PRACTICAL EXAMPLE

Calculation of consumption/ injection in collective self-consumption

E-REDES

Table of Contents

Introduction

This document details the calculation of energy consumption and injection data within an energy community. In it, you will find an explanation of the various load diagrams that you can access via the **E-REDES Digital Counter** and a practical case where we present the various possible energy consumption/injection scenarios associated with 3 types of installation. It is also important to note that energy sharing is carried out based on the model defined by the Collective Self-Consumption Management Entity (EGAC), which establishes the sharing coefficients used to distribute energy in an optimised way, according to the needs of the community members (in the case presented we are considering sharing coefficients proportional to consumption).

Load Diagrams

Definition

Since the installation is already integrated into the Smart Grid, E-REDES meters can collect more detailed information on the consumption and possible injection of energy from an installation connected to the Public Service Electricity Network (RESP) or internal grid. This enables processes such as collective self-consumption, which will be detailed in this document. This detail is displayed as a load diagram, corresponding to the average power values the installation consumed or injected into the RESP or internal network in 15-minute minutes.

According to the regulations in force, the values shown in the load diagrams are expressed in Power (kW), so each quarter of an hour shows the average value of the power that the installation consumed or injected into the RESP in each of the 15-minute periods. However, the values on the invoices are presented in Energy (kWh). For this reason, to compare the data from the load diagrams with the invoices, the values in the load diagrams must be converted to energy. As this is a diagram with values every 15 minutes, i.e. every quarter of an hour, to convert the value in power to energy, you just must divide it by four (4).

From the **E-REDES Digital Counter**, the owner of a consumer facility (CF) that is part of a collective self-consumption (ACC) or renewable energy community (CER) can access and download a file containing the relevant data about their installation to visualise the impact of their participation in these schemes properly. The file contains multiple load diagrams, each with the meaning and relevance detailed in this document.

It should be noted that depending on the characteristics of each installation, not all load diagrams will be applicable. In this case, they will always show the number zero (0) in all their quarter hours.

Data	Hora	Consumo medido na IC, Ativa (kW)	Excedente de energia na IC, Ativa (kW)	Energia imputada à IC, Ativa (kW)	Consumo fornecido à IC pelo comercializador, Ativa (kW)	Autoconsumo através de rede interna, Ativa (kW)
2024/05/26	00:15	0,228	0	0	0,228	0
2024/05/26	00:30	0,208	0	0	0,208	0
2024/05/26	00:45	0,24	0	0	0,24	0
2024/05/26	01:00	0,096	0	0	0,096	0
2024/05/26	01:15	0,08	0	0	0,08	0
2024/05/26	01:30	0,028	0	0	0,028	0
2024/05/26	01:45	0,092	0	0	0,092	0
2024/05/26	02:00	0,028	0	0	0,028	0
2024/05/26	02:15	0,08	0	0	0,08	0
2024/05/26	02:30	0,036	0	0	0,036	0

Example of some of the information you'll find in the file downloaded from the E-REDES Digital Counter

Translation of the data on the example above:
"Data" – Date
"Hora" – Time
"Consumo medido na IC, Ativa (kW)" – Measured consumption in the CF, Active (kW)
"Excedente de energia na IC, Ativa (kW)" – Surplus energy in the CF, Active (kW)
"Energia imputada à IC, Ativa (kW)" – Energy charged to the CF, Active (kW)
"Consumo fornecido à IC pelo comercializador, Ativa (kW)" – Consumption supplied to the CF by the commercialiser, Active (kW)
"Autoconsumo através de rede interna, Ativa (kW)" – Self-consumption through an internal network, Active (kW)

Types of load diagrams/information on the Digital Counter

The names of each load diagram included in this document correspond to the terms used in the Self-Consumption Regulation (RAC), published by ERSE, which facilitates better correlation and understanding.[1]

These load diagrams only concern BTN customers (active power). However, it is important to note that there are other load diagrams for the other voltage types. To find out more, please consult the RAC.

Please note that some diagrams have the term 'energy' in their name. Despite this, and in accordance with the Regulations, the values shown in all of them are expressed as power. However, as already mentioned, conversion into energy is possible by simply dividing by 4.

1 - Registered consumption, Active (kW)

Data collected by the E-REDES meter relating to the times when the consumer installation was consuming power from the RESP.

