

Human progress has always gone hand in hand with our energy development. However, it is nowadays unequivocally considered that our energy development and particularly our energy consumption is gradually leading more and more to the phenomenon of climate change. Looking at various studies, we can see that in the last 150 years, as our energy consumption has gradually been increasing, our global surface temperature over land and water has also risen by about 1.5 degrees Celsius.

In the last couple of years, these developments have rung several alarm bells internationally, so that as a result, various treaties, agreements, etc. have been concluded on a global stage.

One of the best known and most extensive ones is probably the Paris Agreement. Following its magnitude and ambitious realization, the European Union then concluded the Clean Energy Package in 2019, in order to help push the implementation at the Union level.

## **The core content of the Clean Energy Package**

Already in 2016, the European Commission presented the “Clean Energy for all Europeans Package” for the first time. It consists of four regulations and four directives, each of which were adopted by the European Parliament in the time frame from the end of 2018 to early summer of 2019. The package aims to make a significant contribution to stopping climate change, but above all, to usher in a new era of energy policy and to focus on individual citizens, by giving them a great deal of flexibility but also an impetus to take action themselves.

Among other things, the Clean Energy Package should simplify the process of switching electricity suppliers (in up to 24 hours). In addition, dynamic pricing and intelligent electricity meters will help to save costs and energy. However, in the event of impending energy poverty – quasi-droughts – the member state should then have the authority and it should also be able to regulate market prices at short notice and actively support and protect affected households. Furthermore, a support cap for environmentally harmful power plants in Europe is to apply from 2025. This measure will include all power plants that use fossil fuels.

The member states are also instructed to assess the risk of capacity bottlenecks, draw up national plans and to cooperate and support each other on a regional level.

Thus, ultimately, by 2030, in addition to the goal of gaining 32% of energy demand from

renewable sources, greenhouse gas emissions should be reduced by 40%.

At the same time, energy efficiency should increase by at least 32.5% and at least 15% of the networks should be interconnected on a Union-wide level.

However, in achieving these ambitious goals, the European Clean Energy Package envisages that one of the key segments should be the new format of so-called energy communities - which have been defined in the Renewable Energy Directive 2018/2001 and are to be implemented nationally in the same way as the other directive topics according to Art 288 TFEU.



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## **Two concepts of energy communities**

The EU has set two similar concepts of energy communities through its directives - the “renewable energy communities” (Renewable Energy Directive (EU) 2018/2001) on the

one side and the “citizen energy communities” (Internal Electricity Market Directive (EU) 2019/944) on the other side. The idea behind both of them is to push the creation of communities that organize collectively and of citizen-driven energy actions, which will help to pave the way for a much-needed clean energy transition while moving the individual citizens to the fore.

Let’s take a deeper look at their respective structure.

Art 2 sec 16 of the Renewable Energy Directive (RED II) defines a renewable energy community as a “legal entity”,

- which, in accordance with the legislation currently in force, is based on open and completely voluntary participation, is autonomous/independent and is under the effective control of the members or shareholders established in the immediate vicinity of the renewable energy projects owned and operated by that legal entity,
- whose members or shareholders are natural persons, local authorities or municipalities, or small and medium-sized enterprises,
- and whose aspiration is not primarily based on financial gain, but is to provide economic, social community and/or environmental benefits to its shareholders or members in which it is active.

Those communities have the right to collectively generate, consume, sell and store renewable energy. In addition, those entities shall generate a wider adoption of renewable energies, active participation in the energy transition, local investments, a reduction of energy consumption, lower supply tariffs, an improvement of energy efficiency and, in view of that, lead to the elimination of any energy poverty.

On the other hand, there is the citizen energy community, which was introduced by the Electricity Directive (ED II). It is defined in art 2 sec 11 as a legal entity,

- which is based on open and completely voluntary participation and which is actually controlled by its members or shareholders, who may be natural persons, but also legal entities (like local authorities or small businesses);
- whose main focus is not based on a financial return, but rather on offering community, economic or environmental benefits to its members/shareholders or to the local areas in which it operates;
- and may additionally operate in the areas of generation, supply, distribution, consumption, aggregation, storage and services (in the energy sector) for its

shareholders/members.

At first sight, they both seem quite similar, but there are some fundamental differences. In short, citizen energy communities are communities that operate on a supra-regional basis and jointly use, store or sell their generated energy, and are not limited to renewable sources.

Additionally, any actor can participate in such a community as long as shareholders or members, which are engaged in large scale commercial activity and for whom the energy area is constituting a primary field of economic activity, do not exercise any decision-making power.

Renewable energy communities, on the other hand, are regionally active players that are spatially limited to the generation, use, storage and sale of renewable energy, but will additionally benefit from lower local grid tariffs and presumably from a tax exemption, as they can operate on lower levels of the grid due to their geographical regionality. The renewable energy communities must be capable of staying autonomous, and also the participation of the members mustn't constitute their primary economic activity. As a practical example, one could outline the following simple scenario: If 10 households in a locality join together to form an independent society, invest jointly in a suitable photovoltaic system and use the energy generated from it together, this will be known as a renewable energy community.

