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An EU strategy for solar energy – public consultation

A Eurelectric response paper

April 2022

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Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:
- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

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WG RES & Storage

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As a vocal supporter of an accelerated energy transition, leading the charge in decarbonisation and promoting cost-efficient decarbonisation and electrification across Europe, Eurelectric supports an ambitious EU strategy for solar energy, which harnesses the potential of the EU industry to develop a strong solar value chain in Europe and increases the contribution of solar energy to meeting the 2030 climate and energy targets.

- Accelerating the deployment of solar energy projects

The **key barriers delaying or preventing new utility grid solar energy projects** from materialising are **first and foremost obstacles related to permitting procedures**. Even when defined in law, deadlines for issuing permits are not respected. Moreover, electronic platforms to centralize permitting procedures lack, which entails unnecessary communication delays and a deficit of transparency and efficiency. While it must be underlined that there are differences across Member States, conflicting environmental regulations, lack of public acceptance, including opposition from local authorities, and grid connection issues, like the necessity to obtain a high number of approvals to build the power lines, have been noted as important barriers in some countries. In addition, **uncertainty regarding future support scheme framework and the future regulatory framework are reported as being the most important factors affecting the business case** of new utility grid solar energy projects on the ground, together with a lack of incentives for behind-the-meter storage combined with solar projects.

With respect to the **main factors that negatively affect the deployment of distributed, small-scale solar production installations in single-unit (SUB) or multi-unit buildings (MUB),** beyond the paramount issue of **permitting, the lack of resources of owners to face upfront investment cost, the tenant / landlord dilemma,** and even the **unsuitability of the buildings for such installations or geographical barriers** (e.g. winter conditions in Northern Europe) are described as key limiting factors for distributed PV. In the case of MUB, the **absence of an adequate legal framework for decision- making and representation** in joint- ownership buildings is a clear limitation. While **net-metering / net-billing schemes** are generally seen as incentivizing the deployment of distributed solar installations, the concern raised is that, in some Member States, the access to these schemes requires going through a **complex documentation process**, which acts as a disincentive. Other disincentivizing factors for small installations are, among others, the **unclear or complex regulation which prevents aggregation and market participation of these assets**, as well as the applicable network charges, taxes and levies. To tackle these issue, **the proper implementation of the Clean Energy Package is key.**

The solar strategy should also take into account the role that Energy Communities can play in order to integrate the production of RES, the EVs/batteries interaction and smart load management for housing blocks. **Energy communities are prevented from playing their role in generation, sharing and sale of solar energy namely by two factors**. On one hand,

permitting is a major bottleneck for consumers' engagement, complemented by a lack of clarity regarding the distinction between energy communities, collective self-consumption and individual self-consumption within the regulation. On the other hand, the **lack of community engagement must be tackled by putting in place support mechanisms that are rewarding.** Facilitating the **participation of small assets to the market**, providing a clear regulatory framework enabling aggregation, demand-side response and storage to provide ancillary services to the market, improving **cooperation with local authorities** and removing obstacles related to **grid connection** are key for boosting the role of energy communities. **Hence, it is of outmost importance that the provisions of the Clean Energy Package on these issues are duly implemented.**

The deployment of solar installations in industrial areas and facilities should be encouraged, to exploit the untapped potential for electrification of operations. Electrification is key for effectively enshrining a decarbonisation trend in the industry sector, as it can enable a 43% of emissions reduction already with existing technologies[1]. Improving permitting procedures, ensuring favourable regulatory and public support framework, tackling conflicting environmental / town planning regulations and **providing long-term visibility to investors to make large investment decisions are key to increasing the renewable-based electrification of industrial areas and facilities.**

Public authorities can set the example in terms solar energy deployment by deploying renewable installations in public buildings, with a focus on key categories also from a just transition point of view (e.g. social housing, schools, hospitals), by implementing **green procurement** policies and enabling energy communities and the private sector to fully exploit the solar potential through **leasing to them publicly owned land for the installation of solar technologies.**