2 - Registered Injection, Active (kW)

The values collected by the E-REDES meter for the times when the consumer installation injected power into the RESP. Values other than zero will only be shown in this load diagram if, cumulatively:

a) There is a self-consumption production unit (UPAC) or storage unit within the installation;

b) There are moments when the UPAC is producing and/or storage equipment is being discharged, with a power greater than the consumption power existing in the installation at the same moment.

[1] Consuming facilities or installations' and 'producing facilities or installations' are referred to as installations whose balance of energy consumed and injected in a given quarter of an hour is positive (consumption of energy from the RESP) or negative (injection of energy into the RESP). It should be noted, however, that these designations do not correspond to those defined in the RAC, where consumption installations/facilities (CF), production installations/ facilities (PF) and autonomous storage installations (AI) are defined, but despite this, their data is treated according to whether they are, at each quarter-hour and after the quarter-hour balance, consumers or producers.

3 - Consumption measured at the CF, Active (kW)

This load diagram is only relevant for consumer installations that have installed inside them a UPAC that uses a renewable source or a storage system, duly licensed for injection into the RESP. For all other installations, this diagram will have the same values as the 'Registered consumption' diagram.

The values for this parameter are calculated based on the values recorded by the meter in the 'Recorded Consumption' and 'Recorded Injection' diagrams, according to the quarter-hourly balance principle.

If, in each quarter of an hour, the value shown in the 'Consumption recorded' diagram is higher than the value recorded in the 'Injection recorded' diagram, the difference between the 'Consumption recorded' value and the 'Injection recorded' value will be recorded in the corresponding quarter of an hour of the 'Consumption measured at the CF' diagram.

For example, for a record in the same quarter of an hour with an average power of 3 kW in 'Recorded consumption' and 1 kW in 'Recorded injection', the value to be recorded in the 'Consumption measured at CF' column would be 2 kW (3 minus 1). If the 'Injection recorded' value were higher than the 'Consumption recorded' value, then the 'Consumption measured at the CF' value would be zero.

4 - Total UPAC production, Active (kW)

This load diagram is only relevant for consumer installations that have a UPAC installed inside them with an installed power of more than 4 kW. These installations require the installation of a specific meter (totalising meter) that measures all the power produced by this unit.

5 - Energy charged to the CF, Active (kW)

By registering as a participant in a community, the consumer installations receive part of the production verified at the producer installations. This load diagram shows how much of the power produced in the community has been allocated to the consumer installation.

This value, which always refers to each quarter of an hour, is primarily influenced by the total power produced by the community that is eligible to be shared and the sharing coefficient determined for that installation.

Power will not be imputed to an installation if:

a) The installation is a producing installation, i.e. in the quarter of an hour under analysis it has recorded a value for 'Registered injection' that is higher than the 'Registered consumption' value;

b) In accordance with Article 10 of the RAC, the suspension of sharing affecting the consuming installation or the entire community is in force.

Note: Please note that although the RAC refers to the term 'energy' in the name of this diagram, the values shown are for power, as in all the other diagrams provided.

6 - Consumption supplied to the CF by the commercialiser, Active (kW)

This load diagram corresponds to the average power value, which results in the energy after the necessary conversion by dividing the values in the load diagrams by 4, needed to supply the installation's consumption and which does not come from the community, i.e. it is the energy that the commercialiser must consider in its invoice. This value is calculated by correlating the average power consumed at the CF for each quarter of an hour, as calculated for the 'Consumption measured at the CF' diagram, with the energy charged to the CF.

Once power has been imputed to the consumption installation, the calculation of the value that will contribute to the supplier's bill follows these conditions:

a) If the value of the average power imputed to the installation is lower than the value of the measured consumption, the value will be calculated by the difference between the 'measured consumption' and the 'imputed energy'. For example, if, in a given quarter of an hour, a power of 3 kW has been determined for the 'Energy charged to the CF' diagram, and a value of 4 kW has been calculated for the 'Consumption measured at the CF' diagram, the value that will be calculated for the 'Consumption supplied to the CF by the supplier' diagram will be 4 - 3 = 1 kW;

b) If the value of the average power imputed to the installation is equal to or greater than the value of the measured consumption, the value calculated for the 'Consumption supplied to the CF by the supplier' diagram will be zero.

Note: Please note that although the RAC diagram is labelled 'Imputed energy,' the values shown are power values, as in all the other diagrams provided.

