

# SELF-CONSUMPTION IN ENERGY USER SYSTEMS

Definitions according to European directives



European  
Commission

**Clean energy** for all Europeans



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# Self-consumption in energy user systems

## Definitions according to European Directives

### PART 1 INTRODUCTION

#### 1. Preliminary remarks

The self-consumption of electricity is a very important element in the context of the development of the energy system towards the objectives of decarbonisation of the system itself. Its role of active participation of users in the development of a new infrastructural model of the electricity system, the awareness of the consumer towards a conscious and efficient use of energy, as well as the creation of new market models are only some of the elements favoured by self-consumption. The recent publication at the end of 2018 of some directives deriving from the process launched by Europe in November 2015 (Winter package) brings to light the defining issue of user systems. Which self-consumption systems can be set up and what does the European legislation foresee in this regard? Another key element is the relationship between collective user systems and the electricity grid. As is well known, the regulations defining the user systems have been very stratified over time and very often concerned objects existing at a certain date, denying the possibility of being able to create new systems. The present study intends to analyse the definitions at European level that can be taken as a basis for the definition of a new defining framework for self-consumption user systems. The present study does not make any assumptions about the regulation of such structures.

### PART 2 ENERGY USER SYSTEMS AND RENEWABLES

#### 2. Renewables self-production/Self-consumption

##### Self-consumption/Self-consumer definition

Directive (EU) 2001/2018 (hereinafter referred to as the Directive) on the promotion of renewable sources establishes, first of all, the right for final consumers to be able to become self-consumers as defined below.

'renewables self-consumer' means a final customer operating within its premises located within confined boundaries or, where permitted by a Member State, within other premises, who generates renewable electricity for its self-consumption, and who may store or sell self-generated renewable electricity, provided that, for a non- household renewables self-consumer, those activities do not constitute its primary commercial or professional activity<sup>1</sup>.

It is important to note that the self-consumer is a natural or legal person, without distinction between types of household customers and that the figure of self-consumer, in the Directive, refers only to the production of electricity from renewable sources.

In the case of different legal entities of households, the activity of energy production and possible sale of surpluses should not represent a principal commercial or professional activity. The more detailed analysis of the definition of 'self-consumer' leads to the identification of the conditions that must be met by a person in order to be recognised as such, in particular:

- first of all, the consumer is a final customer and therefore the definitions of final customer apply to him <sup>2</sup> and the rights of an end-customer, including full access to the electricity system. With regard to the connotation of a final customer for a self-consumer, it is the same directive that starts from the principle that "Domestic users and communities participating in the self-

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<sup>1</sup> Article 2 point 14) of the Directive (EU) 2001/2018

<sup>2</sup> 'final customer' means a customer purchasing electricity for his own use – Article 2, point 9) of Directive 2009/72/EC

consumption of renewable energy should retain their rights as consumers, including the right to have a contract with the supplier of their choice and to change supplier<sup>3</sup>;

- as a general rule, the consumer must operate at his own sites within defined boundaries; however, Member States may allow the territorial scope of the consumer to also cover sites other than his own sites.

In relation to the above, it should be noted that the current regulations in Italy already define a sufficiently advanced framework for the practical definition of a final customer. The relationship between the end customer and the consumer unit has already been widely debated in the national system (the regulatory issue relating to the consumer unit has already been reported in a previous report, to which reference should be made<sup>4</sup>) and, in the light of this, it is considered that this report is already readily available for the application of the principles of the Directive. Therefore, from the moment when the consumer is an end customer, the provisions relating to the unit of consumption are readily applicable for its recognition; this does not deny the possibility of acting collectively or of forming renewable energy communities, as will be explained below.

