PROSUMERISM AND ENERGY COMMUNITIES

Expanding concepts in a global perspective

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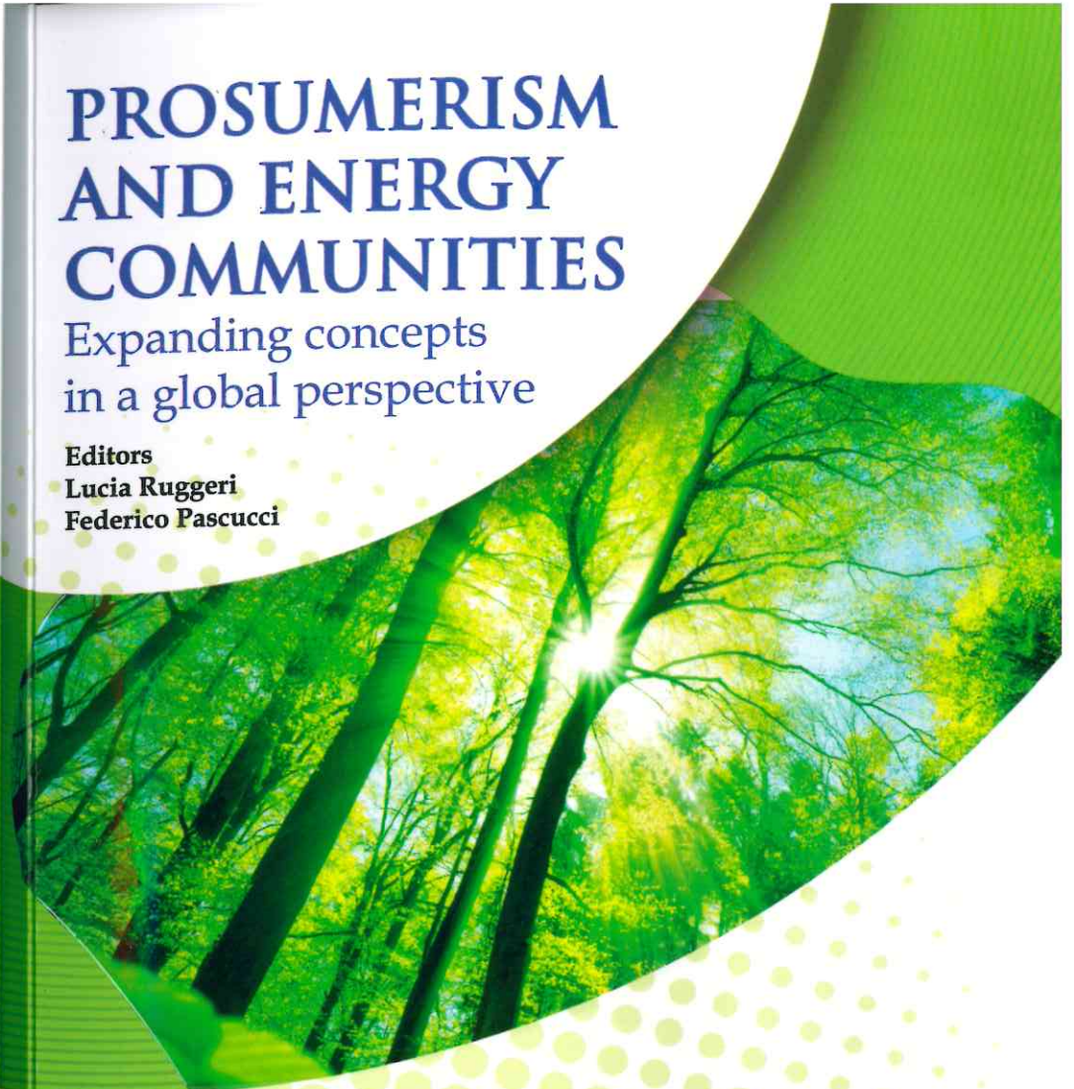
Editors
Lucia Ruggeri
Federico Pascucci



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Eds

Lucia Ruggeri and Federico Pascucci

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Regardless of the results of the criminal proceedings, it will be particularly interesting to see whether the favour established by the law for persons in a state of vulnerability can be the basis for the establishment of a general principle of energy solidarity.

5 Conclusion: Towards the Justiciability of Energy Solidarity

The judgement in Catalonia concerning the harassment of non-compliant customers in vulnerable situations by energy supply companies attests to the plaintiffs' efforts to assert the inviolability of a principle of energy solidarity.

