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Observatorio Eólico de Galicia

ECONOMIC ASSESSMENT OF RENEWABLE ENERGY COMMUNITIES

PRACTICE GUIDE

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Xavier Simón Fernández
José Manuel Heredia Conde
María Montero Muñoz
David Pérez Neira

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Economic Assessment of Renewable Energy Communities. Practice guide

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Xavier Simón Fernández, José Manuel Heredia Conde, María Montero Muñoz, David Pérez Neira.

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This **economic assessment tool** for a **renewable energy community** is a **model of economic analysis** adapted to the current normative configuration for these legal entities in Spain. Subsequent modifications in the juridic framework will require adaptations on this assessment tool. Its adaptation to other normative realities will make other changes necessary in order to maintain its usefulness within the decision-making process.

This tool was created using the language and commands inherent to the **Excel utility**, by Microsoft. It consists of several Excel spreadsheets which, incorporated within a single workbook, will provide a set of **synthesis documents** of the **observed economic outcomes** from a community energy initiative, **in a given reference year**. For this purpose, the manager or user of the tool should include a set of **real data or starting** information relative to the communitarian initiative in the year under study.

Coherently, the objective is to **ease** the **decision-making** process once the **initiative** is **already operative**, through an instrument capable to offer a **vision** of the **obtained results** expressing, in an **easily understandable** manner, the **economic performance** achieved by the project in its operations. This economic analysis, grounded on the assessment of the annual results or outcomes, is unavoidable even when non-profit legal entities are being considered. This kind of entities, as it is the case for energy communities, do not seek the obtention of a financial return.

Documents provided to the manager or user will include results available under **two analysis scales**: Firstly, the economic results for the **renewable energy community**, considered as a whole. Secondly, the results corresponding to the **partners**, both considering the partnership base as a single unit and, under certain hypotheses, also for each of the individual partners.

Aiming to conciliate, for all potential users, simplicity and accessibility in terms of its configuration, with richness and usefulness concerning the information provided, the proposed tool actually presents its own limitations, and we even argue that it will require a constant improvement effort from the part of all users involved.

This is a **freely available** **open-source** instrument, although some of the spreadsheets in the Excel workbook remain hidden for ensuring that its global structure cannot be modified, so avoiding that its utility is eventually missed. Notwithstanding the former, any user has the possibility to deliver to us (observatorio.eolico@uvigo.gal) her **considerations** for the continuous improvement of the developed tool.

While any mistake eventually made remains of the own authors' exclusive responsibility, we do not wish to miss the opportunity to mention several people whom, at initial stages, were of great value for improving the structure of this tool. They are Gullermo David Rey, Professor of the University of Vigo; Juan Sacri, from Sapiensenergia; and Mauro Vázquez, from Belianenergy.

Index

List of Figures

Purpose of the Documents integrating the Analysis Tool

1

The Excel workbook containing this **tool** for the **economic analysis** aims to provide a view of the actual economic impacts observed, resulting from the operation of a community-based energy production initiative focused on generating electricity from renewable energy sources.

In this regard, it is important to understand that the calculation model allows for the configuration of key elements in certain financial statements or documents, which summarize the economic performance of the initiative in question. This is based on the figures recorded during a specific reference period, which will generally coincide with a given calendar year.

The documents that comprise this tool, which may hereafter be referred to interchangeably as the "economic evaluation tool" or the "economic analysis tool", are designed to be **flexible enough** for use in various community-based models. In this regard, for example, they could be applied to both a collective self-consumption project and a renewable energy community, whether the latter is subject to the compensation regime on the electricity bill for surplus energy produced or opts instead to sell the generated energy to an energy retailer -utility company-.

The primary objective behind the design and development of the documents is to provide a **practical instrument** to understand the economic implications of projects of this nature. These documents are not intended to serve as formal accounting records, neither from the perspective of financial accounting nor from that of management or cost accounting. Nevertheless, they do aim to closely align with the assumptions characteristic of the latter.

These limitations arise from the very nature of the economic activity conducted within a Renewable Energy Community. This unique context introduces specific considerations in analyzing the economic results relevant to such initiatives, highlighting the need for a dedicated tool to support this process. A significant aspect of this uniqueness is linked to the regulatory framework governing these activities, which in Spain primarily comes from the transposition of certain European Directives into national law.

In this regard, the "**Clean Energy for All Europeans Legislative Package (CEP)**" is particularly significant. According to **Roberts (2020)**[1], while previous European regulations failed to recognize and adequately address the specific characteristics and challenges of energy

1 **Roberts, Joshua.** Power to the people? Implications of the Clean Energy Package for the role of community ownership in Europe's energy transition. Review of European, Comparative and International Environmental Law, No. 29, Special Issue Article. Wiley Periodicals LLC, 2020.

communities, the CEP legislative package introduces a groundbreaking legal framework aimed at supporting community ownership within the energy sector. This represents a major shift in the legal context applicable to renewable energy communities in the European Union in recent years.

The integration of renewable energies into the European Internal Energy Market (IEM) had largely negative consequences for community energy projects. Nonetheless, the CEP package, finalized in May 2019, establishes a supportive legal framework for community ownership, designed to help the EU achieve its climate and energy goals for 2030. The CEP package consists of three key legal texts:

a. The **recast Directive (EU) 2018/2001**, on the promotion of the use of energy from renewable sources, also known as the "Renewable Energy Directive II" or "RED II".

b. The **recast Directive (EU) 2019/944**, on common rules for the internal electricity market and amending Directive 2012/27/EU, also known as the "Internal Electricity Market Directive" or "IEMD".

c. The **recast Regulation (EU) 2019/943**, on the internal electricity market, also known as the "Internal Electricity Market Regulation" or "IEMR".

In line with the "Energy Union's" vision of placing citizens at the center of the energy transition, the above-mentioned policy instruments within the CEP establish the "empowerment of consumers to act as market participants in the energy market and the energy transition" as a regulatory principle governing the Internal Energy Market for Electricity.

One relevant contribution of the CEP is that it identifies citizen energy initiatives that emphasize community ownership. In particular, the "IEMD" defines "Citizen Energy Communities" (CECs), while the "RED II" defines "Renewable Energy Communities" (RECs). Both concepts reflect a specific approach to managing collective ownership of energy-related activities, which is carried out through a legal entity that must follow certain principles related to its ownership structure and governance model, as well as commit to a non-commercial purpose.

On one hand, while the general goal of these type of projects is to maximize self-consumption of electricity produced by the community installation for each member, it is also possible to configure the Excel tool for scenarios where no self-consumption occurs. On the other hand, each member participates in the initiative not to achieve financial returns, as required by the aforementioned regulations.

Thirdly, ensuring sufficient economic returns to cover the expenses related to operating and managing the community initiative is a fundamental assumption underlying the business model. Despite this consideration, the calculations performed by the proposed economic evaluation tool are based on actual data —or effectively observed data— provided by the initiative's manager. This includes situations where members may be paying fees below the minimum annual amount required to cover the entity's costs. Additionally, it is crucial to recognize the social and environmental benefits associated with the Renewable Energy Community (REC), which are not assessed in the documents provided by this tool for analyzing economic data.

Finally, given the legal framework described above, partners in the initiative do not hold assets that can be capitalized by selling them to the best buyer on the market. In this regard, the REC should establish a governance model that defines the procedure for joining and exiting the initiative, ensuring that this procedure is always free and not linked to profit through the commercial transfer of each member's share. It is clear that such an activity does not align well with the structure and functions of conventional business enterprises, whether they operate individually or collectively, as would be the case for the type of energy initiative for which this tool has been developed.

Diffusion of the Economic Analysis Tool for Observed Data and its Links to Other Publicly Available Resources

2

To ensure the tool described in this document effectively reaches its objective of becoming useful for the analysis of the actual economic performance of community-based energy initiatives, it is crucial to establish a mechanism that makes this resource accessible to individuals or organizations interested in using it.

Consequently, developing a **communication and dissemination strategy** for this tool is crucial for facilitating the economic evaluation of results obtained by Renewable Energy Communities or similar projects. As stated above, the tool primarily aims to help for analyzing the key metrics recorded by these initiatives.

The strategy includes three main components:

- **Making the Excel workbook accessible:** The Excel tool will be made freely available, along with the present document itself, through the following website: http://observatorio.eolico.uvigo.es/.
- **Providing an additional Excel workbook:** An earlier version of the tool, similar in functionality and calculation model, will also be made available. This second workbook will include an explanatory document detailing its utility, internal structure, and operation. Its primary aim is to assist in developing the Viability Plan for a community energy initiative before it is implemented. The economic evaluation will begin with a set of assumptions about the expected characteristics and future behavior of the community project, which the initiative manager must define and input into the Excel tool.
- **Preparing an academic article:** An article will be created to explain the process of developing the Excel workbook described above, highlighting its relevance to key research issues commonly discussed in the academic literature on this topic.