A sharp increase in solar deployment will be needed to achieve EU's 2030 targets, hence sufficient space must be made available, including through identifying RES to-go areas (especially in the case of ground-mounted PV), and binding timeframes for permitting must be respected. Building more renewable energy capacities requires also **going towards a more integrated approach which allows for an optimized use of space, while promoting synergies between energy goals and biodiversity, infrastructure, societal and quality of life perspectives.** Hence, Eurelectric is convinced that the legislative and funding landscape, ranging from green infrastructure to agriculture and finance, should become more supportive of integrated RES projects, like those combining solar and e-mobility or solar and agriculture. Degraded areas or other abandoned areas could be repurposed to produce renewable energy (e.g. PVs installed on areas degraded due to coal mines closure, floating PVs on water bodies), hence reviving local communities and landscape. **To encourage such projects, potential tax / charges reductions / exemptions and the introduction of public tenders to support these projects could be considered, as well as simplifying permitting,** including through issuing EU guidelines on permitting for RES projects on degraded land. From a regulatory point of view, it is important to have a definition for these integrated projects (e.g. agrivoltaic) which helps navigate through both energy and agriculture legislation.

- Facilitating system integration of solar energy production

Successfully integrating increased volumes of renewables, including solar, in our energy system is of paramount importance. Beyond issues of compatibility / interoperability (e.g. for instance, PV inverts not being compatible with some smart meters) which can limit consumer choice, **one key factor preventing further system integration of solar energy is**

[1] https://powerbarometer.eurelectric.org/

the limited access of small assets to market participation (both in wholesale and retail markets), due to bidding thresholds and lack of opportunities to participate in several market streams. Further **developing local markets and peer-to-peer trading possibilities would also support an increasing role for distributed solar installations in the market.**

Full integration of new solar energy requires further investments in grids. Indeed, grids need reinforcements to integrate higher shares of renewables and tackle the balancing needs of an increasingly decentralised and decarbonised system. To make European grids fit for a decarbonised future[2], policy makers should work towards improving investment frameworks, facilitating access of distribution grid companies to EU funds, and accelerating the authorisation and permit granting processes.

- **Enhancing sustainability, resilience, competitiveness, innovation and transparency among the solar energy value chain**

Eurelectric supports the efforts to increase transparency with respect to environmental sustainability, carbon footprint and employment conditions related to the production and lifecycle of solar energy products / systems.

At the same time, **we are supportive of developing a strong solar energy value chain in Europe.** The transformation of European society through decarbonisation and electrification will enable EU industry to show its global leadership in developing, scaling and delivering cost-competitive & sustainable technologies and business models in a circular economy. To this end, it is key that large-scale manufacturing of solar technologies is encouraged and enabled. **An enabling regulatory, financial and investment framework must ensure that both public and private investment accelerate the energy transition and the uptake of clean and sustainable technologies.** EU industry competitiveness in the solar sector can be particularly boosted through novel technologies, polysilicon and modules production, as well as system dismantling and recycling.

[2] https://cdn.eurelectric.org/media/5682/manifesto_being_ahead_of_the_curve_draft_final_version-2022-030-0026-01-e-h-3F43D8A5.pdf

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Date: 11/04/2022 13:15:10

An EU strategy for solar energy - public consultation questionnaire

Fields marked with * are mandatory.

Introduction

About this Consultation
With the proposal for a revision of the Renewable Energy Directive adopted on 14 July 2021 as part of the Delivering the European Green Deal package, the EU is setting out its aim of doubling the share of renewables in the energy mix compared to 2020, to reach at least 40% in 2030. The current pace of deployment of projects and market penetration will need to accelerate significantly to meet the needed capacity increase, while supporting the environmental performance of the relevant technologies. A strategy specifically for solar technologies is needed to underpin the efforts of authorities, producers, consumers and stakeholders.
In this context and in line with 'better regulation' principles, the Commission is launching this public consultation designed to gather stakeholder views on matters relating to the objectives of the Communication on an EU solar energy strategy.

What is the purpose of the communication?
The EU solar energy strategy aims at helping unlock solar energy's potential in contribution to the European Green Deal objectives, including its key role to achieve climate and energy targets. It will analyse the state of play of solar energy across the EU, identify barriers and propose measures to accelerate deployment, ensure that the public reap related opportunities as well as enhance system integration. It will also consider avenues to foster EU competitiveness along the solar energy value chain.

How can I participate?
You can complete this questionnaire through the Commission website until 12 April 2022. Please use the button at the end of the questionnaire to upload feedback in other document formats. A synopsis report of this public consultation, as well as a summary of all consultation activities' results will be published on this page at the end of the consultation period.
You may choose to answer any or all of the questions.
Please note: In order to ensure a fair and transparent consultation process only responses received through our online questionnaire will be taken into account and included in the report summarising the responses.
Should you have a problem completing this questionnaire or if you require particular assistance, please contact ENER-C1-SECRETARIAT@ec.europa.eu.