### Self-consumer activity

The definition of self-consumers may also give rise to possibilities in operational terms which include, in addition to the possibility of producing and consuming the production carried out, the possibility of storing or selling self-produced renewable electricity, provided that this activity does not constitute the main activity (especially in the case of self-consumers other than domestic customers).<sup>5</sup> More specifically, the Directive requires Member States to ensure that their own renewable energy consumers, individually or through aggregators, are authorised to:

- (a) producing renewable energy, including for self-consumption;
- (b) to store and sell surplus production of renewable electricity, including through:
  - agreements for the purchase and sale of renewable electricity;
  - electricity suppliers;
  - agreements for exchanges between peers.

One of the most interesting aspects of these provisions is that the Directive also introduces new forms of energy trading, such as renewable energy trading agreements or peer trade agreements, which suggest the introduction of new market models. In particular, the directive defines:

- agreement to buy and sell electricity from renewable sources" means a contract whereby a natural or legal person undertakes to purchase electricity from renewable sources directly from an electricity producer;
- 'peer-to-peer exchange' of renewable energy means the sale of renewable energy between market participants under a contract with pre-determined conditions governing the automated execution and settlement of the transaction, either directly between market participants or indirectly through a third-party market participant certificate, such as an aggregator. The right to conduct peer trade does not affect the rights or obligations of the parties involved as final consumers, producers, suppliers or aggregators.

### Self-consumption modes

One of the elements not specified in the Directive is the way in which self-consumption takes place, i.e. whether self-consumption is carried out by means of a direct connection between the production plant and the consumption plant, or whether self-consumption should only be an issue of commercial accounting<sup>6</sup>. In order to extract useful elements for understanding this issue, it is necessary to go to the reasons that led to the introduction of the definition of self-consumer in the directive, more precisely the European legislator considered that with the increasing incidence of self-consumption of renewable

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<sup>3</sup> Whereas (72) of the Directive (EU) 2001/2018

<sup>4</sup>[http://www.enusyst.eu/documents/Energy\\_user\\_system\\_V.0.pdf](http://www.enusyst.eu/documents/Energy_user_system_V.0.pdf)

<sup>5</sup> No specific guidance is given on the definition of core business, so the regulation will have to address the issue of providing a definition of core business.

<sup>6</sup> [http://www.enusyst.eu/documents/Energy\\_user\\_system\\_V.0.pdf](http://www.enusyst.eu/documents/Energy_user_system_V.0.pdf)

energy, it is necessary to introduce the definition of "self-consumers of renewable energy" and "self-consumers of renewable energy who act collectively". It is also necessary to establish a regulatory framework that allows such self-used renewable energy consumers to produce, use, store and sell electricity without incurring a disproportionate burden. Citizens living in apartments, for example, should be able to benefit from the rights granted to consumers to the same extent as households living in single-family homes. Nevertheless, Member States should be allowed to distinguish between individual renewable energy consumers and renewable energy consumers acting collectively on the basis of their different characteristics, provided that such differentiation is proportionate and duly justified.<sup>7</sup> In a subsequent passage of the introductory part of the directive, both own consumption on site and the fact that the car consumer may be interested in the networks are mentioned<sup>8</sup>.

Therefore, it must be understood that self-consumption can take place both physically and commercially, so much so that, regardless of whether it is possible to impose fees related to the tariff impact, it is provided that for own consumption system fees can also be applied while the principle of proportionality to costs<sup>9</sup>. Therefore, in general, it should be provided that if the electricity consumed by the company itself uses the electricity grids, it must to some extent contribute to covering the costs of the network; the directive then allows (but does not oblige), under certain conditions, to impose charges also on the energy produced and directly self-consumed by the company.

### Collective self-consumers

The Directive introduces the concept of own consumption in collective form.

'jointly acting renewables self-consumers' means a group of at least two jointly acting renewables self-consumers in accordance with point (14) who are located in the same building or multi-apartment block;<sup>10</sup>.

The reasons for introducing such a provision are as follows: the granting of rights to self-consumers of renewable energy who act collectively also enables renewable energy communities to increase the energy efficiency of households and to help combat energy poverty by reducing consumption and supply tariffs. Member States should seize this opportunity appropriately, including by considering allowing the involvement of households that might not otherwise be able to participate, including vulnerable consumers and tenants.<sup>11</sup>."