As outlined in the action plan for disseminating this tool designed to analyze the actual economic data recorded by a community energy initiative in a specific year, there is also a second tool with a similar structure, calculations performed, and functionality.

This additional tool, which served as the basis for the one described herein, is also structured as a single Excel workbook that combines two sets of sheets. The first set enables the manager to input initial assumptions that serve as the basis for calculations, while the second set presents the results of these calculations.

At least **three key differences** distinguish the two tools:

a. The **purpose or fundamental objective** is different for each tool. The tool designed for developing the Viability Plan aims to assess the feasibility of an initiative that is generally still a possibility —a hypothetical project whose expected economic behavior needs to be understood to determine whether it is sustainable before proceeding.

In the tool designed to evaluate real data referenced in this document, we begin with an existing community initiative for which we have actual operational data corresponding to a specific year. The primary objective, therefore, is not to assess the feasibility of a future project in advance, but rather to analyze the performance of an active initiative by examining its economic indicators recorded within the specified annual timeframe.

b. Each Excel tool is designed with a distinct purpose, leading to differences in their **temporal focus**, especially in what concerns how results are presented. In the first scenario, where the objective is to conduct an *ex-ante* evaluation of the project's overall feasibility, it is crucial to adopt a multi-year perspective that comprises the entire lifespan of the project. This approach allows for a comprehensive capture of all anticipated economic flows over time.

While recognizing the multi-year nature of the project being analyzed, the focus changes when the goal is to conduct an *ex-post* analysis of actual data from a single year of operation. In this instance, the emphasis will be primarily on the specific annual period under examination, to which the starting data —actually observed and supplied by the manager to the Excel tool— will correspond.

c. **Nature of input data**: As indicated in the previous points, the nature of the input data varies between the two Excel tools. In the case of assessing prior economic feasibility of a community project, the input data will be necessarily based on assumptions regarding the anticipated characteristics of the projected initiative. Therefore, the Excel tool will rely on estimates derived from these hypothetical scenarios rather than on observed data. In contrast, when analyzing data from a specific year, the economic evaluation tool will utilize actual data reflecting the initiative's real-world operations, thus eliminating the need for estimates based on assumptions made about future facts.

Scope of Documents and Analysis Scales

3

The tool focuses on **information of economic significance**, presenting it as corresponding **amounts or monetary values** through specific **summary documents**. This approach enhances accessibility to the information for its analysis and helps users understand the corresponding implications from multiple perspectives.

To further clarify the defined scope, the documents comprising the tool follow a straightforward strategy consisting of three successive phases:

1. Presentation of actual recorded **income** based on the data provided by the manager.
2. Presentation of the actual **costs** effectively incurred for the setting-up and subsequent operation and functioning of the facilities during the analysis period.
3. Calculation of the net **result** or performance, defined as the difference between the two previous dimensions: income and costs.

The income includes the economic value of the generated energy, which reflects the potential savings for community members from the produced electricity. This energy is partially allocated for collective self-consumption by the members, while the surplus is either compensated or sold to the energy retailer. The tool determines the proportions of produced energy allocated to each purpose based on the actual energy volumes self-consumed by the members in kWh, as well as those designated for compensation or, if applicable, sold to the retailer. These energy amounts are based on what has been recorded for the year under analysis and will be provided by the manager of the energy initiative.

Two complementary analytical scales or perspectives are integrated. On the one hand, the economic flows of the **entity** carrying out the initiative are assessed. On the other hand, a similar analysis is conducted from the perspective of the **members**. In this second approach, the **aggregated behavior of the partners** is considered, as well as the **individual outcomes** for each member, assuming certain conditions are met. This latter assumption allows for the allocation of corresponding amounts to each individual member.

Introduction of the General Observed Data and Configuration of the Key Options for the Analysis Model

4

This section will describe each table designed for the manager of the community energy initiative to input the actual observed data for the annual analysis. All these tables are located in the Excel sheet labeled "**General Real Data (Obs.)**", which is the first sheet in the Excel workbook.

1. INCOME AND EXPENSES

The manager must first specify the year for which data is being provided. This is done by entering an integer between 1 and the total duration of the community project in the "**Year Number**" field, representing the sequential year of analysis. This number will refer to the sequential number corresponding to the annual exercise under analysis. For instance, to analyze the third year of the energy initiative's operation, enter the number 3. Below this field is the "**Natural Year**" box, where the actual calendar year should be entered. For example, if the analysis is for the third year, which corresponds to 2027, enter the year 2027 using four digits and no decimals.

A. INCOME

Regarding the revenues, the various items included in the table refer to the **income** attributable to the **managing entity** of the community initiative. In general, they should be recorded for their total annual amount, which usually aligns with the amount reported in the entity's financial income statement.

Income from self-consumed energy and surplus energy, whether subject to compensation or sold, must reflect the **economic value of the energy** that was effectively self-consumed or, if applicable, the amounts received in exchange for the transmission of surplus energy to the grid through the retailer, either through the mechanism of compensation on the bill or through the sale of energy.

Additionally, the "**Extraordinary Initial Membership Fee (Only for the First Year)**" field records the value of extraordinary fees charged to all members by the managing entity during the analysis year, provided it is the first year of activity ("**Year Number**" = 1). For any year other than the first, this field should be set to €0.00. If extraordinary fees occur in a later year, they will be recorded as regular/standard fees -ordinary fees-.

The sum of all regular/standard membership fees during the analysis year should be reflected in the "**Membership Fees**" field of the table.

The "**Income Deriving from Other Complementary Services Provided to the Partners**" field refers to the total amounts invoiced by the managing entity to its members during the year in question. This income is for services provided beyond the supply of the energy produced that is allocated to them.

The revenue table includes the field "**Capital Grants Transferred to the Financial Year Result (Annual Attribution)**", which captures the amount of capital grants received by the managing entity that should be accounted for in the income statement for the analysis year. Typically, this involves the linear allocation of a grant intended to support investment in electricity generation facilities. For such grants, the annual amount recorded would generally be the total grant divided by the number of years of useful life of the subsidized assets.

Below is the "**Income**" table, along with the fields designated for recording the year to which the data pertains. The specific numbers presented correspond to a hypothetical case of a community energy initiative:

Figure 1. Data Entry Tables: Income

INCOME	Year Number	1
	Natural Year	2025
Revenues from Self-Consumed Energy		4.466,00 €
Revenues from Excedentary Energy Subject to Energy Compensation		2.233,00 €
Revenues from Excedentary Energy Sold		- €
Extraordinary Initial Membership Fee (Only for the First Year)		- €
Membership Fees		2.470,47 €
Income Deriving from Other Complementary Services provided to the Partners		- €
Capital Grants Transferred to the Financial Year Result (Annual Attribution)		1.680,00 €

B. EXPENSES

The expense items included in the "**Expenses**" table exclusively relate to the **costs** incurred by the **entity** managing the community energy initiative during the analysis year. The table follows the typical structure of an income statement, with the following major categories:

- Purchases of Materials and Services
- Personnel Expenses
- External Services including, among other concepts, the following ones:
  - Leases -referred as "Rentals (Land and Others)"-
  - Professional Services (e.g., notaries, registrars, lawyers)

- Insurance Premiums
- Banking Services
- Utilities (water, electricity, telecommunication, etc.), referred as "**Supplies**"
- Other Services (consulting, administrative services, or other general services)

- **Other Taxes (Different from the Corporate Income Tax or the Value Added Tax**). This category includes amounts paid by the managing entity for regional or local taxes, and it may also include guarantees deposited with public administrations, if deemed appropriate as a cost by the manager.

  An example of a regional fee to include under "**Other Taxes**" could be the "Regional Tax for the First Registration", which stands for the Autonomous Community Registration Fee corresponding to the initial registration on the Official Electric Facilities Registry. In Galicia, this fee is a fixed amount of €10.47 for the year 2024.

- **Other Losses Arising from Ordinary Corporate Operation Activities**. This category covers potential charges/costs arising from routine management activities, such as the adjustment to inventory for tools.

The first two rows of the expense table align with what the Spanish accounting plan classifies as "**Purchases of Materials and Services**" Specifically, "**Other Supplies Purchases**" covers the cost of materials necessary for the entity's production process that are neither merchandises nor raw materials. Examples include packaging, containers, and storable fuels. Complementarily, "**Works Done by Other Companies**" pertains to the acquisition of services that are integral to the entity's production process but are outsourced to third-party providers.

The third to fifth rows of the expenses table, both inclusive, represent typical **personnel expense** items from an accounting perspective. The definition of each item aligns with that provided by the Spanish accounting plan. Briefly, "**Wages and Salaries**" refers to the gross compensation of personnel, expressed as the total annual amount covering all employees involved in the initiative, while "**Social Security Costs to be Assumed by the Entity**" refers to the employer's share of Social Security contributions attributable to the employees. Lastly, the "**Other Social Expenses**" category captures any other personnel-related costs distinct from those included in the previous two categories.