About you

* Language of my contribution

- ○ Bulgarian
- ○ Croatian
- ○ Czech
- ○ Danish
- ○ Dutch
- ◉ English
- ○ Estonian
- ○ Finnish
- ○ French
- ○ German
- ○ Greek
- ○ Hungarian
- ○ Irish
- ○ Italian
- ○ Latvian
- ○ Lithuanian
- ○ Maltese
- ○ Polish
- ○ Portuguese
- ○ Romanian
- ○ Slovak
- ○ Slovenian
- ○ Spanish
- ○ Swedish

* I am giving my contribution as

- ○ Academic/research institution
- ◉ Business association
- ○ Company/business organisation
- ○ Consumer organisation
- ○ EU citizen
- ○ Environmental organisation
- ○ Non-EU citizen
- ○ Non-governmental organisation (NGO)

- ○ Public authority
- ○ Trade union
- ○ Other

* First name

Diana-Paula

* Surname

Gherasim

* Email (this won't be published)

dpgherasim@eurelectric.org

* Organisation name

255 character(s) maximum

Eurelectric

* Organisation size

- ○ Micro (1 to 9 employees)
- ◉ Small (10 to 49 employees)
- ○ Medium (50 to 249 employees)
- ○ Large (250 or more)

Transparency register number

255 character(s) maximum

Check if your organisation is on the transparency register. It's a voluntary database for organisations seeking to influence EU decision-making.

4271427696-87

* Country of origin

Please add your country of origin, or that of your organisation.

- ○ Afghanistan
- ○ Åland Islands
- ○ Djibouti
- ○ Dominica
- ○ Libya
- ○ Liechtenstein
- ○ Saint Martin
- ○ Saint Pierre and Miquelon

- Albania
- Algeria
- American Samoa
- Andorra
- Angola
- Anguilla
- Antarctica
- Antigua and Barbuda
- Argentina
- Armenia
- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh
- Barbados
- Belarus
- Belgium
- Belize
- Benin
- Bermuda
- Bhutan
- Bolivia
- Dominican Republic
- Ecuador
- Egypt
- El Salvador
- Equatorial Guinea
- Eritrea
- Estonia
- Eswatini
- Ethiopia
- Falkland Islands
- Faroe Islands
- Fiji
- Finland
- France
- French Guiana
- French Polynesia
- French Southern and Antarctic Lands
- Gabon
- Georgia
- Germany
- Ghana
- Gibraltar
- Greece
- Greenland
- Grenada
- Lithuania
- Luxembourg
- Macau
- Madagascar
- Malawi
- Malaysia
- Maldives
- Mali
- Malta
- Marshall Islands
- Martinique
- Mauritania
- Mauritius
- Mayotte
- Mexico
- Micronesia
- Moldova
- Monaco
- Mongolia
- Montenegro
- Montserrat
- Morocco
- Mozambique
- Myanmar/Burma
- Namibia
- Saint Vincent and the Grenadines
- Samoa
- San Marino
- São Tomé and Príncipe
- Saudi Arabia
- Senegal
- Serbia
- Seychelles
- Sierra Leone
- Singapore
- Sint Maarten
- Slovakia
- Slovenia
- Solomon Islands
- Somalia
- South Africa
- South Georgia and the South Sandwich Islands
- South Korea
- South Sudan
- Spain
- Sri Lanka
- Sudan
- Suriname
- Svalbard and Jan Mayen
- Sweden

- Bonaire Saint Eustatius and Saba
- Bosnia and Herzegovina
- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
- Brunei
- Bulgaria
- Burkina Faso
- Burundi
- Cambodia
- Cameroon
- Canada
- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
- China
- Christmas Island
- Clipperton
- Guadeloupe
- Guam
- Guatemala
- Guernsey
- Guinea
- Guinea-Bissau
- Guyana
- Haiti
- Heard Island and McDonald Islands
- Honduras
- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Isle of Man
- Israel
- Italy
- Jamaica
- Nauru
- Nepal
- Netherlands
- New Caledonia
- New Zealand
- Nicaragua
- Niger
- Nigeria
- Niue
- Norfolk Island
- Northern Mariana Islands
- North Korea
- North Macedonia
- Norway
- Oman
- Pakistan
- Palau
- Palestine
- Panama
- Papua New Guinea
- Paraguay
- Peru
- Switzerland
- Syria
- Taiwan
- Tajikistan
- Tanzania
- Thailand
- The Gambia
- Timor-Leste
- Togo
- Tokelau
- Tonga
- Trinidad and Tobago
- Tunisia
- Turkey
- Turkmenistan
- Turks and Caicos Islands
- Tuvalu
- Uganda
- Ukraine
- United Arab Emirates
- United Kingdom
- United States