Both the national legal framework (in particular: Law 24/2013) and that of the Autonomous Community of Catalonia (Law 24/2015) offer solid ground for a full protection of this principle.

It should also be noted that the recognition of a principle of energy solidarity raises the question of its justiciability.

Justiciability of energy solidarity is increasingly taken into account by the Court of Justice of the European Union. Significant in this respect the Opinion delivered on 18 March 2021 by the Advocate General Campos Sánchez-Bordona in Case C-848/19 P *Germany v Poland*.[44] The Advocate General agreed with the General Court's judgment in Case T-883/16 *Poland v Commission*,[45] which held that energy solidarity under Art 194, para 1 of the TFEU is a justiciable principle of EU primary law. The Advocate General specifies that the principle of solidarity must be considered in a broad way, being 'linked to relations both horizontal (between Member States, between institutions, between peoples or generations and between Member States and third countries) and vertical (between the European Union and its Member States).'[46] Of course the situation described above, with regard to Spain, relates to the horizontal dimension (institutions and peoples).

On the question of the justiciability of the principle of energy solidarity, the Advocate General considers the aspect of sovereignty of the Member States in order to energy policies and points out that "in the light of the establishment of an EU energy policy based on the principle of solidarity (...) the justiciability of that principle is as indisputable as that of the safeguards for State sovereignty.'[47] Thus, to some extent, the Advocate General in Case *Germany v Poland* points out to both the legislator and the judicial authorities of each Member State the need to fully apply the principle of energy solidarity and to make it effective not only through legislative measures but also through consistent decisions in the courts.

[44] Opinion of Advocate General Campos Sánchez-Bordona in Case C-848/19 P, *Germany v Poland*, ECLI:EU:C:2021:218.

[45] T-883/16, *Poland v Commission*, ECLI:EU:T:2019:567.

[46] Opinion of Advocate General Campos Sánchez-Bordona, para 60.

[47] ibid para 79.

Energy Communities as a New Tool of Energy Self-production and Sustainable Development

Manuela Giobbi

Abstract: Energy communities play a key role in the energy transition process, which aims at combining technological innovation and social benefit, and at mitigating the issues related to climate change. The new energy self-production models based on the use of renewable sources allow greater production variability and a variety of players to participate in the market. Moreover, they contribute to lessening the economic vulnerability of citizens.

Keywords: Energy Communities, Vulnerable Customers, Sustainable Development

1 Introduction

The decentralised and flexible generation of energy underlies the innovation of the energy market in terms of access, distribution, and economic benefit. Indeed, the European Union is increasingly oriented towards ensuring that all citizens have the right to produce, use, store or exchange the energy generated individually or collectively, to improve energy efficiency and actively participate in the market.

Achieving the binding objectives set by the European Union for the decarbonisation of the energy system, as well as an equitable use of energy for the mitigation of the economic vulnerability of citizens, implies developing energy generation models that are increasingly based on the use of renewable sources. In this sense, green energy plays a role of fundamental importance for the implementation of an energy transition that combines technological innovation, social benefits[1] and and the issues related to climate change,[2] which now constitute a global emergency.[3] What therefore appears to be necessary is the creation of an energy sector characterized by the presence of multiple actors and production variability.[4]

[1] In this regard see 10ª Commissione, Industria, Commercio, Turismo, 'Green Energy. Il sostegno delle attività produttive mediante generazione, accumulo e autoconsumo di energia elettrica' available at www.senato.it (last visited 10 July 2021). A. Caramizaru and A. Uihlein, 'Energy communities: an overview of energy and social innovation' (7-34) available at www..ec.europa.eu.jrc/en/publication/ eur-scientific-and-technical-research-reports/energy-communities-overview-energy-and-social-innovation (last visited 15 July 2021).

[2] Recital 2 of Directive 2018/2001 also points out that the promotion of forms of energy from renewable sources is one of the objectives of the Union's energy policy. The use of renewable sources forms an important part of the package of measures aimed at reducing greenhouse gas emissions and complying with the Union's commitments on climate change following the Conference of the Parties to the United Nations Framework Convention on climate change, so-called 'Paris Agreement'.