The next group of rows in the expenses table relates to cost items classified as "**External Services Expenses**" in accounting terms. Most of these categories are self-explanatory and their meanings can be easily inferred from their names. Additionally, the tool assumes that the definitions of each of these items align with their usage in Spanish financial accounting for business activities. However, some clarifications may be helpful:

a. **Rentals (Land and Others):** This item mainly refers to rental payments that the managing entity of the energy initiative may need to make to landowners for the use of the surfaces where energy production facilities are located. Additionally, it can include any other rental payments made by the entity during the analysis year. The total annual amount should be indicated in all cases.

b. **Insurance Premiums:** In the context of an energy production initiative, this primarily refers to the annual premium charged by the insurer for the policy covering the energy production facilities owned by the managing entity. Naturally, other insurance premiums paid by the managing entity during the analysis year should also be included in this category.

c. "**Banking Services**" should record the amounts charged to the managing entity by financial institutions for these services. This category includes most banking fees, with the most common in business operations being account maintenance and administration fees, debit and credit card issuance and renewal fees, fees for transfers and other payment orders, and fees for processing checks deposited into the entity's accounts.

   In a community initiative with standard -ordinary- monthly membership fees, a significant cost under the "Banking Services" category might be the fees for managing direct debit batches.

   The concept of banking services does not include the interest charged for the money sums owed to financial institutions, as such interest is classified as a financial expense rather than a banking service fee.

d. "**Supplies**": This item refers to utilities, involving recurring service expenses, typically invoiced and charged on a pre-established periodic basis. Some of the most common examples include, among others, costs for electricity, water, landline and mobile telephony, and Internet connectivity.

e. "**Other Services**": This category encompasses all "External Services" contracted from third parties by the managing entity that do not fit into any other categories within this expense group. Examples of "Other Services" include consulting or advisory services (such as accounting advisory, tax advisory, and others), administrative management, and technical support for specific tasks related to managing an energy initiative (e.g., "Members or Partners Monitoring").

Following the sections on external service costs, this document includes two additional items mentioned earlier: "**Other Taxes (Different from the Corporate Income Tax or the Value Added Tax)**" and "**Other Losses Arising from Ordinary Corporate Operation Activities**". These items are assumed to cover all relevant costs incurred by the managing entity for the year in question and conforming with their corresponding accounting definitions.

Regarding "**(Annual) Amortization of the Investment**", the energy initiative manager must decide **whether to include** depreciation-related expenses as part of the entity's costs. If included, the corresponding amount for the year must be specified, and the tool will incorporate this into both the income statement and the cash flow statement generated by the model. If depreciation is not included, entering a value of €0.00 for this item will cause the tool to ignore this cost. However, from an accounting perspective, depreciation should always be accounted for. If it is excluded when calculating membership fees (monetary income for the managing entity), the resulting documents will reflect the entity absorbing the progressive loss in value of its investments through its own equity.

Immediately following the investment depreciation item, the next group of cost items in the "**Expenses**" table refers, on one hand, to "**Financial Income**" and, on the other, to "**Financial Expenses**", as indicated by the names of the two rows presented to the manager for completion.

In this regard, the cell corresponding to "**Financial Income**" should reflect the value of income generated by the community initiative's managing entity during the analysis year, provided that this income is of a financial nature according to the accounting definition of the term. Typically, financial income includes all revenues generated from the investment of one's own capital into third parties. Accordingly, this item should encompass interest income earned by the managing entity from sight or term bank accounts, fixed-income financial assets (e.g., bonds, debentures), or, if applicable, loans granted by the managing entity.

In line with this, the cell for "**Financial Expenses**" should capture all expenses that fit the specified definition and pertain to the managing entity for the fiscal year under review. While the tool follows the definition of financial expenses as outlined by the Spanish Accounting Plan, it is worth noting that financial expenses encompass interest charges on bank accounts, interest on loans taken by the managing entity, and financial costs associated with lease payments under financial leasing agreements for acquiring durable goods such as machinery, technical facilities, or vehicles.

The final group of cost items included in the "**Expenses**" table pertains to the taxation of the annual economic result obtained by the managing entity of the community energy initiative during the year under study. The three rows included in this group refer to **taxation under the direct tax** on profits applicable to the entity. If no such tax applies to the managing entity, or if the managing entity is exempt from the applicable tax, the value indicated in each of these three fields should be €0.00.

If the previously mentioned conditions are not met, thus indicating that the entity is effectively subject to direct taxation, the "**Corporate Income Tax**" field should display the **net tax liability or the amount payable** on the entity's profits for the year in question. This net liability usually **differs** from the amount payable or refundable to the tax authority at the end of the fiscal year, as determined by the tax settlement. The latter amount, known as the **Differential Tax Liability**, is irrelevant for the data entry process relative to the input information required by the assessment tool.

Generally, barring any potential deductions from the gross tax liability, the net tax liability — this latter amount being the one which should be reported in the table— will approximate the result of multiplying the entity's taxable base by the applicable tax rate. Typically, the taxable base is closely aligned with the entity's pre-tax economic result for the fiscal year.

The "**Tax Credit**" item is not strictly a cost or income but represents changes in the "**Credits for Losses to be Carried Forward**" account. This item increases when the pre-tax result is negative and decreases when credits for losses from previous periods are utilized against a positive pre-tax result.

Complementing the previous item, the "**Accumulated Tax Credit**" should represent the balance of unused credits for losses to be carried forward that accumulates each year.

Let us look at the following example to illustrate the operation of these three items. In the first year of its activity, if the managing entity of the energy initiative experiences a loss of €100 and has an effective corporate tax rate of 25%, the "**Corporate Income Tax**" item should be recorded as €0.00 because there is no tax liability on the loss. The entity would generate a tax credit of €25, calculated as 25% of the €100 loss. Therefore, the "**Tax Credit**" field should be recorded with a positive amount of €25. As this is the first year of activity, there are no prior accumulated "**Tax Credits**", so the "**Accumulated Tax Credit**" row will also reflect the €25 generated during this fiscal year.

Continuing with the example, let us evaluate the second year of activity. During this period, the initiative achieves a positive result of €50, which would normally incur a tax of €12.50 at a 25% tax rate. However, with an "**Accumulated Tax Credit**" of €25 from the previous year, the "**Corporate Income Tax**" field would show €0.00, as the tax liability is fully offset by the accumulated credit. The "**Tax Credit**" field would then be recorded as -€12.50, reflecting the reduction in the accumulated credit. This amount represents the application of €12.50 from the existing credit to cover the current year's tax liability.

In this second year, the value recorded for the "Accumulated Tax Credit" item should be €12.50. This amount reflects the remaining balance after applying €12.50 of the initial €25 accumulated tax credit to the current year's tax liability. This ensures that the "**Accumulated Tax Credit**" accurately represents the amount of unutilized tax credits at the end of the fiscal year (typically, December 31).

Below is a view of the "**Expenses**" table, filled out based on a hypothetical case of a community initiative:

Figure 2. Data Entry Tables: Expenses

EXPENSES	2025
Other Supplies Purchases	- €
Works Done by Other Companies	- €
Wages and Salaries	- €
Social Security Costs to be Assumed by the Entity (% over Gross Wages)	- €
Other Social Expenses (Other Personnel Costs)	- €
Rentals (Land and Others)	480,00 €
Facilities Repairing and Maintenance	600,00 €
Profesional Services (Notaries, Lawyers, Registry Officers, Economists, Advisors, etc.)	
Transportation Expenses	
Insurance Premiums	1.400,00 €
Banking Services	240,00 €
Advertising, Propaganda & Public Relations	
Supplies	360,00 €
Other Services	450,00 €

EXPENSES	2025
Other Taxes (Different from the Corporate Income Tax or the Value Added Tax)	10,47 €
Other Losses Arising From Ordinary Corporate Operation Activities	50,00 €
Amortization of the Investment	- €
Financial Income	- €
Financial Expenses	- €
Corporate Income Tax	1.814,75 €
Tax Credit	
Accumulated Tax Credit	

2. PROJECT TIME HORIZON

The table "**Project Time Horizon (Years)**", following shown, contains a single editable cell where the initiative manager must specify the time horizon of the project by entering an integer representing the number of years. This value must align with the linear depreciation schedule set by the managing entity for the initial investment. In turn, this depreciation should correspond to the estimated useful life of the fixed assets —such as the energy production facilities— that are subject to depreciation.