- Cocos (Keeling) Islands
- Colombia
- Comoros
- Congo
- Cook Islands
- Costa Rica
- Côte d'Ivoire
- Croatia
- Cuba
- Curaçao
- Cyprus
- Czechia
- Democratic Republic of the Congo
- Denmark
- Japan
- Jersey
- Jordan
- Kazakhstan
- Kenya
- Kiribati
- Kosovo
- Kuwait
- Kyrgyzstan
- Laos
- Latvia
- Lebanon
- Lesotho
- Liberia
- Philippines
- Pitcairn Islands
- Poland
- Portugal
- Puerto Rico
- Qatar
- Réunion
- Romania
- Russia
- Rwanda
- Saint Barthélemy
- Saint Helena Ascension and Tristan da Cunha
- Saint Kitts and Nevis
- Saint Lucia
- United States Minor Outlying Islands
- Uruguay
- US Virgin Islands
- Uzbekistan
- Vanuatu
- Vatican City
- Venezuela
- Vietnam
- Wallis and Futuna
- Western Sahara
- Yemen
- Zambia
- Zimbabwe

The Commission will publish all contributions to this public consultation. You can choose whether you would prefer to have your details published or to remain anonymous when your contribution is published. **Fo r the purpose of transparency, the type of respondent (for example, 'business association, 'consumer association', 'EU citizen') country of origin, organisation name and size, and its transparency register number, are always published. Your e-mail address will never be published.** Opt in to select the privacy option that best suits you. Privacy options default based on the type of respondent selected

* Contribution publication privacy settings

The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

- ○ **Anonymous**
  Only organisation details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published as received. Your name will not be published. Please do not include any personal data in the contribution itself if you want to remain anonymous.
- ◉ **Public**
  Organisation details and respondent details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published. Your name will also be published.

☑ I agree with the personal data protection provisions

About you - continued

1. Are you:

- ○ Electricity market undertaking related to the integration of distributed solar installations (supplier, aggregator, etc)
- ○ Utility-scale producer of electricity from solar energy
- ○ Solar project developer
- ○ Consumer organisation
- ○ Public authority
- ○ NGO
- ○ Small or medium-sized business
- ○ Primary agricultural producer, including farmer and forester
- ○ Owner of Industrial facility
- ○ Solar energy product (hardware) manufacturer
- ○ Digital solutions developer
- ○ Research and Innovation Organisation
- ○ An individual that produces and consumes solar energy
- ◉ Other

If other please specify

100 character(s) maximum

Business association

2. What solar energy technology do you work with, if any?

- [x] Solar photovoltaic – utility grid
- [x] Solar photovoltaic – distributed
- [ ] Solar thermal – for industrial / agricultural application
- [ ] Solar thermal – domestic use
- [x] Solar thermal – district heating
- [x] Concentrated solar power (CSP)/Solar thermal electricity (STE)
- [ ] Other

3. In which markets are you active?

- [x] All EU countries
- [ ] Some EU countries
- [x] Non-EU countries

3c. which countries specifically?

500 character(s) maximum

UK, Switzerland, Iceland, Norway, Turkey, Ukraine

4. Do you represent either a renewable energy community in the sense of the Renewable Energy Directive or a citizen energy community in the sense of Electricity Market Directive?

- ( ) Yes
- (•) No

5. Are you or do you represent an owner / owners of distributed, small-scale solar energy production?

- (•) Yes
- ( ) No

Accelerating the deployment of solar energy projects

6. What are the key barriers that delay or prevent new utility grid solar energy projects (photovoltaic -PV or concentrated solar power - CSP) from materialising? Please assess their importance, separately for each technology, with 5 being the highest level of importance.