[3] United Nation, 'The Report of the World Commission on Environment and Development: Our Common Future', so-called Brundtland Report, available at https://www.are.admin.ch/are/it/home/media-e-pubblicazioni/pubblicazioni/ sviluppo-sostenibile/brundtland-report.html (last visited on 28 July 2021), considers sustainable such development that satisfies the needs of present generations without compromising the possibility for future generations to satisfy theirs. Regarding sustainable development see M. Pennasilico, 'Sviluppo sostenibile, legalità costituzionale e analisi "ecologica" del contratto' *Persona e Mercato*, 37, 37-50 (2015).

[4] In this regard see Commission Staff Working Document, 'Best practices on Renewable Energy Self-consumption' available at https://eur-lex.europa.eu (last visited 20 July 2021). On this subject see, M.A.

Recent European directives have therefore promoted energy production models focused on self-generation, which are aimed at ensuring that the community has facilitated and shared access to energy, but also at encouraging 'energy citizens' to participate in energy communities and to become prosumers.[5]

2 Energy Communities in the European Union

With Directives 2018/2001 and 2019/944, the European Union introduced the possibility of establishing renewable energy communities and citizen energy communities. Renewable energy communities are defined by in Art 2, para 2, no 16 of Directive 2018/2001, as a legal entity which, in accordance with the internal law of the Member States, is autonomous and controlled by the participants who can be natural persons, small and medium-sized enterprises, local authorities or municipal administrations. Instead, it is up to the Member States, in accordance with the provisions of Art 22, to ensure the right for end consumers to actively participate in energy communities while maintaining their rights and duties, without being subject to unjustified or discriminatory conditions or procedures. In this way, European legislation specifically indicates that internal regulations cannot introduce limitations which are designed to hinder the participation of citizens in energy communities. Citizen energy communities, on the other hand, are defined by Art 2, para 1, letter a of Directive 2019/944, but have intrinsic characteristics that are completely similar to renewable energy communities,[6] even though they seem to be the expression of a broader operational scope.[7]

Energy communities constitute innovative energy generation mechanisms that are part of a so-called process of productive democratization and are functional to the development of economic, social, and environmental benefits in the territorial context in which they operate.[8] Regardless of the type, both communities do not seem to be precluded from carrying out ancillary activities such as services relating to energy efficiency or e-mobility.

Heldeweg and S. Saintier, 'Renewable energy communities as "socio-legal institution": a normative frame for energy decentralization?' 119 *Renewable and Sustainable Energy Reviews*, 1, 1-4, (2020).

[5] Resolution of the European Parliament 2015/2323(INI), P8TA(2016)0234, 'New deal for energy consumers' available at www.europarl.europa.eu (last visited on 10 July 2021), points out that prosumerism should be implemented through a decentralised and inclusive participatory process, which empowers actors to hire or share the production, distribution and storage of renewable energy, while at the same time protecting renewable consumers. In this regard see Communication from the Commission to the European Parliament, the Council, the European economic and social Committee and the Committee of the Regions. Delivering a New Deal for Energy Consumers, Brussels, 15 July 2015 COM(2015) 339 final available at https://eur-lex.europa.eu (last visited 11 July 2021).

[6] In this regard see CEER, 'Fostering energy market, empowering consumers' available at www.ceer.eu (last visited 20 July 2021).

[7] In this regard see Art 16, Directive 2019/944/UE.

[8] In this regard see M.N. Cooper et al, *Equity and energy: rising energy prices and the living standards of lower income Americans*, (New York: Routledge, 2019), 42-45; K.E.H. Jenkins, *Energy Justice, Energy Democracy, and Sustainability: Normative Approaches to the Consumer Ownership of Renewables* (Berlin: Springer International Publishing, 2019), 79-97; R.P. Thombs, 'When democracy meets energy transition: a typology of social power and energy system scale' 52 *Energy Research & Social Science*, 159, 159-162 (2019); K. Szulecki and I. Overland, 'Energy democracy as a process, an outcome and a goal: a new conceptual review' 69 *Energy research & Social Science*, 2, 2-6, (2020).

These associative systems of energy production are often attributed an automatic correspondence between the use of renewable sources and the redistributive function of energy as the main result of their operation. Indeed, as also highlighted by Directive 2019/944 in Recital 43, energy communities constitute an effective and economically efficient way of responding to the needs and expectations of citizens with regard to the development of energy production from renewable sources and the implementation of a more distributed and collaborative energy system.[9]

We are talking about an innovative system of sharing production tools in which all citizens have the opportunity to become prosumers.[10] In fact, it can be considered a best solution that allows all consumers who want to directly participate in the production and consumption of energy to directly access the energy market.