Figure 3. Data Entry Tables: Project Time Horizon

Project Time Horizon (Years)	25

3. PROJECT FINANCING

Conceptually, investments involve the allocation or use of funds and realizing them necessitates identifying the sources of financing for these resources. The economic viability assessment tool offers a streamlined **financial structure**, featuring a project financing model that is organized into **three main items**. Each item is represented by a row in the table provided to the manager. These items are:

A. EQUITY

This item pertains to the accounting concept of equity, excluding public grants, such as subsidies, which are categorized separately. Equity encompasses **capital** contributed by members —similar to share capital in business accounting— as well as other components

of the managing entity's **net worth**. This includes **reserves** (whether legal, statutory, or voluntary), **retained earnings** (undistributed profits), and **negative results from previous periods** (accounting losses), which reduce the value of equity and should always be recorded with their inherent negative sign.

B. DEBT

This item should be understood in a broad sense, identifying with the concept of "**external financing**". Therefore, this section must include the amounts corresponding to all financial resources made available to the managing entity of the community energy initiative by third parties that are considered **repayable funds** —meaning they must be returned to those who provided them within a specified timeframe—. As defined, debt, in the sense of "external resources", will, of course, include explicit forms of financing, such as loans requested by the managing entity from financial institutions or credit lines it decides to contract. However, implicit financing mechanisms, such as overdraft balances in bank accounts, should also be considered here. In addition to bank financing, debts also encompass those arising from non-negotiated but spontaneous financing derived from the ordinary operations of an economic activity. This category includes debts that the entity may owe to its suppliers or public administrations, arising from invoices or tax obligations that are currently pending payment.

C. GRANT

A key component of the financing structure is the potential inclusion of **non-repayable public grants** or subsidies. These funds are considered supplementary to contributed capital but are treated as part of equity in the accounting framework. Their inclusion in the financing model aligns with their accounting treatment as a source of equity.

Subsidies allocated for operating expenses —used to cover operational deficits or support the entity's regular activities, rather than for acquiring capital goods— should not be included in this category. These operating subsidies are directly incorporated in the income statement for the fiscal year in which they are granted or, if applicable, the fiscal year during which the supported activity occurs.

If operating subsidies need to be recorded in a given year, the manager should reflect the subsidy amount as an increase in the "**Capital Grants Transferred to the Financial Year Result (Annual Attribution)**" item in the last row of the income table. Although this approach does not align with standard accounting practices —since operating subsidies are not capital subsidies— it provides a practical solution for the analysis conducted by the economic assessment tool.

Each of the three items described above has two columns in the table titled "**Project Financing**". The first column, "**Initial Year**", should reflect the value of the corresponding item at the end of the initiative's first year of activity. The second column, "**Change in the Year (€)**", should reflect the difference between the item's value at the end of the year under analysis and its value at the end of the previous year. In the specific case where the year under review is the initial year, the values in both columns for each item should be identical. When filling in this

second column, it is particularly important to carefully reflect the correct sign of the variation that occurred during the year, following the principle that a decrease in the item is recorded as a negative variation (minus sign), and an increase is recorded as a positive variation (plus sign), regardless of the item.

The following table, titled "**Project Financing**", is presented with data corresponding to a hypothetical case of a community energy initiative:

Figure 4. Data Entry Tables: Project Financing

Project Financing	Intitial Year	Change in the Year (€)
Equity (Partners' Own Capital)	70.150,00 €	70.150,00 €
Debt	- €	- €
Grant	42.000,00 €	42.000,00 €

4. INVESTMENT

Like any business initiative, the establishment and operation of a community project/initiative requires substantial resources, primarily destined to acquiring fixed assets. These capital assets are characterized as having a long useful life, extending beyond a single fiscal year.

Investment in fixed assets, a key part of the initial investment, is complemented by expenditures with a multi-year impact, such as incorporation costs, also referred as "Establishment Costs". While these costs may no longer be classified as expenses to be amortized over several fiscal years from an accounting perspective, they remain significant investments from a management standpoint.

The following table, titled "**Investment**", is provided for the manager to record data related to investments, displaying fields filled with values corresponding to a hypothetical case:

Figure 5. Data Entry Tables: Investment

Investment	Complete Project Lifetime	Change in the Year (€)
Establishment Costs	150,00 €	150,00 €
Facilities (Excluding the Energy Inverter)	56.000,00 €	56.000,00 €
Energy Inverter (Initial Investment)	14.000,00 €	14.000,00 €
Energy Inverter (Renewal Investments)	14.000,00 €	- €

The model accounts for a **portion of the total investment assigned to the inverter**. Unlike other technical equipment, inverters typically have a shorter estimated useful life compared to the project's overall duration. This **shorter lifespan** means that the inverters will need to be replaced once their useful life expires. Consequently, the manager must disaggregate the investment in energy production facilities, using the items listed in rows two through four of the table:

a. "**Facilities (Excluding the Energy Inverter)**": In this section, the manager must explicitly indicate the **amount invested in facilities** that **do not** pertain to the inverter. This amount should include the values corresponding to investments in machinery and technical installations for electricity production, including investments related to auxiliary or complementary components. For instance, if it is necessary to request a new Unified Supply Point Code (USPC) for the project, the **investment** needed to **obtain** the **USPC** would be included in this field.

b. "**Energy Inverter (Initial Investment)**": In this section, the purchase value of the inverter(s) incorporated into the project at the initial stage should be entered. The investment for renewal —referring to the eventual need to replace the initially acquired inverters upon reaching the end of their useful life— is excluded.

c. "**Energy Inverter (Renewal Investments)**": This section is for recording the cost of renewing the inverter(s) when their useful life ends, which will occur if the inverter's lifespan is shorter than the "**Project Time Horizon**". This section does not include the initial acquisition cost of the inverter(s) used at the start of the project.

In addition to the three investment categories related to facilities, the first row of the table requires the manager to specify the value of "**Establishment Costs**", defined according to the accounting concept of "Incorporation and Initial Establishment Expenses". Examples of expenses to be recorded here include costs for advisory and administrative management services, as well as legal, notary, or registry services essential for the formal establishment of the managing entity as a legal entity under applicable legislation.

For each of the items or rows in the "**Investment**" table, the manager should use two columns to provide different types of information.

The "**Complete Project Lifetime**" column captures the total investment required for each concept over the entire lifespan of the project, as specified in the "**Project Time Horizon (Years)**" table. In the specific case of **incorporation expenses ("Establishments Costs" field)**, the actual total value will be known regardless of the year of analysis. However, the investment required for the **replacement of the inverter** will be based on the estimate provided by the initiative manager, according to the information and forecasts available at the time of completing the table. If the replacement has already been made, the actual value of the investment will be known, and thus this amount should be indicated.

The "**Change in the Year (€)**" column reflects the change in each item's value during the fiscal year under review. It shows the difference between its value at the end of the current year and the value at the end of the previous year. The manager must respect the sign resulting from the calculation of this difference, indicating it in the table when it is negative (-).

5. PARTNERSHIP COMPOSITION

A key piece of information is the number of members or partners involved in the initiative. The main impact of the number of members on the model's operation concerns the individual participation coefficient. This coefficient will determine each member's share in both the investment and the energy generated, whether for self-consumption or surplus. Below is the table designed to record data related to the partners or members base:

Figure 6. Data Entry Tables: Partnership Composition

Partnership Composition	2025
Number of Partners	25,00
Average Annual Electricity Consumption of Each Partner (KWh)	3.532,92
Exogenous Percentage of Savings over Total Electricity Consumption (%)	100,00%

The "**Number of Partners**" should be entered as an integer in the first row of the table. This figure should represent the total number of members for the year, including both the residential and business segments. If the number of members has varied throughout the year, it is advisable to use the average monthly number of members. This average figure results from summing the number of members at the end of each month of the year and dividing the result by twelve, rounding down to the nearest whole number if the monthly average includes decimal figures.

The second row of the table records the "**Average Annual Electricity Consumption of Each Partner (kWh)**". The initiative manager should enter this value based on actual data for the year under review. To calculate this average consumption, the electricity consumption for all members over the year should be totaled and then divided by the number of members, as specified in the previous row.

The table concludes with a third row labelled "**Exogenous Percentage of Savings over Total Electricity Consumption (%)**". In this row, the manager should specify the percentage of energy saved, encompassing both self-consumed energy and energy either compensated or sold, relative to the total electricity consumption of the complete group of partners for the year under review. To ensure accurate calculation, all energy quantities should be measured in the same unit (e.g., kWh) and must correspond to the same membership base and time period (e.g., the entire year to be analyzed).

6. ENERGY PRODUCTION

A key consideration for the "**Energy Production**" table is that all data must be recorded in kWh and must pertain to the entire membership and the full annual period. The first row of the

table is designed for the manager to specify the total "**Energy Produced**" by the community initiative, regardless of its final usage.

