Model Assessment of Potential and Barriers to the Development of Renewable Energy Communities at the National Level

Policy Database: Collection of Public Policies for Energy Communities (Background Paper #5)

Date: 24 October 2022 (Version 2)

Authors: Lars Holstenkamp, Christian Kriel (ECOLOG Institute for Social-Ecological Research and Education)

Contents

Figures

Tables

Abbreviations

CEC	citizen energy community	NECP	National Energy and Climate Plan
EC	energy community	REC	renewable energy community
EU	European Union	TA	technical assistance
GHG	greenhouse gas	UNFCCC	United Nations Framework Convention on Climate Change
IEMD	Internal Electricity Market Directive		
MS	member state		

Acknowledgements

Corresponding Author & Contact Details

Dr. Lars Holstenkamp

ECOLOG Institute for Social-Ecological Research and Education

Wichernstraße 34, Entrance B

21335 Lüneburg

Germany

lars.holstenkamp@ecolog-institut.de

Persistent Identifier

1   Introduction

In the following, we provide a brief list of some selected public policies for energy communities. The general idea behind collecting such policies is to provide a list for stakeholders, especially public administrations and political decision-makers, but probably also civil-society actors lobbying for energy communities. Within the assessment of energy communities, the different stakeholders can use the list of policies as a basis for their proposal of measures, which are then assessed to make a final selection (see Figure 1). Beyond the assessment, an overview and typology of policy measures and their effects might ease political discussions about support for energy communities.
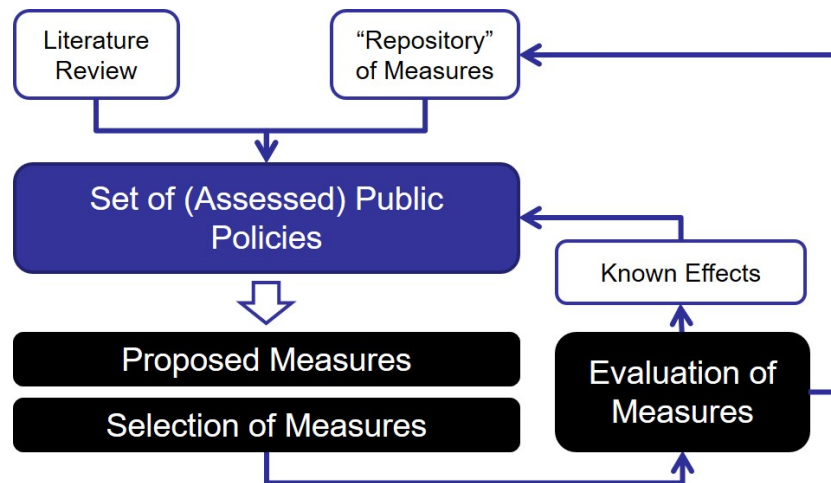

Figure 1:   Collection of Public Policies within the Assessment Cycle

However, it is important to note that policy-makers do not freely choose measures or strategies. Rather, there is usually a limited decision space due to path dependencies (Pierson, 2000). Moreover, (legal) measures taken must fit into the existing institutional environment for them to achieve the hoped for or expected effect (North, 2010; Ostrom, 2005).

In this background paper, we list some selected policies building on a review of the existing academic and policy literature. In the following, we name some exemplary measures (see Section 2). We organise this first brief list around the typology of barriers that we have developed for this project (see Background Paper #2). Moreover, we illustrate how such a collection or "repository" of strategies might look like, i.e. could be structured (see Section 3). The paper closes with some recommendations regarding a potential policy database (Section 4).

2   Some Selected Public Policies (Examples)

2.1   Barriers and Actions Taken to Address Them – An Illustrative Selection

In the following, we provide a list of some public policies which have been implemented in different jurisdictions to support energy communities broadly understood, i.e. not necessarily as defined in RED II or the Internal Electricity Market Directive (IEMD). This list is far from exhaustive. Rather, we give a single example per (type of) barrier. The goal is to illustrate how a collection of public policies could be organised.

Instruments (measures/strategies) in Table 1 are organised aorund the barriers that they address. We recommend this as one approach to collect and characterise public action to support energy communities, as it may help to think about measures and strategies that are not that visible in public policy discourses. There are many examples of preferential treatment in the context of support schemes, which is at the centre of energy policy discourses. There are less-known examples of support e.g. in the form of grants for training courses to build knowledge and expertise among persons involved in energy communities.