The close correlation with the territory and the plurality of services these energy communities have the potential to provide make them highly integral, precisely because they contribute to reducing consumption and costs, and contrast energy poverty. In this way, energy communities perform a function that expresses a high level of sociability and provide all participants and in particular economically vulnerable subjects with the services necessary for the satisfaction of their needs.

Energy communities are therefore one of the most efficient ways to respond to the lack of services, the reduction of costs and consumption, as well as the development of local areas where the activity is implemented. Their organizational structure is that of collective and autonomous entities that supply energy at low prices, rather than generating financial profits as in the case of traditional energy suppliers. These forms of cooperation in the production and consumption of energy are expected to be the most responsive to the interests of consumers and businesses and are increasingly oriented towards overcoming individual operations in favour of collective ones.[11]

Considering that the introduction and internal regulation of energy communities depends on the individual Member States, they have not developed uniformly. The greatest diffusion is found in the states of Northern Europe, or even in those outside Europe, where they are not a recent phenomenon, but have represented 'virtuous' models of energy management for some time.[12] For example, an energy cooperative

[9] Energy communities already introduced in the so-called Clean Energy Package and subsequently implemented with Directive (EU) 2018/2001 of the European Parliament and the Council of 11 December 2018 on the promotion of the use of energy from renewable sources [2018] OJ L328/82 and Directive (EU) 2019/944 of the European Parliament and of the Council of the 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU [2019] OJ L158/125

[10] In this regard see L. Ruggeri ed, *Needs and barriers of prosumerism in the energy transition era* (Madrid: Dykinson, 2021) available at www.dykinson.com (last visited 21 July 2021).

[11] In this regard see E. Cusa, 'The EU law on energy communities and its transposition into Italian law' *Rivista trimestrale di diritto e economia*, 287, 318-327 (2020).

[12] For example, the energy communities in Belgium, Holland, Denmark, and Finland have been operating for many years. In Denmark, energy communities account for 80% of energy production from renewable sources. In Germany, they developed in the nineties and currently there are about 1800, while in 2018 the United Kingdom was one of the main producers of energy from renewable sources. Regarding energy communities see 'Transposition guidance', available at www.rescoop.eu (last visited 20 July 2021); D. Buschle and J. Navickaite eds, 'The energy community: legal framework', available at www.energy-community.org/dam/jcr:18069918-5f46/EnC_LF3_2013.pdf (last visited 21 July 2021); B. Schmid et al, 'Energy cooperatives and municipalities in local energy governance arrangements in Switzerland and Germany' 29 *Journal of Environment & Development*,

was created in Germany in 2005 which made a village completely self-sufficient in terms of energy. Energy communities have also been created in the Netherlands, making it possible to connect all the households in a neighbourhood to a smart platform that is able to manage the exchange of local energy and adequately supply all citizens. Another virtuous case is that of Slovenia, where an energy community consisting of a multiplicity of production systems from renewable sources is intended to supply energy to households, to create e-mobility charging services, etc. In this case, the network set up by the community makes it possible to optimize the energy needs of prosumers.[13] These are diversified experiences that are essentially attributable to cooperative models that exchange energy at low costs, create relevant connections between citizens, businesses, and institutions, and offer greater choice and significant social benefits.

3 Energy Communities in the Italian System as 'innovative' Models of Energy Self-production

A few projects related to energy communities were carried out in Italy following the implementation of Art 22 of Directive 2018/2001. Art 42-*bis* of Law Decree 162/19, so-called *Milleproroghe*,[14] defines energy communities by recalling the notions dictated by European Directive 2018/2001, but does not provide for a specific constitutive model, thus leaving any choice in this regard to the autonomy of the parties. In fact, it appears to be an 'experimental' legislation, since Art 42-*bis*, para 1, specifies that pending the implementation of directive 2018/2001, the creation of renewable energy communities is allowed. Art 42-*bis* also points out that the monitoring of the establishment of energy communities is functional to the acquisition of useful elements for the implementation of the provisions of Directives 2018/2001 and 2019/944. Therefore, there is no specific regulatory framework, but just a provision that could undergo changes upon implementation of the European Directives on the energy market.

For example, in implementing Directive 2018/2001, even Portugal and France have defined renewable energy communities in a way that is very similar to the one dictated by European legislation without establishing a coordinated and specific discipline.[15]

123, 124-141 (2020); B. Schmid, T. Meister, B. Klagge and I. Seidi, 'How municipalities support energy cooperatives: survey results from Germany and Switzerland' 10 *Energy, Sustainability and Society*, 10, 12-18 (2020); D. Magnusson and J. Palm, 'Come together, the development of Swedish energy communities' 11 *Sustainability*, 1, 2-19 (2019).