To complement the information recorded in the "**Produced Energy (KWh)**" field, the table includes four additional rows where the total "**Energy Produced**" must be allocated across four possible destinations. These categories represent the various ways in which energy can be utilized. Real data should be provided for each of following categories:

a. "**Self-Consumed Energy (kWh)**": This field should record the energy allocated to partners or members and subsequently self-consumed by them.

b. "**Compensated Energy (kWh)**": When the economic regime of bill compensation for energy surpluses applies, this field will indicate the energy attributed to the partners or members that could not be self-consumed and was instead allocated for compensation, resulting in actual payment by the energy retailer. If a different economic regime applies to the surpluses, other than bill compensation, this field will have a value of zero.

c. "**Sold Energy (kWh)**": This field should show the amount of energy sold to the supplier under the applicable economic regime. If selling energy is not part of such regime, this field should be zero.

d. "**Energy Incorporated to the Grid Without Economic Remuneration (kWh)**": This field should display the energy produced that was fed into the electricity grid without receiving any economic compensation from the supplier.

The table related to "**Energy Production**" described in this section is shown below:

Figure 7. Data Entry Tables: Energy Production

Energy Production	2025
Produced Energy (KWh)	**89.320,00**
Self-Consumed Energy (KWh)	44.161,50
Compensated Energy (KWh)	44.161,50
Sold Energy (KWh)	0,00
Energy Incorporated to the Grid Without Economic Remuneration (KWh)	997,00

For the analysis tool to function correctly, it is crucial that the sum of the values recorded in sections "a" through "d" above aligns with the value specified in the "**Produced Energy (KWh)**" field.

7. ENERGY PRICES

The manager must define **three energy prices** in €/kWh in this table. If one or more of these prices fluctuated throughout the year, it is advisable to use an average value.

This average value can be obtained, for example, by summing the prices applied for each concept to each partner or member for each day of the year, and then dividing the total by the product of the number of days and the number of members. This calculation can be illustrated with an example: If we have the daily prices for each member, with 25 members and 365 days in the year under analysis, we would sum all the available daily prices and divide the result by 9,125, which is the product of 25 members multiplied by 365 days.

The following table, titled "**Energy Prices**", presents price levels that, at the time of writing this document, are considered reasonable:

Figure 8. Data Entry Tables: Energy Prices

Energy Prices	2025
Electricity Market Price (€/KWh)	0,100 €
Price Applied to Compensated Electricity (€/KWh)	0,050 €
Price Applied to Sold Electricity (€/KWh)	0,075 €

The required prices to be specified, according to the items in the table above, are the following ones:

1. "**Electricity Market Price (€/kWh)**": This price is used to value the energy consumed by partners or members, including both self-consumed energy and energy purchased from the supplier.
2. "**Price Applied to Compensated Electricity (€/kWh)**": This price represents the unit value of the energy allocated to the partners or members which is used for bill compensation and is also effectively remunerated by the supplier.
3. "**Price Applied to Sold Electricity (€/kWh)**": This price is used to value the energy sold to the supplier when this is the applicable economic regime.

8. OTHER INCOME PERCEIVED BY THE PARTNERS

When quantifying income items, it is essential to distinguish between the entity and its members or partners, as the income items relevant to each will differ. This table specifically captures two income items that cannot be determined from the information provided in previous tables. Therefore, the energy initiative manager must directly specify these values.

From the partners' perspective, their income essentially corresponds to the value of the energy allocated to them, based on their percentage of participation in the initiative. This value is directly calculated by the assessment tool, as needed for the preparation of documents to be presented to the manager, based on the economic value derived from the produced energy. Additionally, the "**Other Income perceived by the Partners**" table presented below includes two rows where the community initiative manager can specify the actual annual value, in Euros, corresponding to all partners for the following two income categories:

- "Income Deriving from Free-of-Charge Services provided to the Partners by the Energy Initiative Manager-Entity'
- "Other Incomes perceived by the Partners from the Energy Initiative Manager-Entity'

Figure 9. Data Entry Tables: Other Income perceived by the Partners

Other Income perceived by the Partners	2025
Income Deriving from Free-of-Charge Services provided to the Partners by the Energy Initiative Manager-Entity	- €
Other Incomes perceived by the Partners from the Energy Initiative Manager-Entity	- €

9. DISCOUNT RATE APPLICABLE TO THE CASH FLOWS

In this last table of the "**General Real Data (Obs.)**" Excel sheet, the manager is requested to provide a single piece of information: the **discount rate** that the tool will use to **update** certain monetary values and obtain their corresponding "present values". This will generate various indicators, including the "Present Value of Cash Flow", which is reported in the Excel sheet displaying the Cash Flow Statement, found in the workbook for the economic assessment tool titled "**Cash Flow Statement**".

The concept of "**present value**" should be understood as the hypothetical monetary flow that, in the initial year, would be equivalent in economic terms to a specific real flow actually obtained in a given year —for example, the fifth year of the initiative's operation. Here, the "initial year" refers to the start of the first year of activity or, in other words, a hypothetical "year zero" immediately preceding the first year of operation.

The discount rate to be specified in this field is at the discretion of each manager, as there is no universally correct value for this parameter. A reasonable alternative could be to use the average annual inflation rates from the starting year up to the year under analysis. A simpler approach for determining the discount rate could be to use the most recent available annual inflation rate or one that is deemed reasonable. A reasonable inflation level should be close to 2% per year. However, the discount rate should not be lower than 3%, as it must account for the inherent uncertainty regarding the actual realization of the cash flows and their true value.

Below these lines, it is the field for the manager to indicate the "**Discount Rate**", including a value that, at the time of writing this text, is considered quite appropriate for the mentioned rate.

Figure 10. Data Entry Tables: Discount Rate Applicable to the Cash Flows (%)

Discount Rate Applicable to the Cash Flows (%)
3,26%

As a percentage or proportion, the discount rate will always take a value between 0% and 100%. A value of 0% implies that the monetary flow obtained in a given year is exactly equivalent to the same monetary flow (the same amount in Euros) obtained in the initial year. This represents the least demanding scenario, as it values amounts expected in the future as if they were received in the present. Starting from this minimum level, the higher the chosen discount rate, the greater the penalty applied to the economic flows expected in the future. Naturally, for the same discount rate, the valuation penalty applied will be greater the further away the future flow is from the initial year.

Observed Distribution of Electricity Consumption among Partners

5

In order to have precise data for analyzing the results of the community energy initiative under the hypothesis of heterogeneous participation proportional to the energy consumption of its members or partners, it is essential for the manager to indicate the **average monthly electricity consumption** of **each member** for the year to be analyzed. For each member, this average consumption will be calculated by summing their electricity consumption, expressed in kWh, over all billing periods related to the year in question, and then dividing the total by twelve.

Once the above has been completed, the manager must have as many average monthly consumptions as there are partners or members in the energy initiative for the year in question. Each of these average monthly consumptions, in kWh, should be transferred to the second column —labeled "**Average Monthly Electricity Consumption of Each Partner (kWh)**"— of the table presented in the Excel sheet titled "Partners Real Data". Below is a partial view, limited to the first 10 members of a hypothetical energy initiative.

Figure 11. Partners Real Data: Average Monthly Electricity Consumption of Each Partner (kWh)

Partner ID Number	Average Monthly Electricity Consumption of Each Partner (KWh)	Participation Rate (%)
1	501,00	7,5%
2	294,00	4,4%
3	126,00	1,9%
4	522,00	7,8%
5	109,00	1,6%
6	266,00	4,0%
7	461,00	6,9%
8	195,00	2,9%
9	142,00	2,1%
10	140,00	2,1%

As shown in the provided image, each row of the table corresponds to a partner or member of the initiative, with a maximum of 25 members for whom this data can currently be recorded. The first column identifies the member for whom the average monthly consumption will be reported, and its content cannot be modified. The third column is purely informational and displays the resulting participation coefficient for each partner or member, based on the distribution of monthly consumptions reported by the manager at any given time. The last row of the table shows the total average monthly consumption for all members combined, according to the data provided in the table. This row cannot be modified by the manager.

Observed Electric Bill Costs

6

The Excel workbook available to the manager, concerning the initial data used in the calculations, includes a sheet related to the costs of the electricity bill, titled "**Electric Invoice Actual Costs**". These costs should be defined by the manager of the community energy initiative, based on the values actually recorded by them throughout the analyzed year, as described below.

This data will be used to simulate bills for a hypothetical typical member, both before and after joining the community energy initiative. This includes aspects such as applicable taxes on the member's electric bill, in terms of both general indirect taxation (VAT) and specific indirect taxation (Electricity Special Tax).

In the table titled "**Electricity Power Agreed by Each Individual Partner**", the contracted power should be specified in kW for each relevant time period (Period 1, P1, and Period 2, P2, representing peak and off-peak hours, respectively). Additionally, the first table in this Excel sheet should include the applicable prices for the power term for both periods, expressed in euros per kW of installed power per day. If only one time period is used for calculating the power term, the manager should specify the contracted power under P1 and provide the corresponding €/kW per day cost in that row. In this case, zero values should be entered for both the power and unit cost fields related to P2. It is assumed that the energy term will be determined by the market price of electricity listed in the Excel sheet titled "**General Real Data**".