The idea behind the energy communities seems promising on paper, but the EU's goals behind them are ambitious and require, in addition to the legal framework, a social rethinking of the European population, a steady backing of the state (at least initially) and, last but not least, the support of power-generating companies, without which the plan to generate 100% of the total electricity demand from renewable energy sources in the near future (and fulfilling the goals set for 2030 and 2050) will not be feasible.

## **Challenges**

One of the biggest challenges in this regard will be solving the question on how to create as many incentives as possible for every individual to ensure the establishment and participation in energy communities, since they are expected to hold a large share in the energy transition.



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One of these incentives could be that the energy communities would also be regarded as companies for tax purposes and thus become entitled to deduct input tax. The rules for when a community is considered a business / or has entrepreneurial status for tax purposes vary somewhat from state to state. However, most of them follow the principle of the three fundamental pillars - permanence, self-sufficiency and intent to generate revenue. The new energy communities are fulfilling all three of these conditions. Especially the critical third point, namely the intention to generate revenue is met, since an energy community is subject to an exchange of services - electricity for reimbursement of costs - which altogether should ultimately suffice for the status of entrepreneurship, regardless of whether the revenue generation is in the foreground or not. So in my opinion the option for input tax deductibility should be affirmative. In such a scenario, a community could at least be reimbursed, (depending on the respective state) in Austria or Germany, for example, with 20% of the costs for maintenance, repair, purchases and thus make the model of energy communities even more economically attractive.

Another issue is the choice of the corporate form. When the EU announced the Clean Energy Package including the energy communities, it also stipulated that an easy entry and

exit from the community must be possible for each individual. Of course, this also raises the question of which legal form to choose. The choice of legal form ultimately determines the organizational effort, the costs and the liability regime to a large extent. The legal form of public limited companies will probably be too expensive for small energy communities of private means and superstructure. In the case of limited liability companies, the strict formal requirements could result in difficulties with flexible changes of members, and in the case of associations and cooperatives, the ideational purpose must be clearly in the foreground, which could also become problematic in the instance of larger communities. Here, I think that real-life practice will show which legal form will prevail.

Likewise, the question of benefits vs. expenses is a valid one. From a purely economic and technological point of view, the entire power grid benefits from the fact that local energy communities are to consume the electricity where it is generated. This means that the electricity does not have to be transported over wide and higher-ranking network levels. This should also save the customers/members of such local energy communities a significant amount of money in grid fees for higher-level grid tiers. However, the question that is actually arising during the first implementation, is who and how exactly one would set up a simple, functioning platform where everyone from young to old, from technology aficionados to technology muffers can participate in this new way of energy consumption and exchange.

Several research projects are currently underway to solve these initial problems. It is already clear that a separate support and funding office is to be set up nationally (maybe even on a European stage), which is to serve as a kind of contact point for any questions from interested parties and is also to help and encourage the founding of energy communities in this regard.

With this in mind, many countries are considering the use of additional limited funding, for example, through special quotas and funding opportunities that are only granted for a limited initial period. In this way, first movers would ultimately generate advantages and, as an additional effect, it would likely be possible to achieve a greater influx to the energy communities right from the start.



Image source: EU

## Opportunities

Energy communities will allow us to combine technological innovations. The goal is to turn a user not only into a consumer but also into a producer, a so-called prosumer.

Energy communities could soon be expanded to include other energy services, such as e-mobility concepts, where electric cars could also be used jointly as part of a car sharing system. In a further step, these e-cars could also serve as additional electrical storage units that can be supplied to the community via an intelligent e-charging station in the event of energy shortages.

Blockchain is also currently experiencing a big buzz in the energy sector. Just to name one example: This technology could be combined with digital platforms (apps) for energy communities in order to achieve better traceability and documentation by visualizing individual energy consumption, for example, and to create an additional incentive for the individual members of an energy community to save energy (competitions, prizes).

Through the implementation of energy communities on a large scale, the cityscapes will also have to change so that the broad masses will be involved as well. This opens up an opportunity to develop new innovations through broad public input and, subsequently, to work as a community on a sustainable city, community and region of the future.

Lastly, it is important to note that the Clean Energy Package and the goals it enshrines will also create many new jobs. Installations of megawatt solar farms on rooftops over agricultural land or between crops will provide additional revenue streams for farmers. The recycling of photovoltaic systems with a service life of 20-30 years will also offer a large, yet almost untapped, market of considerable potential. Experts expect up to 4 million new jobs created in the next 15-20 years in connection with the energy turnaround in the European Union alone.

As one can see, the goals are set high - it remains to be hoped that as many of these subpoints as possible can be implemented to finally achieve the great goal of the energy transition and the associated reversal of climate change in the upcoming decades.

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