[13] In Germany, the Junde energy cooperative, established in 2005, is the first village where renewable energy is produced with the participation of consumers. In the Schoonschip residential district of Amsterdam, Netherlands, every home has renewable energy production systems controlled by smart platforms. In Slovenia, the Luče community serves a rural network with multiple renewable energy production systems; see 'H2020 Project. Integrating community power in energy islands – Compile 2020' available at https://www.compile-project.eu/ (last visited 31 July 2021. For in-depth information see A.L. Pisello et al, 'Un nuovo modello per il sistema energetico nazionale ed europeo: le comunità energetiche. A new model for the National and European energy system: energy communities' available at www.aicarjournal.org (last visited 15 July 2021).

[14] See Art 42-*bis*, Decreto legge, 30 December 2019, no 162, converted Legge 28 February 2020, no 8, *Gazzetta Ufficiale* 29 February 2020, no 51, no 10/L.

[15] Directive 2018/2001 was implemented in Portugal with Decree Law no 162/2019 of 25 October 2019, in the Official Gazette of Portugal, and in France with Law no 2019-1147 of 8 November 2019 concerning energy and

In any case, the Italian legal system, as well as the provisions of the European Directive, provides for maximum flexibility with regard to the organizational structure of energy communities, as it is compatible with internal regulations.

In this regard, the cooperative form seems to envisage an organizational context in which private individuals have the possibility to satisfy their own needs, as well as general interests. Basically, the need is to overcome traditional production models, ensuring that prosumerism fits properly within a process of development of local areas and considers consumer vulnerability, energy poverty and environmental sustainability.

An energy community established in Italy, in the municipality of Pinerolo, was included in the 2021 G20 Report since it is considered as one of the 'world best practices', alongside the energy communities created in Jakarta for the smart management of traffic and the parking system, and that of Vancouver, which made it possible to equip all buildings with columns for charging electric vehicles.

The Italian energy community of Pinerolo was referred to as a structure to be replicated for the creation of 'smart cities' within residential buildings so that all citizens or residents can actually be actors in the energy transition. This is therefore an important social inclusion project[16] and in particular an energy community model that promotes the sustainable use of natural resources, reduces harmful emissions and helps regenerate the ecosystem.

4 Energy Communities, Environmental Sustainability, and Economic Vulnerability. Conclusive Remarks

In order for a 'virtuous management' of renewable energy production to be achieved, the evolution of society must be taken into account and energy communities should constitute an optimal solution to the energy supply that transversely affects every aspect of it. Energy, in fact, is the subject of a plurality of interests referable to a community of people.

The new collaborative models of energy generation envisaged by the European legislation and partly implemented by internal law base their operations on simplified systems for sharing energy and services that modify the traditional negotiation operations in favour of sharing economy systems or peer to peer relationships.[17]

More generally, energy communities can be regarded as forms of social aggregation that favour collaborative operations and the shared use of energy as an alternative to purchasing. In particular, they also offer vulnerable or energy poor

climate, in the Official Gazette of the French Republic. In this regard see H. Argavio, 'The role of local citizen energy communities in the road to carbon-neutral power systems: outcomes from a case study in Portugal' 4 *Smart Cities*, 840, 842-863 (2021); M.M. Sokolowsky, 'Renewable energy communities in the law of the EU, Australia, and New Zealand' 28 *European Energy and Environmental Law Review*, 34, 35-46 (2019).

[16] See International Energy Agency, 'Empowering Cities for a Net Zero Future: unlocking resilient, smart, sustainable urban energy systems' available at www.iea.org/t&C/ (last visited 15 July 2021).

[17] In this regard see G. Smorto, 'I contratti della sharing economy' *Foro italiano*, 221, 222-223 (2015).

consumers the opportunity to access energy, thus becoming a tool for alleviating economic hardship.[18]

The new associative models of decentralised and collaborative energy production take on a social and functional relevance to the balance between the needs of the person[19] and environmental sustainability.[20] In fact, energy communities operating in specific areas of the local territory are a means of overcoming the difficulties of subjects who are unable to access an essential service, such as energy, for satisfying needs that are essential to ensure that each individual fully realizes himself or herself.[21]

The innovative methods of energy generation based on the rational use of renewable sources become functional to the achievement of an equitable use of energy and the satisfaction of the basic needs of all individuals. Through energy communities, access to energy is no longer just an individual right separated from the social context, but above all a possibility to ensure that the most vulnerable individuals enjoy goods and services that can be useful for the satisfaction of their needs.[22]

Access to energy thus also takes on a collective benefit connotation and tends to conform patrimonial situations to the values of the person and the duties of solidarity.