Next, the table "**Electricity Power Agreed by Each Individual Partner**" is shown, filled out assuming a contracted power of 3.3 kW for both time periods (P1 and P2).

Figure 12. Electric Invoice Actual Costs: Electricity Power Agreed by Each Individual Partner

Electricity Power Agreed by Each Individual Partner	KW
Power Term (Peak Period, Period 1)	3,30
Power Term (Valley Period, Period 2)	3,30

The tax rate specified by the manager in the "Electricity Special Tax (Temporary Reduced Tax Rate)" box, located in the first table at the top of the Excel sheet, will only apply if the manager selects "Yes" from the dropdown list in the field titled "**Reduced Tax Rate for the Electricity**

Special Tax? (Yes / No)". If "No" is selected, the amounts payable for the Special Tax on the Electricity for the simulated "typical" electricity bills, will be calculated using the usual tax rate, which the manager must enter in the "Electricity Special Tax (Ordinary Tax Rate)" field within the first table.

Next is the field designated for making the selection mentioned in the previous paragraph regarding the tax rate of the Special Tax on Electricity:

Figure 13. Electric Invoice Actual Costs: Reduced Tax Rate for the Electricity Special Tax? (Yes / No)

Reduced Tax Rate for the Electricity Special Tax? (Yes / No)
Yes

The last three rows of the first table in the Excel sheet, which defines the electric bill cost assumptions, allow the manager to specify the **VAT tax rates applicable** during the considered financial year. These rates, expressed as percentages, applicable in the economic year under consideration, are those that could be applied to the billing of the electricity supply.

A distinction is made between the standard rate, also referred as ordinary tax rate, which has traditionally applied to electricity in the Spanish tax system, and a reduced rate of 10%, intended for electricity and implemented at certain times in Spain to lower consumers' bills. Additionally, there is a specific super-reduced (or extra-reduced) tax rate for electricity, which has historically been absent from the Spanish tax system. This rate, set at 5%, has been applied as an exceptional temporary fiscal stimulus measure.

It is important to highlight that, in each billing period, generally only one VAT rate will be applicable. In any case, the economic assessment tool will only consider one VAT rate from the three that the manager is asked to specify, assuming that this rate remains stable throughout the entire annual period. The fact that the manager can define each of the three VAT rates detailed in the previous paragraph allows the tool to adapt to any changes in the Spanish legislative framework that may result in variations to the applicable VAT tax rate for electricity.

The table titled "**VAT Tax Rate**" provides the manager with a dropdown list, offering three options to specify the VAT rate applicable to electricity consumption:

- VAT (Ordinary Tax Rate)
- VAT (Reduced Electricity Tax Rate)
- VAT (Extra-Reduced Electricity Tax Rate)

The table for selecting the applicable VAT rate would appear as shown in the illustration below, assuming the selected rate is the standard rate for this indirect tax.

Figure 14. Electric Invoice Actual Costs: VAT Tax Rate

VAT Tax Rate
VAT (Ordinary Tax Rate)

It is important to highlight the technical nature of certain issues that the manager must define regarding the costs of the electricity bill. Some of the implied concepts can be complex, and understanding their specific meanings in this context may not be straightforward.

Furthermore, it should be noted that the cost structure of the electricity bill used to design the fields for the manager to input observed electricity costs is based on the typical items found in an electricity bill in Spain. Because the electricity sector in Spain is heavily regulated, this combination of cost components is significantly influenced by the relevant regulatory framework.

In light of the considerations made in the previous two paragraphs, a combination of possible values that could be considered reasonable, at the time of writing this document, is provided below for illustrative purposes. This combination is intended to define the calculation parameters for the electricity bill of a typical residential consumer.

Figure 15. Electric Invoice Actual Costs: Reasonable Values suggested for the Main Items Involved

Concept	Value	Unit
Power Term (Peak Period, Period 1)	0,10	€/KW and Day
Power Term (Valley Period, Period 2)	0,03	€/KW and Day
Social Bonus Financing	0,0385	€/Day
Electricity Special Tax (Ordinary Tax Rate) (%)	5,11%	% s/ Sum of Previous Concepts
Electricity Special Tax (Temporary Reduced Tax Rate) (%)	0,50%	% s/ Sum of Previous Concepts
Electricity Meter Rental	0,0268	€/Day
VAT (Ordinary Tax Rate)	21%	% s/ Tax Base (Sum of Previous Concepts)
VAT (Reduced Electricity Tax Rate)	10%	% s/ Tax Base (Sum of Previous Concepts)
VAT (Extra-Reduced Electricity Tax Rate)	5%	% s/ Tax Base (Sum of Previous Concepts)

Results derived from the Use of the Proposed Tool

7

1. PERSPECTIVE OF THE ENTITY

The proposed assessment tool offers the entity, in the Excel sheet titled "**Operating Account**", its effectively observed **profit and loss account** for each year, summarizing the main income sources and key cost components for each year. This overview offers a comprehensive understanding of the economic results achieved during the analyzed financial period and highlights the factors that most significantly influence these results. Below (Figure 16) is a partial view of this document, as it would be generated by the economic assessment tool in a hypothetical scenario.

The tool also provides an estimate of the projected cash flows for the project and for its partners or members, detailed in the Excel sheet titled "**Cash Flow Statement**". This estimate is based on the results obtained from the income statement, to which the necessary adjustments are automatically applied. The **Cash Flow Statement** prepared by the calculation model breaks down the project's cash flow for the relevant year into the following **components**:

- Operating cash flow (or cash flow from operating activities)
- Cash flow from investing activities
- Cash flow from financing activities

This presentation clearly distinguishes the net cash flows generated or consumed by the entity in the analyzed financial period due to its core activities —operating activities— from the cash flows related to investments and those arising from the choice of a specific financing structure.

The following (Figure 17) is the structure of the "**Cash Flow Statement**", illustrating how this document would be generated by the assessment tool for a hypothetical scenario where 2025 is considered the year under analysis, marking the project's first year of activity.

An interesting feature of the assessment tool is that, specifically for the Cash Flow Statement, it allows the manager of the community initiative to choose whether to include the value of the energy produced as income that generates cash flow. To facilitate this choice, a field titled "**Inclusion of Value of Energy Produced as Income (...)**" is provided in the **"Cash Flow Statement"** Excel sheet. This field allows the manager to select from a dropdown list either "Yes", if they wish to consider the value of energy produced for self-consumption or compensation as an economic cash flow (pseudo-monetary) in the calculation, or "No" if they

prefer not to include it. If the "No" option is selected, an adjustment is made to the operating result, excluding the energy value from the Operating Cash Flow. Conversely, if inclusion is chosen, this adjustment is not applied, and, additionally, the transmission to the partners of the value of the generated energy is reflected in the Financing Activities Cash Flow as a distribution of dividends in kind to the alluded partners or members of the initiative.

Figure 16. Operating Account

INCOME	2025
Total Income from Energy Produced	***6.699,00 €***
Membership Fees	2.470,47 €
Income Deriving from Other Complementary Services provided to the Partners	- €
Total Income from Membership Fees and Other Complementary Services	***2.470,47 €***
Capital Grants Transferred to the Financial Year Result (Annual Attribution)	1.680,00 €
Total Operating Income	**10.849,47 €**
EXPENSES	**2025**
Materials and Services Purchases	***- €***
Human Resources Expenses	***- €***
Rentals (Land and Others)	480,00 €
Facilities Repairing and Maintenance	600,00 €
Profesional Services (Notaries, Lawyers, Registry Officers, Economists, Advisors, etc.)	- €
Transportation Expenses	- €
Insurance Premiums	1.400,00 €
Banking Services	240,00 €
Advertising, Propaganda & Public Relations	- €
Supplies	360,00 €
Other Services	450,00 €
External Services Expenses	***3.530,00 €***
Other Taxes (Different from the Corporate Income Tax or the Value Added Tax)	10,47 €
Other Losses Arising From Ordinary Corporate Operation Activities	50,00 €
Total Operating Expenses	**3.590,47 €**
EBITDA (Earnings Before Interests, Taxes, Depreciations and Amortizations)	**7.259,00 €**