The Directive specifically provides that Member States shall ensure that self-consumers of renewable energy in the same building, including apartment blocks, are allowed to carry out collectively the activities envisaged for a self-consumer and to organise among themselves the exchange of renewable energy produced at their site(s), without prejudice to grid charges and other relevant charges, fees, levies and taxes applicable to each self-consumer of renewable energy. Member States may distinguish between individual renewable energy consumers and individual renewable energy consumers acting collectively. Any other treatment shall be proportionate and duly justified<sup>12</sup>.

One of the fundamental questions that accompanies the application of the definition of self-consumption in collective form is to understand whether the collective form thus constituted is to be treated as a single final customer or whether each subject constituting the collective form maintains its status of final customer who will be able to enjoy energy in terms of self-consumption although this comes from plants located outside the perimeter of its single consumption unit (subject to the constraint relating to the building or condominium). Since the principle of free access to the electricity system, which is the pillar of the development of the internal energy market, is to be applied, it is considered that the solution that best guarantees the rights of consumers is that each entity making up the collective form retains its status of final customer. This does not prevent the possibility of enjoying the benefits of self-consumption, but implies the need for each customer to be (at least potentially) assigned a point of connection to the

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<sup>7</sup> Whereas (66) of the Directive (EU) 2001/2018

<sup>8</sup> Whereas (68) of the Directive (EU) 2001/2018

<sup>9</sup> See article 21, comma 2, letter a), point i), of the Directive (EU) 2001/2018

<sup>10</sup> Article 2 point 15) of the Directive (EU) 2001/2018

<sup>11</sup> Whereas (67) of the Directive (EU) 2001/2018

<sup>12</sup> Article 21, comma 4, letter c, of the Directive (EU) 2001/2018

network with the obligation to connect third parties that ultimately allows this to be able to supply energy in a single form on the market. This appears to be compatible with the provisions of the Directive, which provide that consumers must retain both their rights and their obligations as final consumers.<sup>13</sup> Another report has already talked about the possibility of extending the mode of self-consumption to a multitude of end customers belonging to a condominium demonstrating the possibility and advantages of a solution such as the one mentioned above<sup>14</sup>.

With regard to the spatial limits of self-consumption in collective form, the directive mentions the building or the condominium. The meaning of the same building or condominium is to be understood as a condominium composed of a single building or a multiplicity of buildings organized in the form of a supercondominium as provided for, moreover, by the (Italian) Civil Code.<sup>15</sup> The use of the concept of supercondominium recalls the idea of a space within a defined perimeter within which several buildings functionally share a series of services. This concept corresponds to the similar condition at the base of the realization of a closed distribution system.<sup>16</sup>

### Self-consumption and grid tariffs/charges

With regard to the imposition of network charges and miscellaneous charges, the Directive stipulates that consumers must not be subject to these charges:

- (i) in relation to the electricity from the system they consume or feed into, discriminatory or disproportionate procedures and charges and network charges that do not take account of costs;
- (ii) in relation to renewable electricity produced from renewable sources which remains available to them, discriminatory or disproportionate procedures and charges or tariffs<sup>17</sup>.

The reasons for these provisions are to be found in the following.

