Strategic Plan for the photovoltaic installation for self-consumption for AYMAR S.A.U.

Applicant company: AYMAR, S.A.U.

NIF: A08135444

Location: Carretera Comarcal C-35 Km 58, 08470 SANT CELONI

Representant: JAVIER AYMAR CORTINA

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Subsidies for self-consumption and storage of renewable energy, and for renewable thermal systems in the residential sector under RD 477/2021.

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1 Applicant data and installation data.

1.1 Identification of the aid applicant.

Company name	AYMAR, S.A.U.
Tax ID number	A08135444
Address	Carretera Comarcal C-35 Km58
Locality	Sant Celoni
Postal Code	08470
CUPS	ES0031405134253001TQ

1.2 Installation Data.

Address	Carretera Comarcal C-35 Km58
Locality	Sant Celoni
Province	Barcelona

1.3 Incentive program in accordance with the regulatory bases of RD 477/2021.

Incentive Program	2

2 Strategic plan.

2.1 Origin of the components of the planned installation.

The list of the main equipment and information about the manufacturing site that makes up the facility are:

Photovoltaic Modules

820 units of the Jinko brand, Jinko Tiger Pro 60HC model of 460Wp with a total installed power of 377.2 kWp.

The origin of the equipment is the manufacturing plant that the Jinko brand has in China, imported by the supplier SACLIMA S.L.

Structures

A prefabricated structure from Fisher has been planned for the installation of the photovoltaic panels.

This structure is made of aluminum with stainless steel rivet fasteners and would be attached to the existing cover.

The origin of the material is EU.

Inverters

The photovoltaic inverters chosen to carry out the conversion from direct current (DC) to alternating current (AC) are 3 Huawei SUN2000 100KTL-M1 three-phase inverters, with a nominal power of 100 kW.

They have advanced management and data capture software to be able to monitor production, installation configuration and guarantee the operation of the photovoltaic field in optimal conditions.

They are Chinese-made equipment and imported by the supplier SACLIMA.

2.2 Environmental impact of the components of the installation.

All construction elements will be recyclable and will not have any reaction or impact on the environment. As far as possible, the elements and materials required in the construction phase will follow the same principle.

The waste generated on the site (plastics, cardboard, etc.) will be collected and deposited in the corresponding landfills, in accordance with the provisions of current legislation on waste.

No debris will be generated during the installation of the components.

It should be borne in mind that the photovoltaic plant has an average life of about 30 years and that, when it is removed, all the elements will be recyclable.

The photovoltaic installation for self-consumption will contribute significantly to the reduction of polluting emissions into the atmosphere and savings in oil consumption. This installation will represent an annual saving in CO2 emissions of 198.73 Toe.

The environmental impact of the facility's main equipment in its manufacture is described below:

Photovoltaic modules

The main raw material used in the design of photovoltaic cells is silicon. It's found in abundance in the Earth's crust, and for good reason, it's the second most common resource after oxygen.

Silicon is extracted from silica contained in some minerals, including quartz. Silica mining takes place in 23 producing countries around the world.

Aluminum is used for the subsequent contact of photovoltaic cells, in the frame and structure of solar panels, but also in certain parts necessary for the operation of the inverter. Silver is used in the electrodes at the front of cells.

Mining, even when it respects environmental constraints, emits dioxide, disfigures landscapes, often weakens the fauna and flora of the environment and creates new access routes, as well as irreversibly depleting the soil.

Once the raw materials are extracted, the quartz is transformed into electronic-grade silicon, i.e. silicon with a purity of more than 99%. This process involves heating quartz in a furnace at high temperatures and making it react with various chemicals. This high heat and the combination of various materials from different sources make high-efficiency panels expensive to produce from an energy point of view.

For example, to produce one ton of silicon, approximately 2,900 kg of barracks and 12,000 kWh of energy are needed.

In addition, to produce solar-grade silicon, processing often involves hazardous chemicals. Depending on the solar panel manufacturer, these chemicals may or may not be disposed of properly: spilled or recycled.

Other items and equipment

The existence of polluting sources related to the production of PVSE can be pointed out, even if they are not due to the production of solar panels. This contamination comes from the manufacture of equipment such as inverters, regulators, support structures, cables and especially accumulators. Some of these systems are necessarily present in all ESFV installations, thus making the environmental analysis dependent on the type of installation considered.