	PV: 1	PV: 2	PV: 3	PV: 4	PV: 5	PV: no opinion	CSP: 1	CSP: 2	CSP: 3	CSP: 4	CSP: 5	CSP: no opinion
Obstacles / lack of clarity related to permitting procedures	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☐	☐
Regulatory framework impacting the business case	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐
Conflicting environmental regulations	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐
Lack of public acceptance	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐
Grid connection issues	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐
Increased uncertainty of curtailments	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐
Other	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑

If other please specify

100 character(s) maximum

Low digitalization of permitting
Many approvals for building power lines
Supply chain disruption

6c. Comment

300 character(s) maximum

Permitting authorizations don’t respect deadlines (even if defined in law). Electronic platforms to centralize permitting procedures lack. Sometimes, relations with local authorities are difficult as they oppose the inclusion of PVs in the landscape. Retroactive laws affect existing investments.

7. What do you consider are the main factors that negatively affect the business case of new utility grid solar energy projects (photovoltaic -PV or concentrated solar power - CSP)? Please assess their importance, separately for each technology, with 5 being the highest level of importance.

	PV: 1	PV: 2	PV: 3	PV: 4	PV: 5	PV: no opinion	CSP: 1	CSP: 2	CSP: 3	CSP: 4	CSP: 5	CSP: no opinion
Competition from conventional generation installations	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐
Competition from utility-grid solar energy production installations which receive or have received feed-in tariffs	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐
Carbon price is not high enough	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐
Insufficient cooperation between Member States (e.g. through the cooperation mechanisms of the Renewable Energy Directive)	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐
Auction-based systems inadequate to ensure level playing field	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐
Uncertainty regarding future support scheme framework	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐
Uncertainty regarding future regulatory framework	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐
Energy taxation framework unfavourable towards renewable electricity generation	☐	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐
Insufficient incentives through disclosure schemes such as guarantees of origin	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐

Lack of incentives for behind-the-meter storage combined with solar projects	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐
Unfavourable financing conditions	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐
Unfavourable or uncertain market entry / dispatching of energy produced	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐
Other	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐

If other please specify

100 character(s) maximum

Oversupply impacting profitability,CAPEX volatility (components' cost),new taxes, no CRM for storage

7c. Comment

300 character(s) maximum

8. Which do you consider to be the main factors that negatively affect the deployment of distributed, small-scale solar production installations in single-unit (SUB) or multi-unit buildings (MUB)? Please assess the importance of the following factors, separately for both categories of buildings, with 5 being the highest level of importance.

	SUB: 1	SUB: 2	SUB: 3	SUB: 4	SUB: 5	SUB: no opinion	MUB: 1	MUB: 2	MUB: 3	MUB: 4	MUB: 5	MUB: no opinion
Obstacles / lack of clarity related to permitting procedures	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐
Regulatory and public support framework impacting business case	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐
Unfavourable taxation / tariffs	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐
Specific issues or limitations to self-consumption related to the existing net metering / net billing schemes (e.g. limitations in capacity installed)	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐
Conflicting environmental / town planning regulations	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐
Lack of resources of owner/s to face upfront investment	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐
Unfavourable financing conditions	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐
Dwellings are used by tenant/s, therefore owner/s lack interest to invest	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐

Absence of or low remuneration for sales of excess electricity produced	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐
Unsuitability of the building (shape, size, strength, structure or shading of roof areas)	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐
Lack of standardisation amongst solar solutions (e.g. size of panels / tiles, method of attachment, compatibility etc)	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐
Lack of or limited choice of experienced solar installation companies in the area	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐
Only for MUB: Absence of an adequate legal framework for decision-making and representation in joint-ownership buildings (e.g. blocks of flats) with commonly owned rooftops and facades.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐
Other	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐

If other, please specify

100 character(s) maximum

Lack of visibility and digitalization of permitting due to lack of resources, long approval times.

8c. Comment

300 character(s) maximum

Due to lack of resources and low level of digitalization, permitting authorities are unable to comply with permitting deadlines, even when these are clearly defined in law. Electronic platforms centralizing permitting procedures are needed for improving transparency and efficiency in permitting.

9. In the absence of net-metering / net-billing schemes, do you consider there would be a lack of incentives for distributed, small-scale installations?

3

9.1. If so, how would you assess the following as disincentivising factors? (5 being the highest level of disincentivisation)

	1	2	3	4	5
Applicable network charges, taxes and levies	○	○	◉	○	○
Unfavourable or uncertain market entry / dispatching of electricity produced	○	◉	○	○	○
Absence of value added services by electricity suppliers / aggregators to “prosumers”, for selling excess electricity in the market on their behalf	○	○	◉	○	○
Insufficient incentives through disclosure schemes such as guarantees of origin	○	○	◉	○	○
Other	○	○	○	○	◉

If other please specify

100 character(s) maximum

CEP must be implemented to tackle complex/unclear rules for small assets market participation.