7 - Surplus energy in the CF, Active (kW)

This diagram has a non-zero value when the 'Energy charged to the CF' value is higher than the 'Consumption measured at the CF' and corresponds to the difference between the two values. For example, if in a quarter of an hour, the 'Imputed energy in the CF' is 5 kW and the 'Measured consumption in the CF' is 2 kW, the 'Surplus energy in the CF' will be 3 kW (5 minus 2).

After being converted into energy, this average power can be sold by EGAC if it has a surplus sales contract.

8 - Self-consumption through the internal network (8.1), RESP LV (8.2), MV (8.3), HV (8.4) or EHV (8.5), Active (kW)

For a better understanding of these 5 load diagrams, it's important to realise a few concepts:

1) The average power shared by the generating installations and allocated according to the sharing coefficients to each consuming installation is used to satisfy the latter's average consumption power, which would otherwise have to be satisfied by the respective supplier. These diagrams account for this reduction in the average power consumed through imputed energy.

Self-consumed power is calculated by correlating, every quarter of an hour, the value calculated in the 'Consumption measured at the CF' diagram with that determined in the 'Energy charged to the CF' diagram.

The conditions for determining its value are:

a) If the value of the average imputed power is equal to or greater than the value of the measured consumption, the value of the average self-consumed power will correspond to the total value of the measured consumption since all the average power that was consumed by the consumption installation in that quarter of an hour can be satisfied by the production that was imputed to it, with the value of the imputed excess being accounted for as a surplus in the 'Surplus energy in the CF' diagram;

b) If the value of the average imputed power is lower than the value of the measured consumption, the value of the average self-consumed power will correspond to the value of the average imputed power, in which case the remaining measured consumption will be accounted for in the diagram 'Consumption supplied to the CF by the commercialiser', as mentioned above.

2) Once the average self-consumed power has been determined, it must be categorised according to its origin. Depending on the location of the connection points of the installations integrated into the community, the average power shared by each of the producing facilities with a given consuming installation may or may not pass through the RESP. For example, if the consumer and producer installations are in the same building, the average power injected will be received by the consumer installation using only the building's internal network. On the other hand, if the generating installation is located elsewhere (for example, in the building next door), the average power shared with the consuming installation will pass through the RESP. If it has passed through the RESP, it must also be categorised according to the voltage level at which the generating installation is connected.

For example, analysing a consumer installation, the energy charged in each quarter of an hour with a non-zero value of measured consumption has the following origins:

i. From a generating installation whose power reached it using only the internal network;
ii. From a generating installation connected to the HV, whose power reached it using the RESP;
iii. From a generating installation connected to LV, whose power reached it using the RESP.

In this quarter of an hour, this consumption installation will have non-zero values in the 'Self-consumption through internal network', 'Self-consumption through HV RESP' and 'Self-consumption through LV RESP' diagrams.

The breakdown of the average self-consumed power calculated in 1) will be divided between these 5 diagrams, according to the origin of the average power produced by each production installation integrated into the community. For example, if the value of the average power imputed exclusively via the internal network is 30 per cent of the total power imputed to it, 30 per cent of the self-consumed power will be accounted for in the 'Self-consumption via internal network' diagram, and so on until 100 per cent of the self-consumption power is assigned to the diagrams appropriate to its origin.

The values recorded in the self-consumption diagrams that have passed through the RESP in the various quarters of an hour that make up a month for all consumer installations, after converting the value into energy, will be consolidated in an invoice to be sent to EGAC in relation to the network access rates to be applied to self-consumption through the RESP, as published by ERSE.

9 - Energy shared by the CF, Active (kW)

This load diagram is only relevant for consumer installations that have a UPAC or storage system installed inside them, duly licensed for injection into the RESP, and which are integrated into a community. For all other installations, this diagram will always have a value of zero.

Its value for each quarter of an hour is calculated using the following methodology:

a) If the value of the 'Consumption registered in the CF' is lower than that of the 'Injection registered in the CF' in each quarter of an hour, the value will result from the difference between the value of the registered injection and the registered consumption. For example, if in a quarter of an hour, the value of the consumption recorded is 3 kW, and the value of the injection recorded is 5 kW, the value of the average power to be shown in the corresponding quarter of an hour of the 'Energy shared by the CF' diagram will be 2 kW.

b) If the value of 'Consumption recorded at the CF' is greater than or equal to the value of 'Injection recorded at the CF' in each quarter of an hour, the value to be recorded for 'Energy shared by the CF' will be zero.