Table 1:   Overview of Some Selected Strategies to Overcome Barriers for Energy Communities

Barrier	Type of Measure or Strategy	Examples
Support schemes	Prerential treatment within auctions (Amazo et al., 2020)	Citizen participation bonus in France
Taxes, surcharges & fees	Preferential treatment: exemption from taxes, surcharges and/or fees	

Barrier	Type of Measure or Strategy	Examples
Breakdown of targets	Requirements: mandatory community participation	Danish mandatory participation provision in Renewable Energy Act (Egelund Olsen, 2014)
Risk attitudes	*See public funding: risk capital*	
Grid access rules	General regulation: compulsory connection	e.g. German Renewable Energy Sources Act
Legal market entry barriers	General regulation: lowering of minimum sizes	
Licensing procedures	Preferential treatment: exemptions for energy sharing within ECs	UK private wire (D. Brown et al., 2019)
Definition of RECs and CECs	Clear definition of terms	Irish definition of RECs in its Renewables Support Scheme (RESS)
Availability of legal forms	Lift restrictions for existing legal forms or create new legal form for ECs	"community cooperative" in Italian
Competitive situation	Preferential treatment: exemption from auctions Preferential treatment in public procurement of land	Wind < 18 MW, solar PV < 6 MW in German auctions
Narratives/vision	Energy community strategy	UK Community Energy Strategy (DECC, 2014; Eadson & Foden, 2019)
Equity capital from members	Information: guidelines Preferential treatment: exemption from investor protection rules	
(Mezzanine and) debt finance from banks and other financial institutions	*See public funding*	
Public funding and technical assistance	Financial incentive: grant, loan or guarantee programmes ("funds") (Palacios et al., 2021)	EnRCiT (France) (Sebi & Vernay, 2020) Bürgerenergiefonds.SH [see 3.2]
Knowledge/expertise	Education: training programmes	Seminars offered by German network "Netzwerk Energiewende jetzt e.V.", partly with public funding
Time	Financial incentive: financial support for feasibility studies	
Committed key persons	Information/education & voluntary agreeements: encourage mayors or other local government officials to take action	Indirectly through networks such as Energy Cities or in the context of the Covenant of Mayors
Intermediaries & local support	Financial incentive: financial support of national agency	Austrian Coordination Office for Energy Communities [Österreichische Koordinationsstelle für Energiegemeinschaften]

Abbreviations: CEC: citizen energy community, EC: energy community, REC: renewable energy community

2.2   Description of a Selected Measure

The examples mentioned in Table 1 can be further described along the characteristics listed in Section 2.1. We do this here for a single measure, namely the community energy fund [Bürgerenergiefonds] in the German federal state of Schleswig-Holstein.

The profile in Table 2 illustrates that usually a measure combines different elements, such as: convertible debt/risk capital plus advisory services, which address several barriers. A support programme for energy communities may include several measures, so it might be necessary to allow for a hierarchical order of measures within the database, i.e. distinguish at least two levels – programme level and level of a single measure.

Table 2:   Profile of Selected Measure

Name of Measure	Bürgerenergiefonds [Community Energy Fund] Schleswig-Holstein
Status	In force
Time of Implementation	2018
Geographical scope	Sub-national/regional: Schleswig-Holstein
Technological scope	All (GHG emission reducton)
Type of instrument	Advisory services (TA) Financing (debt, convertible to grant)
Barrier(s) addressed	Risk attitudes, Competitive situation, Equity capital from members, Debt finance from banks, Public funding & TA, Knowledge/expertise
Type of financing (if applicable)	Preferential loan (grace period: 2 years, interest rate: 2 %-points above base rate and annual increase of 0.5 %-points, amount: € 10-200T), non-refundable in case of failure Financing of preparatory measures for energy community projects (early phase)
Source of funding (if applicable)	Special fund (Bürgerenergie.SH)
Implementing agency	IB.SH/Energieagentur (state energy agency within state public bank)
Evaluations	None known
More information	https://www.ib-sh.de/produkt/buergerenergiefonds/ (German only) (FA Wind, 2021)

Abbreviations: GHG: greenhouse gas; TA: technical assistance

3   Some Thoughts on a Structure for a Policy Database

3.1   Classification of Public Policies

In this project, we use the term "public policies" as a catch-all phrase for any action taken by public agents such as national or sub-national governments or public agencies, which addresses energy communities. Alternatively and synonymously, we use the terms public strategies, measures or instruments. A more thorough distinction may be needed when building the database and deciding which actions to include or exclude.