Figure 17. Cash Flow Statement

	1
Concepts	**2025**
Operating Cash Flow	
Operating Result	7.259,00 €
(-) Self-consumed and Compensated Energy Revenues	**- €**
(+) Amortization of the Investment	- €
(+) Net Change in Working Capital (Estimated in 1 Month of Operating Expenses)	299,21 €
(-) Allocation of Grants to Profit or Loss for the Year	-1.680,00 €
(-) Financial Income	- €
(+) Financial Expenses (Interest on Debt)	- €
(-) / (+) Other Non-Cash Revenues and Expenses	
(=) Operating Cash Flow or Cash Flow from Operating Activities [A].	**5.878,21 €**
Cash Flow from Investing Activities	
(-) Investment Payments Made	-70.150,00 €
(+) Proceeds from Divestitures Made	
(=) Cash Flow from Investing Activities [B]	**-70.150,00 €**
Cash Flow from Financing Activities (Shareholders' Equity and Debt)	
(+) Issuance of Equity Instruments (Shares or Participations)	70.150,00 €
(-) Amortization of Equity Instruments (Shares or Participations)	- €
(+) Grants Received	42.000,00 €
(+) Loan Concession	- €
(-) Loan amortization	- €
(-) Debt Remuneration Payments (Loan Interest)	- €
(-) Remuneration Payments for Equity Instruments (Dividends)	-6.699,00 €
(=) Cash Flow from Financing Activities (Equity and Debt) [C]	**105.451,00 €**
Free Cash Flow [A+B+C]	41.179,21 €
Project Cash Flow [A+B]	-64.271,79 €

Cash Flow from Partners	*47.878,21 €*
Present Value of Cash Flow	46.368,90 €
Present Value Cash Flow Project	-62.245,70 €

It should be clarified that while the "**Discount Rate (...)**" box in the "**Cash Flow Statement**" Excel spreadsheet displays the rate being applied to discount the cash flows, this field directly pulls the value entered by the initiative's manager from the corresponding table in the "**General Real Data (Obs.)**" Excel sheet. This latter sheet is designated for inputting data used

by the assessment tool and has been described previously. Therefore, the purpose of the field in the "**Cash Flow Statement**" sheet is to remind the manager of this data and, for this reason, it cannot be modified.

2. PERSPECTIVE OF THE ENTIRE GROUP OF PARTNERS/ MEMBERS

For the community initiative partnership base as a whole, we assume a uniform participation percentage among all partners. This percentage is based solely on the number of partners involved in the entity. Consequently, for a group of 25 partners, the individual participation percentage for each of them would be exactly 4%, ensuring that the sum of all individual shares totals exactly 100%.

Considering the point made in the previous paragraph about the proportion of individual participation, and noting that this proportion remains constant over time, it becomes quite straightforward to determine the maximum amount of generated energy that can be allocated to each partner during any given time period.

Once the energy attributable to each partner is established, the allocation for self-consumption, compensation, or sale to the energy supplier is calculated based on proportions derived from real data reported by the manager. This data includes the volumes of energy produced and their distribution among various uses, such as self-consumption, compensation, sale, or grid injection without economic compensation.

Since we know the maximum proportion of savings each partner can achieve on their kWh consumption —provided explicitly by the manager— this, combined with the partner's average monthly electricity consumption, allows us to determine the amounts of energy that are self-consumed, compensated, or, if applicable, sold.

The energy that will actually be purchased from the retailer is calculated by multiplying the partner's total electricity consumption by (1-x), where x represents the proportion of energy that is self-consumed relative to the partner's total energy usage.

All of the above is based on the fact that, in any given year and for any month within that year, the amount of energy allocated to each partner can never exceed the result of applying the partner's participation percentage (for example, 4% if there are 25 partners) to the total amount of energy effectively designated for each purpose during the year under analysis, as determined by the actual data provided by the manager.

Once the monthly electricity consumption of each partner is known, a standard electricity bill is calculated for a domestic consumer as if the consumer were not part of any community energy initiative. In parallel, the amount of that same bill is calculated under the assumption that a community electricity production initiative exists. In this case, the calculation takes into account two factors: first, the energy self-consumed, and second, the amount credited to the partner's bill, whether through compensation for surplus energy or from the sale of that energy, if applicable.

This means that a "**profit and loss statement**" **can be generated**, for both the entire group of partners and each individual partner, concerning their membership in the community initiative. The profit and loss statement for the entire group is presented for the specific year under analysis in the Excel sheet titled "**All Partners Accounts**", as shown in the accompanying illustration.

Figure 18. All Partners Accounts

	1
	2025
Revenues from Self-Consumed Energy	4.466,00 €
Revenues from Excedentary Energy Subject to Energy Compensation	2.233,00 €
Revenues from Excedentary Energy Sold	- €
Income Deriving from Free-of-Charge Services provided to the Partners by the Energy Initiative Manager-Entity	- €
Other Incomes perceived by the Partners from the Energy Initiative Manager-Entity	- €
Total Revenues Derived from the Community Energy Initiative Membership	**6.699,00 €**

	1
	2025
Extraordinary Initial Membership Fee (Only for the First Year)	- €
Membership Fees	2.470,47 €
Charges for Complementary Services Provision to Partners	- €
Total Expenses Deriving From Community Energy Initiative Membership	**2.470,47 €**

Annual Result of the Collective Membership of Partners in the Community Energy Initiative	**4.228,53 €**
Present Value of the Annual Result of the Partner Membership	*4.095,23 €*

At the same time, the **profit and loss statement** for **each individual partner** for the relevant year —assuming that all partners behave identically and have the same level of participation in the energy initiative— is provided in the Excel sheet titled "**Individual Partner Account**". In each of these two "partners profit and loss statements" —collective and individual— there are three main **sources of income**:

1. The **economic value of the energy** produced that can be attributed to the partners, either in full or proportionally to each individual partner. This economic value consists of the following two components:

   a. The economic value of the energy designated for self-consumption by the entire group of partners or, if applicable, by each individual partner.

   b. The economic value of the energy attributable to the partners that is not used for self-consumption and is therefore directed to the grid, either through the on-bill compensation mechanism or through its sale to the retailer, depending on the applicable economic framework for the surplus energy.

2. Any income in kind that the partners may have received in the analyzed year in the form of **free services provided** to them by the managing entity of the community energy initiative.

3. Alongside these incomes from services, a line item labelled "**Other Incomes perceived by the Partners from the Energy Initiative Manager-Entity**" is also included to reflect the **total of any other economic receipts** not covered by the previous categories that the partners have received from the managing entity.

Regarding the **expenses incurred by partners** due to their membership in the community, the core of these expenditures consists of the fees actually paid by the members to the entity. These fees are reflected in the two items specified below:

1. "**Extraordinary Initial Membership Fee** (Only for the First Year)", representing any additional amount required from the partners as an Extraordinary Contribution, applicable exclusively in the first year of the initiative. This amount is zero in subsequent years.

2. "**Membership Fees**" which includes the ordinary fees paid by the partners during the year under review, resulting from their membership in the community energy initiative. These fees are designed to ensure that the managing entity has adequate funding to cover its operational and administrative expenses.

In addition to the profit and loss statements for the entire group of partners and for each individual partner —based on the premise of identical participation and behavior among all partners—, the Excel sheet "**Indiv. Invoices Comparison**" provides a comparative analysis of the average monthly electricity bill for a hypothetical typical partner. This analysis takes into account the average electricity consumption of each partner, specified for this purpose by the manager of the initiative in the "**Partnership Composition**" table within the "**General Real Data (Obs.)**" Excel sheet. It compares the bill when this consumer is part of the initiative against what the average monthly bill would be for the same typical consumer if they were not part of any energy initiative.

Below is a partial view of the Excel sheet titled "**Indiv. Invoices Comparison**", where they can be seen some of the tables that the evaluation tool would prepare for a hypothetical case -using "real" or "observed" data that are considered reasonable, despite being fictitious:

Figure 19. Individual Invoices Comparison

Invoiced Concept	Without a Community Energy Initiative (€)	With a Community Energy Initiative (€)
Power Term (Peak Period, Period 1)	10,04 €	10,04 €
Power Term (Valley Period, Period 2)	3,01 €	3,01 €
Energy Term (Consumption)	29,44 €	14,72 €
Social Bonus Financing	1,17 €	1,17 €
Subtotal (Sum of Previous Concepts)	43,66 €	28,94 €
Electricity Special Tax (Temporary Reduced Tax Rate) (%)	0,22 €	0,14 €
Electricity Meter Rental	0,81 €	0,81 €
VAT Tax Base (Sum of Previous Concepts)	44,69 €	29,90 €
VAT (Temporary Reduced Tax Rate)	9,39 €	6,28 €
Total Invoice Amount (VAT Tax Base + VAT Ammount Payable)	54,08 €	36,18 €

The tables include all key components of a typical electricity bill in the Spanish market, calculating the differences between bills with and without the community energy initiative. These differences are presented both in absolute terms and as a percentage of the total original bill (without the initiative).

In particular, the results provided to the manager reveal the dual source of savings for the consumer resulting from becoming a member of the community initiative:

1. On one hand, the **savings** reported for the partner **on** their **bill** are determined by the difference between the typical individual bill without the community initiative and the corresponding bill when the initiative is in place.