- The self-consumers of renewable energy should not bear discriminatory or disproportionate charges or costs and should not be subject to unjustified costs. Account should be taken of their contribution to the achievement of the climate and energy target and the costs and benefits they entail for the energy system as a whole. As a general rule, therefore, Member States should not levy charges on electricity produced and consumed on the same sites by own renewable energy consumers. Nevertheless, Member States should be allowed to apply non-discriminatory and proportionate charges to such electricity where necessary to ensure the financial sustainability of the electricity system, to limit support to what is objectively necessary and to make efficient use of their support schemes. At the same time, Member States should ensure that local consumers of renewable energy contribute in a balanced and appropriate manner to the overall system of sharing the costs of production, distribution and consumption of electricity, when it is fed into the grid<sup>18</sup>.
- To this end, Member States should, in principle, not levy charges on electricity produced and consumed individually by local renewable energy consumers at the same sites. Nevertheless, in order to avoid jeopardising the financial stability of support schemes for renewable energy, such an incentive could be limited to small installations with an electricity capacity not exceeding 30 kW. In some cases, Member States should be allowed to levy charges on their own renewable energy consumers for their own self-consumption of electricity where they make efficient use of their support schemes and apply non-discriminatory and effective access to their support schemes. Member States should also be able to apply partial exemptions from charges, levies or a combination thereof and support up to the level necessary to ensure the economic viability of such projects<sup>19</sup>.

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<sup>13</sup> Article 21, comma 2, letter c, of the Directive (EU) 2001/2018

<sup>14</sup> <http://www.enusyst.eu/documents/Self-consumption-AB.pdf>

<sup>15</sup> Article 1117 *bis* of Italian Civil Code

<sup>16</sup> Article 28 of the Directive (EU) 2001/2018

<sup>17</sup> Article 21, comma 2, letter a), points i) e ii) of the Directive (EU) 2001/2018

<sup>18</sup> Whereas (68) of the Directive (EU) 2001/2018

<sup>19</sup> Whereas (69) of the Directive (EU) 2001/2018

The issue of the application of tariffs and charges has always been an element of fundamental importance for the development of user systems. In a very brief way, only for the purposes of this analysis, the situation of the Italian system is that for which:

- for the part of the energy consumed internally, the variable parts of the tariff fees to cover the network costs and system charges are not applied;
- the same charges applied to any final customer that withdraws electricity from the grid are applied in a non-discriminatory manner to any electricity withdrawn from the public grid.

Without prejudice to any further study, this regime would appear, in its initial application, to be compatible with the general provisions of the Directive, especially as the Directive establishes, as already mentioned, that consumers must maintain both their rights and their obligations as final consumers.<sup>20</sup>

However, in addition, it is useful to note that the Directive introduces further provisions affecting the possibility of tariff charging for self-consumed energy:

- a) whether electricity from renewable energy sources is actually supported by support schemes; in this case, taxation may only take place to the extent that the economic viability of the project and the incentive effect of such support are not jeopardised;
- b) from 1 December 2026, if the total share of indigenously consumed installations exceeds 8 % of the total installed electricity capacity of a Member State, and if it is demonstrated, through a cost-benefit analysis carried out by the national regulatory authority of that Member State, carried out in an open, transparent and participatory process, that the provision in paragraph 2(a)(ii)<sup>21</sup>, has led to a significant disproportionate burden on the long-term financial sustainability of the electricity system or creates an incentive that exceeds what is objectively necessary to achieve the cost-effective deployment of renewable energy and that it would be impossible to minimise that burden or incentive by other reasonable measures;
- c) where the self-produced renewable electricity is produced in installations with a total installed electrical power exceeding 30 kW.

The issue of social acceptability has already been addressed in another report, to which reference should be made <sup>22</sup>; The issue of social acceptability has already been addressed in another interesting report to note that the directive also introduces two additional issues that may lead to the imposition of fees on the energy consumed by the company relating to the presence of an incentive and the size of the plants. However, the above remains a possibility and not an obligation.

### Self- consumption and storage

The Directive provides for the possibility for a self-consumer to install and operate electricity storage systems in combination with renewable electricity generation facilities for his own consumption without being subject to any double charge, including network tariffs for stored electricity that remains available to him.