10. How would you assess the following factors in preventing energy communities from fully playing their role in the generation, sharing and sale of solar energy? (5 being the highest level of prevention)

	1	2	3	4	5
Obstacles / lack of clarity in permitting procedures to set up energy communities	○	○	○	◉	○

Applicable grid tariffs for physical electricity sharing or collective self-consumption	○	○	◉	○	○
Conditions set by the system operator or the energy regulator to participate in energy markets	○	○	◉	○	○
Insufficient generation capacity to operate in energy markets	○	○	◉	○	○
Obstacles related to grid connection / other infrastructure connection	○	○	◉	○	○
Limited ownership / management rights on the community network	◉	○	○	○	○
Lack of community engagement	○	○	○	◉	○
Getting professionals on board / receiving technical advice	○	○	◉	○	○
Rigid and time-consuming tender procedures for subsidies	○	○	◉	○	○
Lack of cooperation of local authorities	○	○	◉	○	○
Other	○	○	○	○	◉

If other please specify

100 character(s) maximum

Permitting delays,unclear framework for energy communities vs. self-consumption,lack of incentives.

10c. Comment

500 character(s) maximum

The framework on energy communities, collective self-consumption and individual self-consumption needs clarification. CEP must be properly implemented as small assets face difficulties related to market participation and lack of an enabling framework for aggregation, DSR and storage to provide ancillary services. Permitting is a major bottleneck affecting consumers' engagement. Economic support mechanisms should be rewarding. Regulation covering different energy communities should be harmonized.

11. How would you assess the following factors in preventing solar installations in industrial areas / facilities? (5 being the highest level of prevention)

	1	2	3	4	5
Obstacles / lack of clarity related to permitting procedures	○	○	○	◉	○
Lack of business case	○	◉	○	○	○
Unfavourable taxation / tariffs	○	○	◉	○	○
Regulatory and public support framework impacting business case	○	○	○	◉	○
Conflicting environmental / town planning regulations	○	○	○	◉	○
Grid connection issues	○	○	◉	○	○
Unfavourable financing conditions	○	◉	○	○	○

Lack of long-term visibility needed to make large investment decisions	○	○	○	◉	○
Lack of incentives to use more renewable energy	○	○	◉	○	○
Low potential for electrification of operations	○	◉	○	○	○
Other	○	○	◉	○	○

If other please specify

100 character(s) maximum

Proper implementation of CEP is needed to clarify the framework on collective self-consumption.

12. How would you assess the following factors in preventing further deployment of solar thermal installations in the EU? (5 being the highest level of prevention)

	1	2	3	4	5
Obstacles / lack of clarity related to permitting procedures	○	○	◉	○	○
Unfavourable conditions for renewable sources connecting to the heating market or system	○	◉	○	○	○
Absence of a heating system to connect to	○	◉	○	○	○
Unfavourable taxation / tariffs	○	○	○	◉	○
Unsuitability of the building (shape, size, strength, structure or shading of roof areas)	○	○	◉	○	○
Regulatory and public support framework impacting business case	○	○	○	◉	○
Conflicting environmental / town planning regulations	○	○	◉	○	○
Unfavourable financing conditions	○	○	◉	○	○
Hot water consumption is not enough to justify investment	○	○	◉	○	○
Space heating system cannot effectively utilise hot water from a solar thermal system	○	◉	○	○	○
Absence of other uses of heat (e.g. swimming pool, industrial process, etc.)	○	◉	○	○	○
Other	○	○	○	○	○

12c. Comment

500 character(s) maximum

13. How would you assess the following factors in encouraging public authorities to install solar energy in the buildings or land they own or lease? (5 being the highest level of effectiveness)

	1	2	3	4	5
Setting targets for renewable installations in public buildings	○	○	○	◉	○
Legal mandates	○	○	◉	○	○
Lease public building's roof for use by private companies to exploit the solar potential	○	○	◉	○	○
Lease public building's roof for use by energy communities to exploit the solar potential	○	○	◉	○	○
Lease publicly owned land for use by private companies or energy communities to exploit the solar potential	○	○	○	◉	○
Promotion of green public procurement	○	○	○	◉	○
Focus on key categories, e.g. social housing, schools or hospitals	○	○	○	◉	○
Other	○	○	◉	○	○

If other please specify

100 character(s) maximum

Tackle conflicting environmental/town planning regulation, having resources for upfront investments.