These public actions can be classified in various ways:

- Mode of governance: self-governing, regulation, education & enabling, financing & provision (Palermo et al., 2020); command-and-control vs. market-based (charge systems, tradable permits, market friction reductions, government subsidy reductions) (Stavins, 2003); command & control, price instruments, information instruments (Markandya et al., 2015); financial/price-type, market/quotas, regulatory, information (Sterner & Robinson, 2018)
- Level of government coercion (Taylor et al., 1999): suasion, direct expenditure, taxation, regulation, public ownership
- Financial mechanism [for financial/fiscal]: grant, (preferential) loan, guarantee, remuneration [different energy policy instruments: feed-in tariff/premium, tender, quota/certificates, net metering], tax reduction
- Sector and technology: electricity, heating & cooling, transportation; wind, solar PV, biomass, etc.
- State of implementation (IEA, 2022): planned, draft, in force, under review, superseded, ended, unknown
- Geographic scope or jurisdiction: international, European Union (EU), national, sub-national/regional (e.g. state or provincial), local (e.g. city or municipal)
- Barrier addressed (M. Brown, 2015)

Several typologies of instruments are available, for instance, for databases and analyses of energy efficiency policies (Bertoldi, 2022; Palermo et al., 2020). Best et al. (2022) resort to the classification of the United Nations Framework Convention on Climate Change (UNFCCC), which distinguishes between economic, fiscal, voluntary agreements, regulatory, information, education, research and other instruments. IRENA et al. (2018) provide a classification of renewable energy policies in a general context, in the access context and to maximise socio-economic development from renewable energy deployment. In the latter context, they differentiate between requirements, preferential treatment and financial incentives.

We do not recommend a specific typology, but suggest to choose among those well-established. IRENA et al.'s distinction might fit best to action directed at supporting energy communities. Depending on the scope of the database, however, some other actions may also be considered, e.g. voluntary agreements, standards and labels as in the case of the German federal state of Thuringia (ThEGA, 2022)[1] or the district of Steinfurt (Kreis Steinfurt &

---

[1]   In Thuringia, the energy agency has developed guidelines for more participative and transparent wind energy development. Wind developers who comply with these guidelines can get a label "Partner for Fair Wind Energy."

energieland2050 e.V., 2019)[2]. Moreover, information and training programmes are important measures to increase capacities of energy communities. A preliminary typology could include requirements, preferential treatments, financial incentives, voluntary agreements (standards, labels), information and education, but should be checked regarding its usefulness against first collections of concrete measures and strategies. Besides, a policy database should use different dimensions to describe those public actions. Types along those dimensions will need further elaboration, which would go beyond the scope of this background paper. Some thoughts on selected dimensions will be provided in Section 3. Full lists of types for all dimensions must be developed when setting up the policy database.

3.2   Collection of Public Policies

This background paper is meant as a first conceptual step to set up an "Energy Communities Policy & Instruments Database". More theoretical and conceptual work is probably needed, especially to spell out characteristics of public actions – as outline in the previous section – and to define the technical structure of such a database. Overall, we propose a four-step approach for building and updating such a database:

    a)   Conceptual work to start the database
    b)   Regular surveys among relevant stakeholders
    c)   Internet platform for crowdsourcing of information
    d)   Provide a "dump" in a repository for the use by researchers (and practitioners)

Each policy and instrument needs to be described in a structured way. Predefining the structure of such a database is important since later changes are usually difficult to implement. For this, the initial owner of the database can build on this background paper and experience made with various databases in the energy sector, some of which are referenced in the previous section. It would certainly help to already include measures such as those mentioned in Table 1. A good starting point might be the National Energy and Climate Plans (NECPs) that every EU Member State (MS) has developed and submitted to the EU Commission.

Experience with other databases has shown that even if in general a crowdsourcing approach is used, for the database to grow and become useful a regular and structured updating mechanism will be needed. We propose a regular, e.g. annual, short survey among REScoop member associations and researchers – potentially also other stakeholder groups. Once the structure has been set up and the existing policies have been collected, the updates do not cause too much work for the respondents and the interviewers because usually not too much happens within a year.