### Production set-up

With regard to the production set-up, the Directive provides that the installation of the self-consuming renewable energy consumer may be owned by a third party or operated by a third party in relation to the installation, operation, including the operation of the meters, and maintenance, provided that the third party remains subject to the instructions of the self-consuming renewable energy consumer. The third party shall not be considered as a self-consuming consumer of renewable energy per se.<sup>23</sup>

The third party nature of the producer is one of the characteristic aspects of the energy systems of users that allows the development of the initiatives of self-consumption by placing in direct correlation the final

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<sup>20</sup> Article 21, comma 2, letter c) of the Directive (EU) 2001/2018

<sup>21</sup> The provision that in relation to renewable electricity produced from renewable sources which remains in the possession of a self-consuming consumer, no charges or tariffs should be applied

<sup>22</sup> [http://www.enusyst.eu/documents/Energy\\_user\\_system\\_V.0.pdf](http://www.enusyst.eu/documents/Energy_user_system_V.0.pdf)

<sup>23</sup> Article 21, comma 5, letter c), of the Directive (EU) 2001/2018

customer with the investor in the production initiative. In general, the relationship between the two subjects (or between more subjects in the case of collective self-consumption or, as indicated below, in renewable energy communities) is confined to a private dimension and on it the regulation of the system does not intervene. This structure also allows the development of particular forms of agreements that could be part of the broader family of power purchase agreements (PPAs).

### Directions for system regulation

With regard to specific indications for regulatory action, the Directive recalls a general principle of establishing a regulation framework promoting and facilitating the development of self-consumption of renewable energy on the basis of an assessment of existing unjustified barriers to self-consumption of renewable energy, as well as the potential of the latter. These assessments should be carried out on the basis of the territory and energy networks of each Member State.

Among the various elements of this favourable framework, the Directive gives the following practical indications, establishing that the same framework:

- a) deal with the accessibility of self-consumption of renewable energy to all final consumers, including those belonging to low-income or vulnerable households<sup>24</sup>;
- b) address unjustified obstacles to the financing of projects on the market and measures facilitating access to finance;
- c) address other unjustified regulatory barriers to the self-consumption of renewable energy, including for tenants;
- d) address incentives for property owners to create opportunities for self-consumption of renewable energy, including for tenants;
- e) grant self-consumers of renewable energy non-discriminatory access to relevant existing support schemes, as well as to all segments of the electricity market, in return for the self-produced renewable electricity they feed into the grid;
- f) ensure that local renewable energy consumers make an appropriate and balanced contribution to the overall sharing of system costs when electricity is fed into the grid.

## **3. Renewable energy community**

### Definition

One of the most innovative definitions introduced by the directive is that of a renewable energy community.

'renewable energy community' means a legal entity:

- (a) which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity;
- (b) the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities;
- (c) the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits

The concept of a renewable energy community recalls a collective form of participation in a project to develop the production and use of energy from renewable sources. The definition of a renewable energy community already contains many elements that allow to configure such subjects. Among other things, the principle of proximity and the definition and measurement of the environmental, economic, social and financial benefits achieved through the establishment of a renewable energy community are important elements to be investigated.

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<sup>24</sup> [http://www.enusyst.eu/documents/Energy\\_user\\_system\\_V.0.pdf](http://www.enusyst.eu/documents/Energy_user_system_V.0.pdf)

## Relationship between renewable energy communities and constituents

As in the definition of self-consumption, also in the definition of conditions for renewable energy communities, the final customer plays an important role. Indeed, the Directive provides that Member States shall ensure that final customers, in particular household customers, have the right to participate in renewable energy communities, while maintaining their rights or obligations as final customers and without being subject to unjustified or discriminatory conditions or procedures which would prevent their participation in a renewable energy community, provided that, as far as private companies are concerned, their participation does not constitute the main commercial or professional activity<sup>25</sup>.

Once again, the role of the final customer as the constituent nucleus of the energy communities and which must maintain its rights and obligations as final customer is invoked; therefore, whatever the configuration of these communities, the possibility of exercising the right of free access to the market by each final customer should remain guaranteed.