The advantages achieved by energy communities are essentially not limited to the provision of energy services,[23] but become specifically relevant in the balance between the satisfaction of collective interests of in terms of access, and energy use and environmental sustainability.

[18] In this regard see L. Ruggeri and M. Giobbi, 'Vulnerabilità economica tra diritto emergenziale e contrattuale. Economic vulnerability between emergency and contract law' *Actualidad Jurídica Iberoamericana*, 340, 341-351 (2020).

[19] In this regard see P. Perlingieri, 'Persona, ambiente e sviluppo', in M. Pennasilico ed, *Contratto e ambiente. L'analisi 'ecologica' del diritto contrattuale* (Napoli: Edizioni Scientifiche italiane, 2016), 326-330.

[20] See W.M. Adams, 'The future of Sustainability: re-thinking environment and development in the twenty-first century, 2006, Report of the world 29-31 January 2006' available at http://cmsdata.iucn.org/downloads/iucn_future_of_ sustanability.pdf (last visited 28 July 2021).

[21] See P. Perlingieri, *La personalità umana nell'ordinamento giuridico* (Napoli: Edizioni Scientifiche Italiane, 1972), 164-166.

[22] In this regard see G. Carapezza Figlia, 'I rapporti di utenza dei servizi pubblici tra autonomia negoziale e sussidiarietà orizzontale', in E. Caterini et al, *Scritti in onore di Vito Rizzo. Persona, mercato, contratto e rapporti di consumo* (Napoli: Edizioni Scientifiche Italiane, 2017), 441-449.

[23] In this regard see Recital 43 of Directive 2019/944/EU.

Emerging Prosumers under Different Contexts of Partnerships in Japan

Kozue Kashiwazaki, Norihisa Shima and Hiroyoshi Sano

Abstract: This chapter introduces three emerging cases of prosumer actions from different contexts and explores the partnerships behind these actions. The first case, Daimaruyu (OMY), is Japan's oldest business center located around Tokyo Station of approximately 120 ha. Their prosumer actions initially launched by a private company are now supported by public private partnership since the redevelopment started in the 1980s, and the district can be the best practice leading to an economical and social as well as environmental prosumer. The second case is Hamamatsu City where has been implementing the renewable energy management such as solar and biomass power generation at the city level by the initiatives of local government. Utilize abundant local natural resources for renewable energy, the city has increased the ratio of self-sufficiency of renewable energy especially by solar power generation in the last decade. The last case is Itoshiro village where is a mountainous area with a population of only 250. Almost all residents have invested to start a small hydroelectric power generation project. The project contributes to the creation of various new businesses. Though three cases can be emerging cases, triggered actions and partnerships are highlighted as potentially critical success factors toward prosumer actions.

Keywords: Partnership, District Heating and Cooling (DHC), Mega Solar Plant, Micro Hydro Power Plant, Japan

1 Introduction

Energy production and consumption has been a critical issue in Japan. Due to the geographical characteristics, Japan has been rely on the imported fossil fuel from Middle East and Southern Asian Countries for energy production. The energy self-sufficiency rate is approximately 11.8% in 2018, though gradually improving since 2012. The dependance rate in 2018 was 85.5% gradually decreasing particularly after Great East Japan earthquake and Fukushima Daiichi nuclear disaster in 2011. In order to achieve the goal of carbon neutral in 2050 which Japan joined in 2020, strategic energy plans just presented with basic principle of 'S+3E' indicating Safety, Energy security, Economic efficiency, and Environment.[1]

In order to apply the concept of prosumer for Japan, this chapter focuses on the partnership by not only government but also several stakeholders such as private sectors and local residents through three advanced case studies, Daimaruyu (OYM), Hamamatsu and Itoshiro (Fig.1). Through the cases in totally different socio-economic background, it is aimed to explore the required process to create the partnership of prosumer actions.

[1] Agency for Natural Resources and Energy, *Cabinet Decision Made on the FY 2019 Annual Report on Energy (Japan's Energy White Paper 2020)* (Ministry of Economy, Trade and Industry, 2020).