In addition, it should be noted that values equal to zero will be recorded in the quarter hours of the 'Energy shared by CF' diagram if a suspension of sharing has been triggered for the installation, or the entire community, for one of the reasons provided for in the regulations and for as long as this suspension lasts.

10 - Power input, Active (kW)

In addition to the detailed load diagrams, the value of power taken for BTE, MV, HV, and EHV installations will also be available. Unlike the other indicators, this information takes the form of a single monthly value corresponding to the maximum average power value recorded in a quarter of an hour on the 'Consumption measured at the CF' load diagram within the period considered for billing.

The data shown on the E-REDES Digital Counter is based on the billing cycle of the network access rate to the suppliers, so it may not reflect the billing cycle between the supplier and the customer.

It should be noted that this value is an average value recorded over a 15-minute period, minus any surplus that may have been recorded in the same quarter of an hour so that the installation may have consumed more power from the RESP within that quarter of an hour for a shorter period, but that may be enough to trigger the contracted power control switch in BTN installations.

Use Case

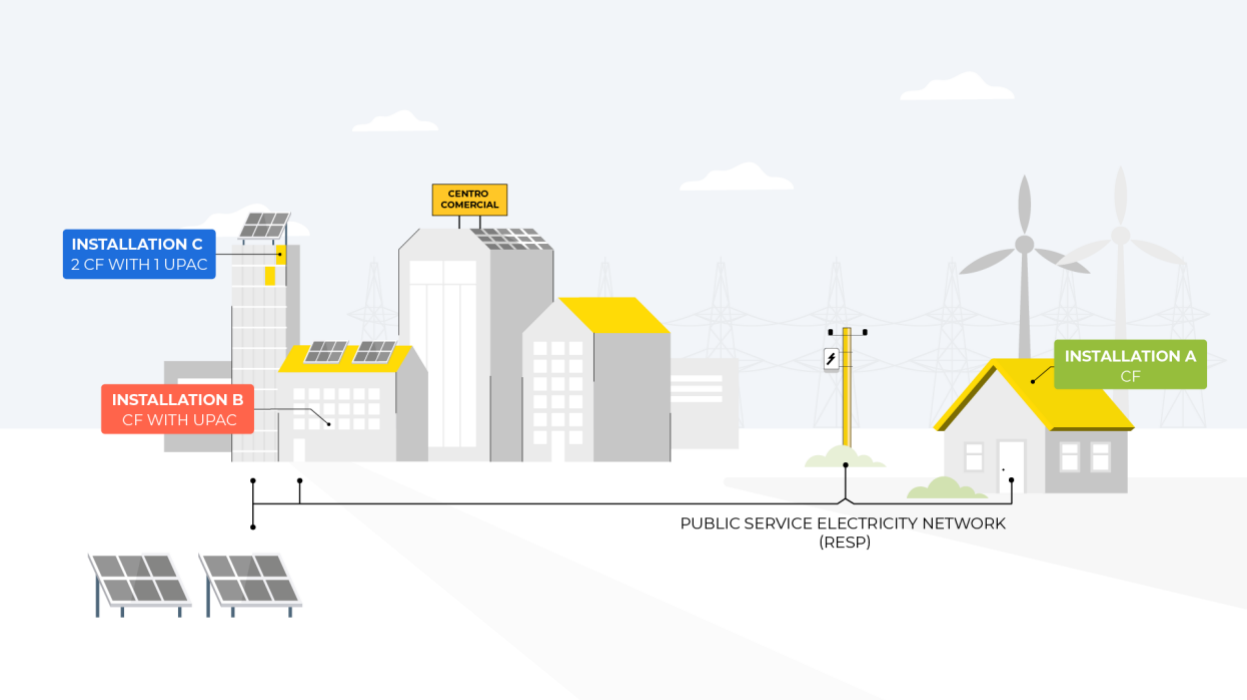
Calculation of community energy consumption

Energy sharing is calculated based on the model defined by EGAC for determining sharing coefficients. These coefficients determine the power that each member of the community receives from the total production and vary every quarter of an hour.

Possible scenarios by type of installation

By way of example, we present the different possible scenarios, considering that EGAC has chosen the methodology with sharing coefficients proportional to consumption, in a community with collective self-consumption made up of different types of installations:

- **Installation A – Single-family house without self-consumption facility,** has access to energy only via RESP (CF).
- **Installation B - Consumer installation with UPAC installed** (CF with UPAC).
- **Installation C - Collective building with solar panels** containing 2 flats belonging to the community. These flats can either use energy from the internal grid (produced by the building's solar panels) or via the RESP.