As regards the rights attributable to renewable energy communities, the Directive provides that Member States shall ensure that such communities have the right to:

- producing, consuming, storing and selling renewable energy, including through renewable electricity trading agreements;
- trading, within the same community, renewable energy produced by the generating units held by that renewable energy producer/consuming community, without prejudice to the maintenance of the rights and obligations of members of the renewable energy producer/consumers community as customers;
- access all appropriate electricity markets, directly or by aggregation, in a non-discriminatory manner.

## Framework of standards for the development of renewable energy communities

With regard to the framework of standards for the development of renewable energy communities, the provisions of the Directive <sup>26</sup> can be grouped into three macro-groups, more precisely:

### *Provisions on administrative procedures*

Directive establishes that:

- unjustified regulatory and administrative barriers for renewable energy communities are removed;
- renewable energy communities are subject to fair, proportionate and transparent procedures, in particular registration and licensing procedures, and to cost-conscious network charges, as well as relevant charges, levies and taxes, ensuring that they contribute in an appropriate, fair and balanced manner to the overall cost allocation of the system in line with a transparent cost-benefit analysis of distributed energy resources carried out by the competent national authorities;
- instruments are available to facilitate access to finance and information;
- regulatory and capacity building support is provided to public authorities to support the creation of renewable energy communities and to help authorities participate directly in them;
- rules are available to ensure fair and non-discriminatory treatment of consumers participating in a renewable energy community. *Provisions concerning the regulation of the electricity sector*

### • *Provisions concerning the regulation of the electricity sector*

Directive establishes that:

- renewable energy communities providing energy or aggregation services, or other commercial energy services, are subject to the provisions applicable to those activities;
- the relevant distribution system operator cooperates with the renewable energy communities to facilitate energy transfers within the renewable energy communities;

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<sup>25</sup> Article 22, comma 1, of the Directive (EU) 2001/2018

<sup>26</sup> Article 22, comma 3, of the Directive (EU) 2001/2018

- renewable energy communities are not subject to discriminatory treatment as regards their activities, rights and obligations as final consumers, producers, suppliers, distribution system operators, or other market participants.

- *Provisions relating to the fight against energy poverty*

The Directive stipulates that participation in renewable energy communities shall be open to all consumers, including those from low-income or vulnerable households.

### **PART 3 ENERGY USER SYSTEMS AND NON-RENEWABLE SOURCES**

#### **4. Self-production/Self-consumption from non-renewable energy**

While Directive (EU) 2018/2001 lays down a number of provisions in favour of the self-consumption of renewable energy, it is a fact that many self-consumption systems do not use renewable energy. For the purposes of this study, i.e. the identification of a coherent framework of definitions for user systems, it is necessary to clarify whether the self-consumption of non-renewable energy is permitted and, if so, in which forms.

##### Case of high efficiency CHP

Like the rest of the study, it will be limited to analysing mainly European regulatory sources. This analysis shows that self-consumption of electricity is expressly provided for in the case of high-efficiency cogeneration. Indeed, it is Article 8 of Directive 2004/8/EC that states that "as long as a producer of cogeneration is an eligible customer under national law within the meaning of Article 21(1) of Directive 2003/54/EC, Member States should take the necessary measures to ensure that tariffs for the purchase of electricity as a back-up or top-up to electricity generation are set on the basis of published tariffs, terms and conditions". The explicit reference to back-up or top-up electricity is, of course, to be understood as referring to the case where the customer has high efficiency cogeneration production in his self-consumption. Although Directive 2004/8/EC was repealed by Directive (EU) 2012/27, the concept of self-consumption of electricity produced in cogeneration has not been lost, in fact, in Annex IX of the directive containing the principles for cost-benefit analysis, the value of production (of heat and electricity) for the customer is mentioned among the benefits. It is intended that this value may include the value that can be associated with self-consumption. This benefit was then analyzed several times and recognized in various pronouncements of the Competition DG of the European Commission<sup>27</sup>. In the light of the various definitions, the element that would still appear to need to be defined with certainty is the possibility of establishing a multi-customer structure for cogeneration in the domestic sector.