The database will be most valuable if it includes information not only on national policies and instruments, but also sub-national and local ones. NECPs tend to include not even all national measures. Moreover, it requires quite specific and detailed knowledge of local and regional contexts. Hence, a crowdsourcing approach seems appropriate to collect missing information and regularly update the database. An internet platform could be used not only to display the information collected, but also to collect further information. However, input through surveys and internet platform will need "quality" checks to solve potential contradictions and misunderstandings of characterisations and to search for missing data. Hence, the owner(s) of the database need(s) to implement some kind of peer-review mechanism. In principle, this can be organised around the crowd of experts as in the cases of Wikipedia or the REN21 Global Status Report. Other more hierarchical peer-review mechanisms might be better in that they guarantee a certain quantity and quality of input, but need more resources and therefore (internal or external) funding.

Besides practitioners who want to get an overview of measures and their effects in different countries, the database will be most likely extremely valuable for researchers. To make it usable in a research context, the owner(s) of the database need(s) to provide a "dump" of the database to be downloadable from the websites or a repository such as Zenodo. As the database is supposed to become a "living" tool that is constantly updated and changed, this would also allow for reproducing research as long as older database versions are archived. Moreover, researchers will most probably correct some entries and add on the information provided in the original dataset. They could be urged to make this improved databases publicly available again by defining copyrights accordingly.

Lastly, the platform needs a place where as many people as possible look for such a resource. We propose to link it to the European Energy Communities Repository as this is supposed to become a "one-stop shop" for information around this topic. Another possibiltiy to be explored are the REScoop websites. Separate websites which are advertised on as many other organisational websites as possible would be a third option.

---

[2]   The District of Steinfurt and some municipalities, utility companies and the farmers' association have developed guidelines for community wind farms. These guidelines function as a reference point for wind energy developments in the region.

The construction of a policy database needs financial and/or personal resources that could be provided by the European Commission in the context of the European Energy Communities Repository, by additional external funding and/or internal resources.

4   Recommendations

As a summary, we would like to formulate the following recommendations:

1) Measures for energy communities should be collected in a well programmed and structured policy database, which contains information on the type of action, the geographic scope and, where available, on evaluations that have been conducted to assess the effectiveness, efficiency and legitimacy of those policies. The latter can be taken from the literature and, hopefully, regular national assessments of energy communities.

2) The development of the database should be commissioned by the European Commission and integrated into the Energy Communities Repository. Alternatively, REScoop (or any other stakeholder) could use own/community resources or external funding to build such a database.

3) Crowdsourcing seems to be the most promising strategy to keep the database up to date. However, it should be supported by regular (short) surveys among national and/or sub-national associations and researchers. Moreover, a team of practitioners and/or researchers should regularly check and update the database. Providing a downloadable version of the database on a repository such as Zenodo would enable other researchers to build on this collection, improve the quality and quantity and update the available information.

References

Amazo, A., Blücher, F. von, Lotz, B., & Jakob, M. (2020). *Auctions and renewable energy communities* (Deliverable 4.2; AURES II). Navigant. http://aures2project.eu/wp-content/uploads/2020/02/AURES_II_D4_2_energy_communities.pdf

Bertoldi, P. (2022). Policies for energy conservation and sufficiency: Review of existing policies and recommendations for new and effective policies in OECD countries. *Energy and Buildings*, *264*, 112075. https://doi.org/10.1016/j.enbuild.2022.112075

Best, B., Thema, J., Zell-Ziegler, C., Wiese, F., Barth, J., Breidenbach, S., Nascimento, L., & Wilke, H. (2022). Building a database for energy sufficiency policies. *F1000Research*, *11*, 229. https://doi.org/10.12688/f1000research.108822.2

Brown, D., Hall, S., & Davis, M. E. (2019). Prosumers in the post subsidy era: An exploration of new prosumer business models in the UK. *Energy Policy*, *135*, 110984. https://doi.org/10.1016/j.enpol.2019.110984

Brown, M. (2015). Innovative energy-efficiency policies: An international review. *WIREs Energy and Environment*, *4*(1), 1–25. https://doi.org/10.1002/wene.125

DECC. (2014). *Community Energy Strategy: Full Report*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/275163/20140126Community_Energy_Strategy.pdf