Note: E-REDES only has access to information related to the energy consumed from the RESP and injected into it. All the energy produced by the Production Plant and immediately consumed by the Consumption Plant, if it does not have a totalising meter, will not be visible to E-REDES.

Installation A - Single-family house without self-consumption facility

Scenario 1 - Only grid consumption (RESP), with no energy charged to the CF, over a 15-minute period

The values shown in the load diagram are:

- Registered consumption: 0.48kW
- Imputed energy: 0.00kW
- Consumption supplied to the CF by the commercialiser: 0.48kW, corresponding to the energy consumed in this quarter of an hour of 0.12kWh
- Surplus: 0.00kW

Given that the imputed energy in this period is 0.00kW, this means that all the energy consumed by this installation came from the commercialiser and not from the production installations belonging to the community.

Scenario 2 - There was consumption from the network (RESP), with energy charged to the CF lower than consumption over a 15-minute period

The values shown in the load diagram are:

- Registered consumption: 0.48kW
- Imputed energy: 0.32kW
- Self-consumption via the LV RESP: 0.32kW, which corresponds to 0.08kWh
- Consumption supplied to CF by the commercialiser: 0.16kW, corresponding to the energy consumed in this quarter of an hour of 0.04kWh
- Surplus: 0.00kW

In this interval, the installation consumed 0.48kW and was charged 0.32kW of what the community produced after applying the quarter-hour balance. Thus, the difference between these values corresponds to the value that will have to be supplied by the commercialiser (0.48-0.32 = 0.16kW).

Given that the value of the 'Imputed energy' diagram (0.32kW) is lower than that of consumption (0.48kW), then the diagram with the self-consumed energy through RESP BT is the same as the 'Imputed energy'.

In this scenario, as self-consumed energy originated from imputed production through the LV RESP, the value accounted for as self-consumption through the LV RESP will be consolidated with the values calculated for the remaining quarter hours of the billing period in an invoice to be issued to EGAC with the valuation in accordance with the rates published by ERSE.

Scenario 3 - There was consumption from the network (RESP), with energy charged to the CF via the LV RESP, in excess of consumption over a 15-minute period

The values shown in the load diagram are:

- Registered consumption: 0.60kW
- Imputed energy: 1.16kW
- Consumption supplied to CF by the commercialiser: 0.00kW
- Self-consumption via the LV RESP: 0.60kW, which corresponds to 0.15kWh
- Surplus: 0.56kW, corresponding to the energy consumed in this quarter of an hour of 0.14kWh, which is available to be traded by EGAC.

The energy allocated to this installation in this time interval was 1.16 kW, which means that the energy produced by the community and allocated to this installation according to the sharing coefficient was greater than what it consumed, resulting in self-consumed energy through the BT RESP 0, 60 kW (corresponding to consumption, since this is lower than the imputed energy) and a surplus of 0.56 kW (obtained from the difference between the imputed energy (1.16) and consumption (0.60)), which can be sold by EGAC if there is a contract for the sale of surpluses.

In this scenario, as self-consumed energy originating from imputed production through the LV RESP was used, the value accounted for as self-consumption through the LV RESP will be consolidated with the values calculated for the remaining quarter-hours of the billing period in an invoice to be issued to EGAC with the valuation in accordance with the rates published by ERSE.

Installation B - Consumer installation with installed UPAC

Scenario 1 - No injection into the grid (RESP), no imputed energy, over a 15-minute period

The values shown in the load diagram are:

- Registered consumption: 0.80kW
- Registered injection: 0kW
- Consumption measured at the CF: 0.80kW
- Injection measured at the CF: 0kW
- Imputed energy: 0.00kW
- Consumption supplied to the CF by the commercialiser: 0.80kW, corresponding to the energy consumed in this quarter of an hour of 0.2kWh
- Surplus: 0kW

During this period, no injection into the RESP was recorded, so the installation for E-REDES showed behaviour identical to that of a consumption-only installation, where the consumption recorded corresponds to the consumption measured.

(identical scenario to installation A – scenario 1)

Note: The fact that the injection value is zero does not allow us to conclude that the installation did not produce during this time interval but rather that there was no injection into the RESP.