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<sup>27</sup> See for example [http://europa.eu/rapid/press-release\\_IP-17-5366\\_en.htm](http://europa.eu/rapid/press-release_IP-17-5366_en.htm)

## Case of closed distribution systems (CDS)

The definition of a closed distribution system is referred to in Article 28 of Directive 2009/72/EC.

### **Article 28 – Closed distribution systems**

Member States may provide for national regulatory authorities or other competent authorities to classify a system which distributes electricity within a geographically confined industrial, commercial or shared services site and does not, without prejudice to paragraph 4, supply household customers, as a closed distribution system if:

- for specific technical or safety reasons, the operations or the production process of the users of that system are integrated; or
- that system distributes electricity primarily to the owner or operator of the system or their related undertakings.

Member States may provide for national authorities to exempt the operator of a closed distribution system from:

- (a) the requirement under Article 25(5) to procure the energy it uses to cover energy losses and reserve capacity in its system according to transparent, non-discriminatory and market based procedures;
- (b) the requirement under Article 32(1) that tariffs, or the methodologies underlying their calculation, are approved prior to their entry into force in accordance with Article 37.

3. Where an exemptions is granted under paragraph 2 the applicable tariffs, or the methodologies underlying their calculation, shall be reviewed and approved in accordance with Article 37 upon request by a user of the closed distribution system.

4. Incidental use by a small number of households with employment or similar associations with the owner of the distribution system and located within the area served by a closed distribution system shall not preclude an exemption under paragraph 2 being granted

As regards closed distribution systems, Directive 2009/72/EC assumes that where a closed distribution system is used to ensure the optimal efficiency of an integrated energy supply requiring specific operating rules or where a closed distribution system is maintained primarily for the use of the system owner, it should be possible to exempt the distribution system operator from obligations which would constitute an unnecessary administrative burden due to the particular nature of the relationship between the distribution system operator and the system users. Industrial, commercial or shared service sites such as railway station buildings, airports, hospitals, large campsites with integrated facilities or chemical industry establishments may include closed distribution systems due to the specialised nature of their operation.<sup>28</sup>. What is considered by Directive 2009/72/EC outlines the profiles of the particular network regime consisting of closed distribution systems; more specifically, it is possible to use a closed distribution system if:

- there is the case of having to guarantee the optimal efficiency of an integrated energy supply that requires specific operating rules
- the system is maintained primarily for the use of the system owner.

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<sup>28</sup> Whereas (30) of the Directive 2009/72/EC

Further clarifications on the nature of closed distribution systems are provided by the European Commission itself in a working document<sup>29</sup>.

*The European Commission has further clarified the meaning of SDC in its interpretative note of 22 January 2010 on retail markets. In that note, the Commission points out that Closed Distribution Systems are primarily distribution systems built within a geographically limited location and this distinguishes them from more general Public Networks. This also means that the TSO operator cannot independently connect outside the site, as defined above. Secondly, TDIs could be located on common industrial, commercial or service sites such as, for example, railway station buildings, airports, hospitals, shopping centres, large campsites with integrated facilities or industrial plants because of the specialised nature of their operation. Users connected to TDIs are industrial or commercial customers, entities providing shared services, or, as provided for in paragraph 4, households employed by the owner of the distribution system, or linked to the latter by a similar link (the Commission would point out in this connection that households employed by the owner of the distribution system, or linked to the latter by a similar tie must be identified flexibly, including households for which there are working relationships with companies linked to a TDC and initially belonging to the same group of companies as the owner of the TDC), as well as, where appropriate, electricity producers. Moreover, the requirement in Article 28(4)(a) ('for specific technical or safety reasons, the operations or production process of the users of the system in question shall be integrated') refers to situations where several entities share a distribution network that allows the optimisation of energy supply or requires specific technical, safety or management standards. For example, this is common in industrial sites where the heat produced by a cogeneration system is used, for the respective production processes, by the different entities present there; or this requirement arises when the different entities present need to operate with different electrical standards from those commonly applied to public networks (e.g. grid frequency).*

Therefore, even in the closed distribution system, the presence of electrical energy production plants that produce their own consumption within the same system is permitted. In the case of CDSs, the European directives do not establish any conditions for production characterising.