2. On the other hand, the **amount** corresponding to the **surpluses** is added to the previous savings. This amount may come from compensation for energy that is not self-consumed or from the income generated by the sale of that energy when this is the applicable economic regime. This assessment is based on the distribution of produced energy among various possible uses (self-consumption, compensation, sale, or incorporation into the grid without effective economic compensation). This distribution is derived from the quantities of energy actually allocated

during the analyzed year to each of these "destinations", as indicated by the initiative manager in the "**Energy Production**" table located in the Excel sheet titled "**General Real Data (Obs.)**".

The development presented thus far highlights that the results by the tool offer a comprehensive view of the overall **outcome for the entire group of partners** in the year under review, as well as insights into **each individual partner's** results from **two** distinct **perspectives**. The first perspective focuses on attributing the relevant economic values to the partners, drawn from the accounts of the managing entity. The second perspective is based on a comparison of the monthly electricity bills of individual typical consumers.

The relative weight of these results compared to the original electricity bill for each partner measures the net savings or final impact that hypothetical membership in the energy initiative would have produced for each partner, assuming uniform participation and behavior among partners.

3. PERSPECTIVE OF INDIVIDUAL PARTNERS (HETEROGENEOUS PARTICIPATION PROPORTIONAL TO CONSUMPTION)

In the results presented in the Excel sheet titled "**Partner Accounts (Heterogeneous Participation)**"—expressed as "**Partner Acc. Heterogeneous P**."— it is assumed that each partner's relative participation is based solely on their electricity consumption as a proportion of the total consumption of all partners. The proposed model distributes monthly electricity consumption among various partners participating in the initiative, using data provided by the manager in the Excel sheet titled "**Partners Real Data**". This distribution details the kWh allocated to each partner on a monthly basis.

This section starts with a distribution of electricity consumption in kWh among the partners, assumed to be based on actual data from their electricity bills for the year under analysis. From this distribution, the participation percentage for each partner is determined, based on the assumption that this proportion will remain stable for each partner throughout the project's duration. However, as previously mentioned, the analysis is limited to the year for which the actual data has been provided by the manager.

Based on this set of individual participation percentages, the energy attributable to each partner is calculated in a manner similar to that described in section 2 above. By also knowing the distribution of energy between self-consumption and compensation —or, if applicable, sale— and, consequently, the amount of energy which continues to be purchased from the energy retailer company, it is possible to determine the value of the energy that each partner allocates for self-consumption in the year under analysis. Additionally, it allows us to ascertain the economic compensation each partner would receive for the energy attributed to them that is not self-consumed and is fed into the grid, whether through compensation on their bill for the excess energy or through its sale.

Once the **income** derived from each partner's **savings on the electricity bill** and the **compensation or sale of energy** has been obtained, the same **regular —or "ordinary"— and extraordinary membership fees** are deducted from this income for each partner, based on their average monthly value projected for the year under analysis, which is automatically determined by the tool itself. Additionally, costs associated with "Other Monthly Amounts Paid by the Partner to the Community Energy Initiative Manager-Entity (…)" are also included as **costs for the individual partner**. It is understood that the membership fees are the same for all partners, even though each partner's participation rate within the initiative may vary as different individual partners are being considered.

As illustrated, the structure of the account per partner generated by the economic evaluation tool, under the assumption of heterogenous participation proportional to each partner's electricity consumption, is similar to that of the account created in cases of homogeneous participation, both at the collective level for all partners and individually for each partner. The **main differences** that should be highlighted include the following:

- In the case of heterogeneous participation, all amounts are reported based on their corresponding **monthly values** to enhance the diversity of the results provided by the analysis tool. It is assumed that each value within the same year is evenly distributed, with the monthly value equal to the annual value divided by twelve.
- The "**Total Positive Economic Impact**" in this case is not derived from the managing entity's profit and loss statement. Instead, it is calculated by simulating the average monthly bills for each individual partner and, based on such hypothetical bills, the respective differences between each partner's bills —with and without the community initiative— are then obtained. This way, the calculation of the economic impact includes, on one hand, the **reduced amount** payable **on the partner's electricity bill**, resulting from their decreased energy consumption due to self-consumption and, on the other hand, an estimate of the monthly **income** they would have received in the analyzed year from the **compensation or sale of surplus energy** that, not being self-consumed, was fed into the electrical grid.

In this way, the "**Expected Monthly Net Result (...)**" arising, for each partner, from their membership in the community is obtained. This net result is expressed as the difference between the positive economic impact achieved and the total costs incurred. This result allows the manager to identify the **asymmetries among partners** in the **proportion of net savings** achieved **relative to** their **initial electricity bills**, due to the heterogeneity in the distribution of consumption and, consequently, also in the participation shares. Precisely, asymmetries occur because this heterogeneity is combined with the uniformity of the fees paid by the partners to the entity, which represent their main cost item in their respective individual "profit and loss statements".

In the illustration presented below, it is possible to appreciate the structure of the account generated by the evaluation tool, presented on a monthly basis, to assess the results of participation in the community initiative for each partner. The numerical data corresponding to five partners are shown in a hypothetical scenario, where it is assumed that "observed" data from the first year of operation of a community energy project are available.

Figure 20. Partner Account (Heterogeneous Participation Rates)

Partner ID Number	1	2	3	4	5
Concept					
Total Positive Economic Impact (Monthly) (Savings Achieved on the Electricity Invoice and Revenues from Excedentary Energy Compensation or Sale)	**42,99 €**	**25,23 €**	**10,81 €**	**44,79 €**	**9,35 €**
Extraordinary Monthly Membership Fee for the First Year -€ per Month-	- €	- €	- €	- €	- €
Ordinary Monthly Membership Fee (All Years) -€ per Month-	8,23 €	8,23 €	8,23 €	8,23 €	8,23 €
Other Monthly Amounts Paid by the Partner to the Community Energy Initiative Manager-Entity -€ per Month-	- €	- €	- €	- €	- €
Total Monthly Costs Assumed by the Partner, Deriving from the Membership in the Community Energy Initiative (€)	**8,23 €**	**8,23 €**	**8,23 €**	**8,23 €**	**8,23 €**
Expected Monthly Net Result of the Community Energy Initiative Membership for the Partner (€)	**34,75 €**	**16,99 €**	**2,58 €**	**36,55 €**	**1,12 €**
Expected Monthly Net Result of the Community Energy Initiative Membership for the Partner (% on Initial Invoice Amount)	**43,9%**	**31,4%**	**7,7%**	**44,7%**	**3,5%**

Conclusions

8

The present document outlines the objectives, characteristics, functioning, structure, and results of a calculation tool based on Microsoft Excel software application, integrated into the Office suite. This tool has been designed and developed to facilitate the ***ex-post* evaluation** of the **economic implications** arising from the operation of an already active **community-owned electricity generation initiative**. This **economic assessment** is essential for **analyzing** the **results obtained**, and conclusions from such analysis should inform future strategic and management decisions aimed at ensuring the project's **long-term viability**.

Community initiatives for electricity production are supported, in the juridic field, by relatively recent EU legislation that is still pending full transposition into the national laws of many member States. This legislation encourages active citizen involvement in ownership and decision-making related to electricity market participation, thereby fostering the aforementioned community projects. Key legal frameworks, such as the "**Clean Energy Package (CEP)**", serve as crucial instruments for achieving climate and energy policy objectives set at the European level for 2030, ultimately paving the way for a carbon-neutral economy in the EU by 2050.

The calculation tool presented in this document performs precise calculations based on a selection of **actual data** corresponding to the economic metrics effectively observed in the operation of a community energy initiative during a specific year. It presents the resulting information in a visual and concise manner, offering users a set of **summary documents** that facilitate the analysis of results obtained in the year under study while helping to understand their potential causes and implications. The initial data must be provided by the initiative's manager, who will fill in the relevant sheets of the Excel workbook supporting this tool.

In addition to this calculation tool, another model has been developed, also based on an Excel workbook. This workbook comprises a series of data input sheets and results visualization sheets, designed to assist current or prospective managers of community electricity production initiatives in **drafting a Viability Plan**. This plan serves as a suitable instrument for the *ex-ante* evaluation of the economic sustainability of a proposed future project, prior to deciding on its actual implementation.

As previously noted, the effectiveness of these two tools in supporting economically significant decision-making hinges on their **accessibility** to (potential) managers. Consequently, to ensure such accessibility, a clear and simple communication and dissemination strategy has been established, with public access to the tools through an Internet website being a key element of this approach.

Furthermore, the two Excel workbooks that underpin these solutions for planning and decision-making in community project management are designed to be dynamic resources. They will undergo **continuous review, adaptation, and enhancement** to ensure they progressively meet their intended objectives in a more effective and comprehensive manner. To facilitate this process, the Wind Observatory of Galicia (OEGA, according to its Spanish acronym) provides an email address for all interested parties, allowing them to submit inquiries, suggestions, or any other feedback related to these resources: observatorio.eolico@uvigo.gal

Observatorio Eólico de Galicia