Scenario 2 - No injection into the grid (RESP), but with imputed energy, over a 15-minute period

The values shown in the load diagram are:

- Registered consumption: 0.36kW
- Registered injection: 0.00kW
- Consumption measured at the CF: 0.36kW
- Injection measured at the CF: 0.00kW
- Imputed energy: 0.24kW
- Self-consumption through the LV RESP: 0.24kW, which corresponds to 0.06 kWh
- Consumption supplied to the CF by the commercialiser: 0.12kW, corresponding to the energy consumed in this quarter of an hour of 0.03kWh
- Surplus: 0.00kW

During this period, no injection into the RESP was recorded, so the installation for E-REDES showed behaviour identical to that of a consumption installation, where the consumption recorded corresponds to the consumption measured.

(identical scenario to installation A – scenario 2)

Note: The fact that the injection value is zero does not allow us to conclude that the installation did not produce during this time interval but rather that there was no injection into the RESP.

Scenario 3 - No injection into the network (RESP), but with imputed energy greater than consumption over a 15-minute period

The values shown in the load diagram are:

- Registered consumption: 0.16kW
- Registered injection: 0.00kW
- Consumption measured at the CF: 0.16kW
- Injection measured at the CF: 0.00kW
- Imputed energy: 0.28kW
- Self-consumption through the LV RESP: 0.16kW, which corresponds to 0.04kWh
- Consumption supplied to the CF by the commercialiser: 0.00kW
- Surplus: 0.12kW

During this period, no injection into the RESP was recorded, so the installation for E-REDES showed behaviour identical to that of a consumer installation, where the consumption recorded corresponds to the consumption measured.

(identical scenario to installation A – scenario 3)

Note: The fact that the injection value is zero does not allow us to conclude that the installation did not produce during this time interval but rather that there was no injection into the RESP.

Scenario 4 - There was an injection into the network (RESP), with a value lower than consumption and no imputed energy, over a 15-minute period

The values shown in the load diagram are:

- Registered consumption: 0.32kW
- Registered injection: 0.12kW
- Consumption measured at the CF: 0.20kW
- Injection measured at the CF: 0.00kW
- Imputed energy: 0.00kW
- Consumption supplied to the CF by the commercialiser: 0.20kW, corresponding to the energy consumed in this quarter of an hour of 0.05kWh
- Surplus: 0.00kW

During this period, the production plant injected 0.12kW into the grid, which was insufficient to compensate for the energy consumed via the RESP in the same quarter of an hour (0.32kW). The consumption measured in this case will be the difference between the power consumed and injected (0.32-0.12=0.20kW). If no energy has been imputed, all the measured consumption will have to be supplied by the respective commercialiser (which will correspond to 0.05kWh).

Scenario 5 - There was an injection into the network (RESP), with a value greater than consumption and no imputed energy, over a 15-minute period

The values shown in the load diagram are:

- Registered consumption: 0.16kW
- Registered injection: 0.25kW
- Consumption measured at the CF: 0.00kW
- Injection measured at the CF: 0.09kW
- Imputed energy: 0.00kW
- Consumption supplied to the CF by the commercialiser: 0.00kW
- Surplus: 0.00kW

In this 15-minute interval, the installation consumed 0.16kW. However, it also injected 0.25kW into the RESP, so it injected enough power to cover the consumption recorded. Therefore, the injection measured in the CF corresponds to the difference between the power injected and consumption (0.25-0.16=0.09kW), and this balance of 0.09kW will be included in 'Energy for sharing' to be used by the community.

Scenario 6 - Injection into the network (RESP) and imputed energy, both lower than consumption, over a 15-minute period

The values shown in the load diagram are:

- Registered consumption: 0.30kW
- Registered injection: 0.10kW
- Consumption measured at the CF: 0.20kW
- Injection measured at the CF: 0.00kW
- Imputed energy: 0.12kW
- Self-consumption through the LV RESP: 0.12kW, which corresponds to 0.03kWh
- Consumption supplied to the CF by the commercialiser: 0.08kW, corresponding to the energy consumed in this quarter of an hour of 0.02kWh
- Surplus: 0.00kW

E-REDES recorded an injection of 0.10kW into the RESP for this interval, which was insufficient to cover the power consumed (0.30kW). Therefore, the measured consumption is the difference between consumed and injected power (0.30-0.10=0.20kW). Given that this installation has been allocated 0.12kW of imputed energy, this means that the only consumption that has been supplied by the commercialiser corresponds to (0.20-0.12=0.08kW), i.e. 0.02kWh of energy consumed.