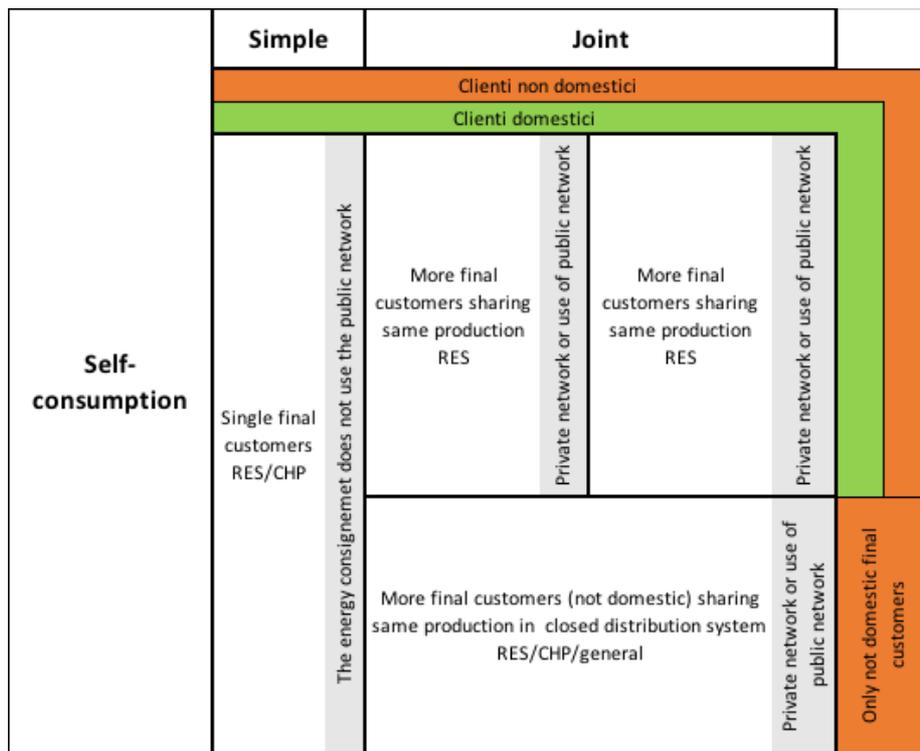
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<sup>29</sup> COMMISSION STAFF WORKING PAPER 22 JANUARY 2010 -INTERPRETATIVE NOTE ON DIRECTIVE 2009/72/EC CONCERNING COMMON RULES FOR THE INTERNAL MARKET IN ELECTRICITY AND DIRECTIVE 2009/73/EC CONCERNING COMMON RULES FOR THE INTERNAL MARKET IN NATURAL GAS - RETAIL MARKETS-  
[https://ec.europa.eu/energy/sites/ener/files/documents/2010\\_01\\_21\\_retail\\_markets.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/2010_01_21_retail_markets.pdf)

## PART 4 CONCLUSIONS

### 5. Overview of definitions of self-consumption

In the light of all the above, the following summary can be derived regarding the possibility of defining self-consumption systems. The summary framework must take into account the type of self-consumption, the type of energy used for self-consumption, the type of customers who can constitute the system in self-consumption and the type of infrastructure to support self-consumption. As mentioned in the introduction to this study, no hypotheses are formulated for the regulation of these arrangements: this will be the subject of a subsequent study.



RES = production and self-consumption only of renewable electricity  
 FER/CAR = production and self-consumption only of CHP electricity  
 General = every type of production

The present analysis does not cover the existing historical configurations for which forms of protection of acquired rights may have to be adopted (if permitted).