Summary

The environmental impact of photovoltaics is grey energy, i.e. the energy needed for the life cycle of the solar panel: material extraction, production, transport, installation, maintenance and recycling of the panels.

It is considered that it takes 1 to 5 years, depending on the amount of sunlight, for a photovoltaic system to produce as much energy as it takes to manufacture it.

The production of solar panels is polluting and leaves its ecological footprint on the planet. However, when it comes to establishing an ecological balance over time, the solar panel greatly compensates for the negative impacts inherent in its manufacture.

2.3 Quality or durability criteria used in the selection of components.

The evaluation criteria used to select the equipment listed in Table 1 are based on the manufacturer's warranty and experience.

Photovoltaic Modules

The Tier1 list allows us to identify which solar modules are currently the best-selling and most solvent on the market. The manufacturer Jinko is part of this list, as reported in the Bloomberg publication.

In addition, its performance figures and the panels installed so far have given a very satisfactory result in terms of quality and reliability.

The manufacturer's warranty is 12 years for the product and 25 years for production with a guaranteed degradation of 0.6% linear.

Structures

The Fischer structure made of aluminum and stainless-steel screws guarantee greater durability against environmental corrosion, due to humidity, rain or temperature.

The manufacturer offers a standard 10-year warranty.

Inverters

The Huawei SUN2000 100KTL-M1 inverter comes with a 5-year factory warranty, with the possibility of extending it by 5 more years.

2.4 Installation interoperability.

In compliance with the current regulatory framework, state and EU, in accordance with Law 24/2013 that regulates the electricity sector to guarantee the supply of electricity and the reference IEC regulation, there are also IEEE standards that address and regulate microgrids and distributed resources (DR).

As it is an installation for self-consumption and with technology that is part of the customer's internal low-voltage installations, it is not prepared to operate with the rest of the grid distribution system, only the fact of being able to export the surplus photovoltaic production not consumed.

The regulatory element, in this case the inverter, does not allow operational management of this type, except for the fact of determining the maximum production power, limiting it or the management of production surpluses to inject them into the distribution network, provided that it is not configured as Zero Injection.

2.5 Expected tractor effect on SMEs and the self-employed.

The companies involved in this project are:

AECA ENERGIA SOLAR SL. with Tax ID number B64487531, based in Terrassa (Barcelona), operating as an engineering firm with a total staff of 17 professionals.

DOICA GESTIÓN S.L. with Tax ID number B64659758, based in Barberà del Vallès (Barcelona), which carries out work as an installation company with a total staff of 16 professionals.

CSOLAR ESTRUCTURAS SL with CIF B65579393 as a manufacturer and supplier of aluminum structures.

SACLIMA SOLAR FOTOVOLTAICA, S.L with Tax ID number B97243802, based in Alaquàs (Valencia), as the supplier of the panels and inverters.

NOVELEC (Noria Logística S.L.) with Tax ID number B65888844 and headquarters in Barberà del Vallès (Barcelona), as a supplier of electrical equipment.

3 Justification of the project's compliance with the principle of not causing significant harm to any of the environmental objectives set out in Regulation (EU) 2020/852.

For the purposes of the Regulation on the Recovery and Resilience Facility, the principle of not causing significant harm (DNSH) must be interpreted in accordance with Article 17 of the Taxonomy Regulation. This article defines what constitutes "significant harm" to the six environmental objectives covered by the Taxonomy Regulation:

1. An activity is considered to cause significant harm to climate change mitigation if it results in significant greenhouse gas (GHG) emissions.

2. An activity is considered to cause significant harm to climate change adaptation if it increases the adverse effects of current and projected future climate conditions on itself or on people, nature, or assets (6).

3. An activity is considered to cause significant harm to the sustainable use and protection of water and marine resources if it is detrimental to the good status or good ecological potential of water bodies, including surface water and groundwater, and to the good ecological status of marine waters.

4. An activity is considered to cause significant harm to the circular economy, including waste prevention and recycling, if it generates significant inefficiencies in the use of materials or in the direct or indirect use of natural resources, if it leads to a significant increase in waste generation, incineration, or disposal, or if the long-term disposal of waste may cause significant and long-term harm to the environment.

5. An activity is considered to cause significant harm to pollution prevention and control when it results in a significant increase in emissions of pollutants into the air, water, or soil.