Scenario 7 - Injection into the network (RESP) lower than consumption and imputed energy higher than consumption over a 15-minute period

The values shown in the load diagram are:

- Registered consumption: 0.54kW
- Registered injection: 0.14kW
- Consumption measured at the CF: 0.40kW
- Injection measured at the CF: 0.00kW
- Imputed energy: 0.56kW
- Self-consumption through the LV RESP: 0.40kW, which corresponds to 0.10kWh
- Consumption supplied to the CF by the commercialiser: 0.00kW
- Surplus: 0.16kW

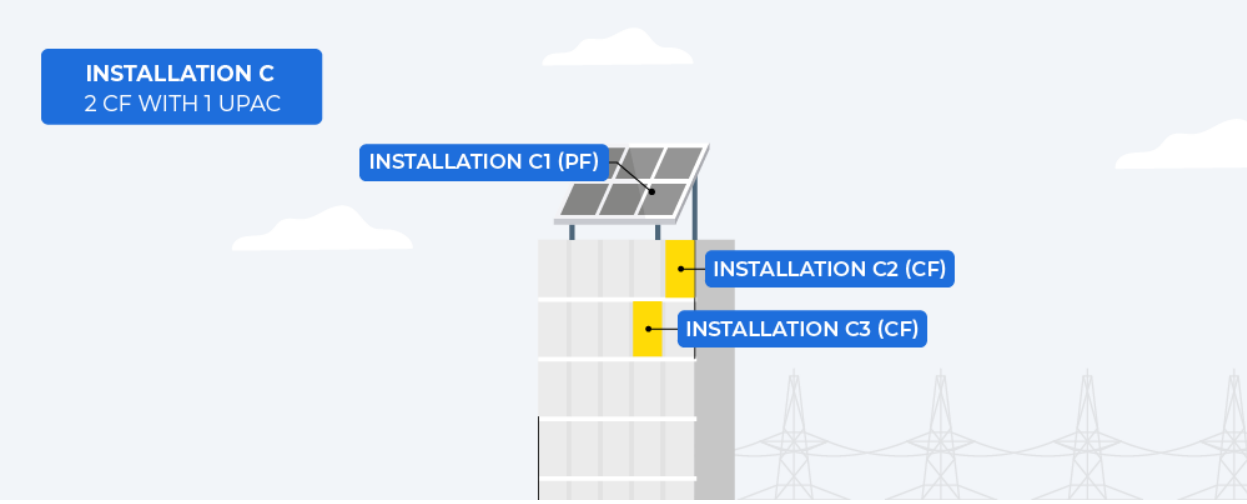
In these 15 minutes, there was more consumption (0.54kW) than power injected into the RESP (0.14kW). This means that the consumption measured at the CF is 0.40kW (0.54-0.14). However, this installation has been allocated a power of 0.56kW, so in this range it has a surplus value of 0.16kW (0.56-0.40) which will be reverted to EGAC, which can sell it to a commercialiser, subject to the existence of a surplus sale contract.

Since all the installation's consumption was met with the power produced by the community, the commercialised supplied 0.00kW of consumption, so it will not charge for any consumption in this time interval.

Scenario 8 - There was injection into the network (RESP) greater than the value of consumption and imputed energy over a period of 15 minutes (scenario exclusive to dynamic sharing coefficients)

This scenario is not applicable in this practical case since we are using sharing coefficients proportional to consumption. Therefore, for this situation, if dynamic sharing coefficients were used and EGAC defined a non-zero coefficient value for the installation in this quarter of an hour, the imputed energy plus the measured injection would be considered surplus.

Installation C - Collective building with 1 production plant (C1) and 2 flats that only consume energy and do not produce (C2 and C3)



Scenario 1 – There was an injection in the RESP within a period of 15 minutes

The values shown in the load diagram are:

- Registered injection: 1.36kW
- Energy shared by PF: 1.36kW

Assuming that a production facility (PF) only produces energy and does not consume energy from the RESP, its total energy production will be equal to the value of this PF's contribution to the total energy to be shared by the community.

However, once a production installation is located in a collective building, the shared energy for installations C2 and C3 will receive energy from this installation through the internal network, while the other installations in the community will receive it via RESP. These values will be reflected in the load diagrams of these installations, as shown in the examples above.