointed as manager of the Ploiesti heating system built in '60s and committed to invest 25mil EUR to modernize it. The system included Brazi thermal power plant (10 kms away from Ploiesti), the 62km primary network, the 93km secondary network and 86 secondary heating points. Until 2015 Dalkia Termo Prahova (which changed the name to Veolia) invested 27mil EUR in a new natural gas turbine, fully automatic heating points, replacing faulty pipes and increase insulation to reduce losses and to improve the overall effectiveness of the system.</p> <p>Nowadays Veolia Energie Prahova provides heat and hot water to 57800 apartments (85% of the total in Ploiesti), 100.000 citizens (roughly half of Ploiesti population), over 30 public buildings and about 700 private businesses. The installed thermal power of the system is 3,4 Gcal/hour and the effectiveness of the secondary heating network is 92,3%.</p> <p>For the future there is an ambitious 100ml+ EUR investment plan for the Ploiesti heating system which runs until 2025 and includes replacing the old mixed power plants (natural gas and coal) with biomass/RES cogeneration combined with modern highly efficient primary/secondary networks and smart metering for the end users.</p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>– Modernisation of existing heating networks which impact a high number of citizens</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<p>Modernisation of Brazi thermal power plant, improving the insulation of the heating pipes in the primary network and changing secondary/interior pipes and metering system for all the end users (57800 apartments, 100.000 citizens, over 30 public buildings and about 700 private businesses).</p>	<p><b>Difficulties:</b></p> <ul style="list-style-type: none"> <li>- Incentivising the end users to remain in the heating scheme (more users result in a more efficient network);</li> <li>- Finding the necessary financial resources to continually improve the system (low national support for PPP model in large heating networks);</li> <li>- Technology gap between the old heating network and modern energy requirements.</li> </ul> <p><b>Lessons learned:</b></p> <ul style="list-style-type: none"> <li>- District heating is a very efficient way to reduce costs and positively impact the environment;</li> <li>- Upgrading and maintaining an old heating and network system can be costly;</li> <li>- Citizens can be very vulnerable to energy security.</li> </ul>
Resources needed	
<p>Financial investment of 27 mil EUR, with another 100 mil EUR needed for further modernisation works.</p>	
Potential for learning or transfer	Contact & further Information
<p>Central heating systems can be revitalised and modernised to meet existing requirements regarding energy savings, environment impact and energy security.</p>	<p><b>Origin: Prahova, Romania</b></p> <p><b>Contact: Ae3R Ploiesti – Prahova</b></p> <p><a href="mailto:office@ae3r-ploiesti.ro">office@ae3r-ploiesti.ro</a></p>

## 17. Biogas heat thermal station, Ihtiman Municipality, Bulgaria

Detailed information	
	<p><b>General approach:</b> Municipalities have very high costs for heating. The source of heating is fossil fuel, which makes it very expensive and it is polluting the environment. A large percentage of the municipal budget is spent on heating.</p> <p>The Municipality of Ihtiman has been successful in delivering Renewable Energy projects by attracting foreign investors, including a solar PV park and heat thermal station. The construction of biomass heating plant provided highly efficient technology for heating reaching two main goals: (i) Reduction of energy costs and (ii) Improvement of environment. It had also supported the local companies by using biomass sourced in the region. The energy cost reduction was realised through using waste biomass - wood pellet biomass that is environmental friendly and generates no pollution.</p>
<p>Main end users were all municipal buildings including kindergartens, schools, hospital and households. Industrial buildings in the Municipality were also provided with biomass heating. All together 26 end users were connected to biomass heating. In 2017 however the installation stopped operating due to a lack of enough end users. The initial business model included a number of private end users which was not achieved. The main problem was a lack of effective awareness raising among the citizens for the benefits from the initiative. As a result the Municipality faced serious problems in providing heat energy during the winter season. To overcome the problem the local authorities established last year a company named "Ihtiman Heating" Ltd, which is renting the installation for the heating season 2018-2019 and is currently looking for financial sources and partners to be able to acquire the assets.</p>	
<p><b>Effect:</b> The total investment cost is 4 000 000 Euro. The project management is realised by the technical experts of the Municipality together with external Technical Assistance. The facility has a rated capacity of 3 MW that can be expanded gradually to 10 MW and runs on 10,000 tonnes of wood waste a year. The Municipality invested in the deployment of an 8 kilometre heating distribution network and has installed a cutting-edge plant room control technology.</p>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<ul style="list-style-type: none"> <li>- Energy saving per year is 1,895 MWh/year</li> <li>- Reduction of carbon emissions – 595 t/year</li> <li>- Energy costs of the Municipality is reduced more than 200 % due to the exploitation of the biomass heating power plant.</li> </ul>	<p>The difficulties encountered are in awareness raising among the citizens. Energy transition requires active inclusion of public authorities, industry and private end-users. Public investment needs to be made in infrastructure to which businesses and end-users can connect, such as improving the network's ability to integrate electricity from renewable sources, and supporting education to improve labour force capacity.</p>
Resources needed	<p>Ensure more effective public investment in renewable energy and climate protection by dedicated communication campaign, dialogue with the citizens and active participatory process.</p> <p>The lessons learned can be of support for other local authorities in Bulgaria.</p>
<ul style="list-style-type: none"> <li>- The amount invested in the biomass heating power plant was 4 million Euro, provided mainly by the foreign investor.</li> <li>- The heating distribution network is financed by the Municipality budget.</li> <li>- Project management shared between municipal technical staff and external technical expertise</li> </ul>	
Potential for learning or transfer	Contact & further information
<p>This practice can be transferred to other municipalities in Bulgaria since they face the same problems with high energy costs and use of fossil fuels having at the same time waste wood at their disposal. The structure of the social and utility infrastructure is similar and as well as the economic development.</p>	<p><b>Origin:</b> Bulgaria <b>Contact:</b> eng. Toni Katsarov (Bulgarian), Municipality Bratsigovo Email: <a href="mailto:obshtina_ihtiman@mail.bg">obshtina_ihtiman@mail.bg</a>; <a href="mailto:t.katzarov@abv.bg">t.katzarov@abv.bg</a> <b>Homepage</b> <a href="http://www.ihtiman-obshtina.com/">http://www.ihtiman-obshtina.com/</a> (Bulgarian)</p>