Eadson, W., & Foden, M. (2019). State, community and the negotiated construction of energy markets: Community energy policy in England. *Geoforum*, *100*, 21–31. https://doi.org/10.1016/j.geoforum.2019.02.006

Egelund Olsen, B. (2014). Regulatory financial obligations for promoting local acceptance of renewable energy projects. In M. Peeters & T. Schomerus (Eds.), *Renewable Energy Law in the EU* (pp. 189–209). Edward Elgar Publishing. https://doi.org/10.4337/9781783473199.00019

FA Wind. (2021). *Bürgerenergiefonds—Bürgerenergie für mehr Akzeptanz vor Ort*. https://www.fachagentur-windenergie.de/fileadmin/files/Veroeffentlichungen/Handlungsempfehlungen/FA_Wind_Handlungsempfehlung_6_Buergerenergiefonds_09-2021.pdf

IEA. (2022). *Policies database – Data & Statistics*. https://www.iea.org/policies

IRENA, OECD/IEA, & REN21. (2018). *Renewable Energy Policies in a Time of Transition*. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Apr/IRENA_IEA_REN21_Policies_2018.

Kreis Steinfurt, & energieland2050 e.V. (2019). *BürgerwindparkLEITLINIEN*. https://www.kreis-steinfurt.de/kv_steinfurt/Kreisverwaltung/%C3%84mter/Amt%20f%C3%BCr%20Klimaschutz%20und%20Nachhaltigkeit/energieland2050%20e.%20V./Themen%20und%20Projekte/Masterplan%20Wind/B%C3%BCrgerwindpark%20Leitlinien%20Kreis%20Steinfurt_ANSICHT.pdf

Markandya, A., Labandeira, X., & Ramos, A. (2015). Policy Instruments to Foster Energy Efficiency. In A. Ansuategi, J. Delgado, & I. Galarraga (Eds.), *Green Energy and Efficiency* (pp. 93–110). Springer International Publishing. https://doi.org/10.1007/978-3-319-03632-8_4

North, D. C. (2010). *Understanding the process of economic change*. Princeton University Press.

Ostrom, E. (2005). *Understanding institutional diversity*. Princeton University Press.

Palacios, S., Bauknecht, D., & Kahles, M. (2021). *Förderprogramm für Bürgerenergiegesellschaften in der Vorentwicklungsphase* (No. 65/2021; Climate Change). Umweltbundesamt. https://www.umweltbundesamt.de/sites/default/files/medien/479/publikationen/cc_65-2021_foerderprogramm_fuer_buergerenergiegesellschaften_in_der_vorentwicklungsphase.pdf

Palermo, V., Bertoldi, P., Apostolou, M., Kona, A., & Rivas, S. (2020). Assessment of climate change mitigation policies in 315 cities in the Covenant of Mayors initiative. *Sustainable Cities and Society*, *60*, 102258. https://doi.org/10.1016/j.scs.2020.102258

Pierson, P. (2000). Increasing Returns, Path Dependence, and the Study of Politics. *American Political Science Review*, *94*(2), 251–267. https://doi.org/10.2307/2586011

Sebi, C., & Vernay, A.-L. (2020). Community renewable energy in France: The state of development and the way forward. *Energy Policy*, *147*, 111874.

Stavins, R. N. (2003). Experience with Market-Based Environmental Policy Instruments. In K.-G. Mäler & J. R. Vincent (Eds.), *Handbook of Environmental Economics* (Vol. 1, pp. 355–435). Elsevier. https://doi.org/10.1016/S1574-0099(03)01014-3

Sterner, T., & Robinson, E. J. Z. (2018). Selection and design of environmental policy instruments. In P. Dasgupta, S. K. Pattanayak, & V. K. Smith (Eds.), *Handbook of Environmental Economics* (Vol. 4, pp. 231–284). Elsevier. https://doi.org/10.1016/bs.hesenv.2018.08.002

Taylor, D. W., Baetz, M. C., & Warrack, A. A. (1999). *Business and government in Canada: Partners for the future*. Prentice Hall Canada.

ThEGA. (2022). *Faire Windenergie Thüringen—Ein Service der ThEGA für Thüringer Unternehmen*. https://www.thega.de/themen/erneuerbare-energien/servicestelle-windenergie/service-fuer-unternehmen/