6. An activity is considered to cause significant harm to the protection and restoration of biodiversity and ecosystems when it significantly impairs the good condition and resilience of ecosystems or the conservation status of habitats and species, particularly those of interest to the Union.

Checklist based on the DNSH principle:

3.1. Part 1: Member States must filter the six environmental objectives to identify those that require substantive assessment.

Indicate, for each measure, which of the following environmental objectives, as defined in Article 17 of the Taxonomy Regulation ("Significant harm to environmental objectives"), require a substantive assessment under the "DNSH principle" of the corresponding measure:

Indicate which of the following environmental objectives require a substantive assessment according to the "DNSH principle" of the measure	SÍ	NO	If NO is selected, explain the reasons
Climate Change Mitigation	☐	☒	It is a technology that helps the Climate Change Mitigation.
Adaptation to climate change	☐	☒	It works for a change in the model of fossil energy consumption.
Sustainable use and protection of water and marine resources	☐	☒	Does not affect water resources.
Circular economy, including prevention and waste recycling	☐	☒	It does not generate waste to be treated in its operation.
Prevention and control of pollution in the atmosphere, water or soil	☐	☒	Since it does not produce waste, it does not require control or prevention.
Protection and restoration of biodiversity and ecosystems	☐	☒	Since it does not produce waste, it does not require control or prevention.

3.2. Part 2: Member States must carry out a substantive assessment in accordance with the "DNSH principle" of environmental objectives that so require.

For each measure, answer the following questions for those environmental objectives that were identified in Part 1 as requiring substantive assessment:

QUESTION	NO	Substantive justification
Climate change mitigation: Is the measure expected to generate significant greenhouse gas emissions?	☒	Reduces current consumption.
Adaptation to climate change: The measure is expected to lead to an increase in the adverse effects of current and expected future weather conditions, on itself or on people, nature or assets?	☒	Reduces CO2 emissions.
Sustainable use and protection of water and marine resources: The measure is expected to be detrimental by: i) for the good status or good ecological potential of bodies of water, including surface and groundwater; or ii) for the good environmental status of marine waters?	☒	Doesn't affect or interfere with the use of water resources.
Transition to a circular economy, including waste prevention and recycling: The measure is expected to: i) leads to a significant increase in waste generation, incineration or disposal, except for the incineration of non-recyclable hazardous waste; or ii) generates significant inefficiencies in the direct or indirect use of natural resources (1) at any stages	☒	Except for waste such as cardboard from transporting the material for installation, it does not generate any other waste.

of its life cycle, which cannot be minimized by appropriate measures (2); or iii) result in significant and long-term damage to the environment in relation to the circular economy (3)?		
Pollution prevention and control: The measure is expected to result in a significant increase in emissions of pollutants (4) into the atmosphere, water, or soil.	☒	It does not generate waste or emissions of any kind.
Protection and restoration of biodiversity and ecosystems: The measure is expected to: i) significantly impair the good condition (5) and resilience of ecosystems; or ii) impair the conservation status of habitats and species, particularly those of interest to the Union.	☒	As it does not generate waste or pollutants, it cannot interfere with ecosystems.

4 Summary report detailing the total estimated amount of waste generated, classified by EWL codes, for the proper accreditation of compliance with the 70% for construction and demolition waste generated in the civil works to be carried out. Hazardous waste not added will not be considered for the purpose of achieving this target.

Given that the installation of the photovoltaic field will be carried out on the roof of the property's warehouse, civil works are not necessary.

4.1 Waste generated and valued.

EWL Code	Waste Description	Total Quantity Generated	Physical unit	Quantity valued	Physical unit
170201	Wood	0,080	Tn	0,080	Tn
170203	Plastic	0,030	Tn	0,030	Tn
150101	Paper and cardboard	0,10	Tn	0,10	Tn
170411	Electrical Cord	0,01	Tn	0,01	Tn
170201	Wood	0,080	Tn	0,080	Tn
170203	Plastic	0,030	Tn	0,030	Tn

All waste will be collected by the installation company and managed at its production center.

4.2 Certificates of destination waste managers.

DOICA GESTIÓ, S.L., with producer number P-85424.1, will classify and code the waste to be managed by the authorized manager CESPA GESTIÓN Y TRATAMIENTO DE RESIDUOS, S.A., with manager registration code E-298.96