14. To primary agricultural producers including farmers / agriculture associations: have you invested or are you planning to invest in solar energy in your farm?

- ○ Yes
- ○ No

14.1. If yes, in which context?

- ☐ As part of a net-billing / net-metering scheme
- ☐ As a stand-alone electricity generation installation, feeding into the wholesale /retail market
- ☐ As part of an energy community
- ☐ Alongside electrifying my agricultural machinery set / fleet
- ☐ To support artificial lighting for plant growing / vertical farming installation
- ☐ Other

14.2. If not, why?

- ☐ Lack of financing

- [ ] Barriers linked to permitting
- [ ] Barriers linked to grid connection
- [ ] Unclear technology choice or preference for another technology, e.g. biogas production
- [ ] Conflict with other land uses
- [ ] Not a priority
- [ ] Other

15. What regulatory changes would be beneficial to create a more supportive framework for additional distributed photovoltaic capacity in locations other than buildings, e.g. agricultural, industrial, or recreational areas?

500 character(s) maximum

Potential tax reductions for landowners and introducing public tenders aimed at supporting requalification projects of abandoned areas, that can be repurposed to provide RES-E to nearby facilities could be considered. The introduction of a European-wide definition of agrivoltaic installations should help to coordinate regulation between PV and agricultural activities. Simultaneous claiming of PV and agricultural subsidies and innovation investment grants for agricultural PV should be enabled.

Facilitating system integration of solar energy production

16. Do you consider that compatibility / interoperability issues between components of solar photovoltaic installations, or solar production & storage systems, limit customer choice in equipment to a particular supplier, manufacturer, or product line?

4

16.1. If so: What is this incompatibility attributed to?

- [x] Incompatible communication protocol / standard
- [ ] Incompatible power specifications, such as voltage requirements
- [x] Other

If other please specify

200 character(s) maximum

In Spain for instance, PV inverts are not compatible with some meters.

17. Do you provide flexibility services (e.g. through demand response) to the local electricity system operator?

- ( ) Yes

- ○ No

17.1. If No, what is preventing you from doing so?

- ☐ Concerns about data protection
- ☐ Regulatory barriers
- ☐ Conditions set by the local system operator or the energy regulator to offer flexibility services are too strict
- ☐ Insufficient scale to offer flexibility services
- ☐ Other

18. Do you consider that distributed, small-scale solar producers should be allowed to sell on both wholesale and retail markets?

- ◉ Yes
- ○ No

18.1. How would you assess the following barriers, preventing such market participation? (5 being the highest level of prevention)

	1	2	3	4	5
Bidding thresholds	○	○	○	◉	○
Lack of opportunity to participate in several market streams (e.g. wholesale day-ahead and intraday market, or ancillary services (including balancing), or congestion management services)	○	○	○	◉	○
Absence of local markets, peer-to-peer trading possibilities etc.	○	○	◉	○	○
Market dominated by large utilities	○	◉	○	○	○
Net metering / net billing restrictions	○	○	◉	○	○
Other	○	○	○	○	○

19. Have you installed or do you plan to install a battery for your domestic or business needs?

- ○ Yes
- ○ No

19.1. If yes, why?

- ☐ To better align my consumption with solar production
- ☐ To charge my electric vehicle at night with own solar production
- ☐ To decrease dependence from the grid
- ☐

To use in agriculture / industrial applications

Other

19.2. If no, how would you assess the following factors, deterring you from installing a battery for your domestic or business needs? (5 being the highest level of deterrence)

	1	2	3	4	5
Too expensive for the added value					
High upfront costs, although it is a financially viable investment					
Not enough space					
Regulatory / grid connection related barriers					
Lack of suppliers / experienced installers					
Safety issues					
Issues with disposal/recycling at the end of life					
Other					

19c. Comment

300 character(s) maximum

20. Do you consider that a common format of data for grid communication of distributed solar photovoltaic systems is necessary?
You may provide extra information on suggested protocols or data flow organisation.

Yes

No

20.1. Do you consider that such data production should be close to the time intervals of electricity markets (e.g. 15 minutes), or even closer to real time (e.g. down to 1 or 5 minute intervals)

Yes

No

20c. Comment

300 character(s) maximum

Data production should be close to the time intervals of electricity markets (15 minutes).