## 18. Specialist Sector Support, UK

Detailed information	
<p><b>General approach:</b></p> <p>In the UK, the community energy sector is supported by a number of organisations such as Energy4All, Mongoose Energy and Sharenergy, Community Energy South and Communities for Renewables. These organisations are themselves community energy organisations but provide consultancy support to community energy organisations within the sector in areas such as financial modelling, accountancy, community share issue, sourcing finance, and technical expertise around a number of different renewable energy technologies.</p> <p>The services provided by these organisations help new starter community energy groups to plug any skills gaps they may have in developing their project, at reasonable commercial rates commensurate with community energy projects, and can relieve community groups of time-consuming burdens such as administration and accountancy.</p> <p><b>Effect:</b></p> <ul style="list-style-type: none"> <li>– New inexperienced community energy groups can outsource aspects of running their organisations to one of these specialist co-ops, adding vital capacity and ensuring that all of the necessary elements of a community energy project are addressed</li> <li>– These specialist organisations can also help community energy groups promote their share offers nationally</li> <li>– The existence of these specialist groups adds a ‘backbone’ to the sector and stability to individual community energy groups</li> </ul>	
Evidence of Success (results achieved)	Difficulties encountered / lessons learned
<ul style="list-style-type: none"> <li>- Organisations such as Sharenergy have been operational for many years, including during very difficult times for the community energy sector due to e.g. changes in Government legislation and financial support for the sector</li> <li>- The majority of new community energy groups use the services of at least one of the specialist organisations to set up and run their projects and societies</li> </ul>	<ul style="list-style-type: none"> <li>- Because these specialist support organisations make their income from supporting other groups, when the sector is enduring difficult times, for example when the national Government has removed financial support for community energy, this challenges the viability of the specialist support organisations too</li> <li>- Sometimes the specialist support organisations have a tendency to ‘take over’ projects and forget that they are actually playing a supporting role rather than directly running projects. The voluntary directors of the supported community energy group need to push back in this situation and assert their authority over their own project</li> <li>- Sometimes these specialist organisations can push community energy groups to do things they may not otherwise have done, or overstretch themselves, e.g. when a specialist support organisation makes income from supporting share offers, they might push a community group to undertake a new project and share offer where they may not otherwise have done so. This is sometimes helpful but not always.</li> </ul>
Resources needed	
<ul style="list-style-type: none"> <li>- A community energy group will need to find the money to pay one of these specialist organisations for their support. However, very often the specialist organisation can help the community energy group to bid for grant funding or other funding to enable them to do this</li> <li>- The voluntary directors of a community energy group will need to make time to liaise with their specialist support organisation and provide them with the information they need to effectively provide support</li> </ul>	
Potential for learning or transfer	Contact & further Information
<ul style="list-style-type: none"> <li>- These specialist support organisations very often began their lives as ordinary community energy groups, who have learned how to deliver projects and then begun to re-sell their knowledge via providing services to new start-ups</li> <li>- In EU regions where community energy groups already exist, there may be potential for them to expand their business activities to supporting other new community energy start-ups</li> </ul>	<p><b>Origin:</b> UK – Oldham Council</p> <p><b>Contact:</b></p> <p>Andy Hunt  Strategy, Partnerships and Policy Manager  Oldham Council  Room 317, Civic Centre, West Street, Oldham OL1 1UG  T: 0161 770 6587  E: andrew.hunt@oldham.gov.uk</p> <p><b>Homepage:</b> <a href="http://www.oldham.gov.uk">www.oldham.gov.uk</a></p>