Enhancing sustainability, resilience, competitiveness, innovation and transparency along the solar energy value chain

21. Would you consider appropriate to apply any of the following sustainability-related measures for solar energy products/systems sold in EU, in relation to their production and/or lifecycle?

	Yes	No	Not sure
Requiring transparency about environmental sustainability (e.g. through labelling)	◉	○	○
Requiring transparency about carbon footprint (e.g. through labelling)	◉	○	○
Requiring transparency about employment conditions (e.g. through labelling)	◉	○	○
Placing quantitative requirements (e.g. thresholds) for environmental sustainability, carbon footprint, or other production aspects	○	○	◉

21c. Comment

300 character(s) maximum

22. Do you consider that the EU's reliance on imported products/materials in the solar energy sector creates vulnerabilities or risks for accelerating deployment of solar energy?

- ○ Yes
- ○ No
- ◉ Not sure

22c. Comment

300 character(s) maximum

Regarding the influence of EU's reliance on imported products / materials in the solar energy sector on accelerating the deployment of solar energy, two countervailing factors must be considered: favourable module prices of those imports and risk of dependence on supply chains outside EU.

23. Do you consider that supply chain challenges could have a substantial impact on the availability of cost-effective solar energy solutions in the EU market in the medium-long term?

3

23c. Comment

300 character(s) maximum

Potentially, yes, due to implications of the revision of contracts (prices, delivery, timing).

24. How would you assess the following factors in hampering EU's capacity for generating intellectual property and innovation in relation to the solar energy value chain? (5 being the highest level of hampering)

	1	2	3	4	5
Lack of support to academic and research institutions	○	○	◉	○	○
Limited large-scale manufacturing in EU	○	○	○	◉	○
Lack of financing for start-ups	○	○	◉	○	○
Process to file for EU-wide patents is too long / tedious	○	○	◉	○	○
Process to file for EU-wide patents is too costly	○	○	◉	○	○
Absence of possibility to file a provisional patent application at EU level securing short-term (e.g. one year) patent protection with minimal cost, until a full application is filed	○	○	◉	○	○
Lack of technical and financial capacity to pursue future intellectual property disputes	○	○	○	◉	○
Other	○	○	○	○	○

24c. Comment

300 character(s) maximum

25. How would you assess the potential of various sectors of the photovoltaic supply chain to increase the competitiveness of the EU industry? (5 being the highest level of potential)

	1	2	3	4	5
Novel technologies (e.g. heterojunction, perovskite, tandem)	○	○	○	○	◉
Polysilicon production	○	○	○	○	◉
Ingots & wafers production	○	○	○	◉	○
Cells production	○	○	○	◉	○
Modules production	○	○	○	○	◉
Equipment manufacturing	○	○	○	◉	○
Project engineering, procurement and construction	○	○	○	◉	○

Project operation and maintenance	○	○	○	◉	○
Balance of system	○	○	○	◉	○
System dismantling and recycling	○	○	○	○	◉
Other	○	○	○	○	○

25c. Comment

300 character(s) maximum

26. How would you assess the contribution of the following measures to the sustainability, competitiveness and resilience of the EU solar energy value chain? (5 being the highest level of contribution)

	1	2	3	4	5
Access to favourable financing conditions	○	○	○	○	◉
Launch a process of Important Projects of Common European Interest for the solar energy sector	○	○	○	◉	○
Secure access to raw materials by enhancing EU production	○	○	○	◉	○
Secure access to raw materials through promoting diversified and undistorted international traded	○	○	○	◉	○
Measures promoting fair and undistorted access to international markets for EU companies in the solar value chain, including through engagement with third countries	○	○	○	◉	○
Measures promoting solar energy solutions that require customisation (e.g. building-integrated photovoltaics, agri-photovoltaics, etc.)	○	○	○	◉	○
Enhance skills development in the solar energy value chain in the EU	○	○	○	◉	○
Support to the development of large-scale production facilities, including through accelerated permitting	○	○	○	○	◉
Measures promoting match-making between manufacturers and off-takers	○	○	○	◉	○
Enhance synergies with the use for space applications	○	○	◉	○	○
Other	○	○	○	○	○

26c. Comment

500 character(s) maximum

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Thank you, your participation is very much appreciated!

Contact

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