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Delegations will find attached document SWD(2022) 148 final.

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**COMMISSION STAFF WORKING DOCUMENT**  
**STAKEHOLDER CONSULTATION - SYNOPSIS REPORT**

*Accompanying the document*

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN  
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL  
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**EU Solar Energy Strategy**

{COM(2022) 221 final}

# **PUBLIC CONSULTATION SYNOPSIS REPORT**

## **EU SOLAR ENERGY STRATEGY**

The European Commission first announced its intention to adopt a Communication setting out a strategy for solar energy in the EU in the 2022 Commission Work Programme. In the preparation of this initiative, the main stakeholder consultation activities consisted of an online “call for evidence” and a public consultation, which were published on 18 January on the Commission’s consultation website ‘Have your say’ and remained available for feedback for 12 weeks. In addition to the online consultation activities, the Commission also organized a high-level virtual stakeholder conference on the EU Solar Strategy, as well as three workshops at technical level.

The aim of the consultation was to gather feedback from the Member States, stakeholders and citizens on the proposed scope and content of the strategy, as well as on additional elements the strategy should cover. The main stakeholders targeted were public authorities, solar energy companies such as product manufacturers, project developers or undertakings related to the integration of solar installations, such as aggregators or providers of digital solutions, including SMEs; energy communities, consumer associations; non-governmental organisations; research and innovation organisations and individuals that produce or consume solar energy or are simply interested in it.

This document should be regarded solely as a summary of the contributions made by stakeholders through this consultation process. It cannot in any circumstances be regarded as the official position of the Commission or its services and thus it is not binding for the Commission. Responses to the consultation activities cannot be considered as a representative sample of the views of the EU population.

### **Range of participating stakeholders**

Input from the main stakeholders targeted was received via responses to the public consultation, comments to the “call for evidence” and through participation in the stakeholder events. There was high participation of solar energy companies at all levels (from micro to large companies) and representing various solar energy technology sectors (concentrated solar power, solar photovoltaic, solar thermal, etc.) as well as renewable communities and citizens involved and/or interested in solar energy. Several consumer associations, non-governmental organisations and research and innovation organisations also provided comments or feedback. There was limited participation from public authorities, whether at national or at local level.

### *Tools and methodology*

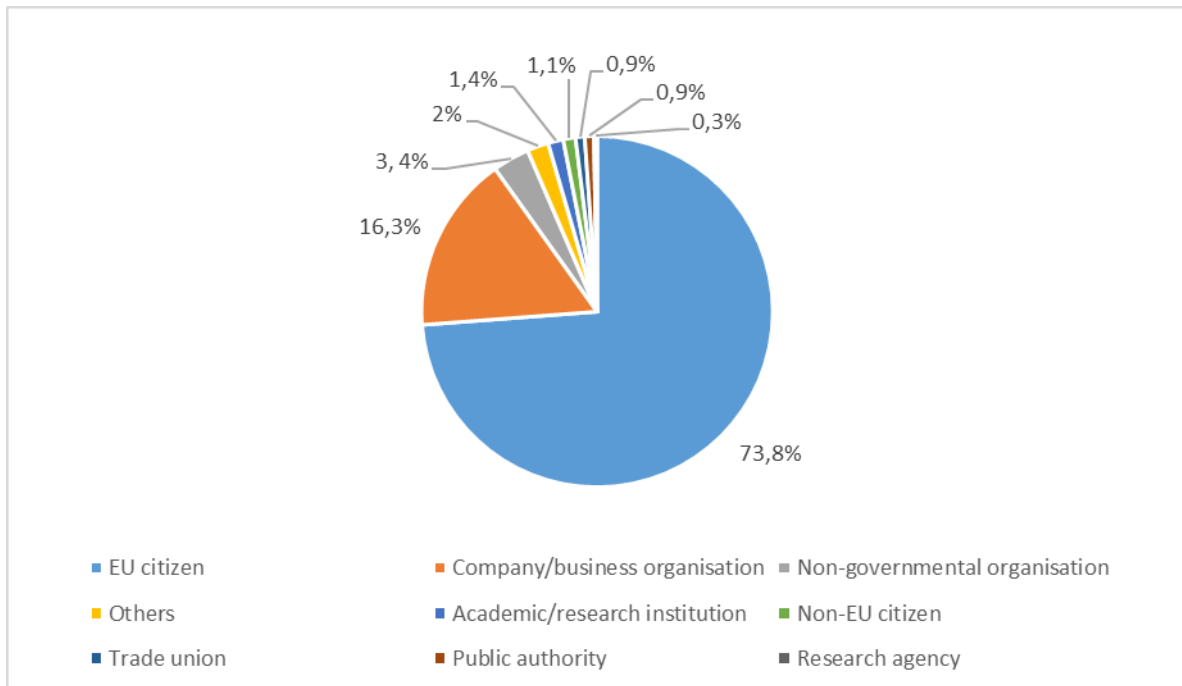
A quantitative and qualitative analysis of the replies to the public consultation and the comments received to the ‘call for evidence’, including the attached position papers was carried out. The replies to the multiple-choice questions in the public consultation were processed using the quantitative data analysis tools in EU Survey. The qualitative replies (the free text replies to the questions as well as the attached position papers) were gathered and screened separately from the quantitative data. The comments to the ‘call for evidence’ were

classified according to the claims made and quantified.

### *Call for evidence*

Regarding the “call for evidence”, 447 persons or entities commented upon it. Nevertheless, 92 were repetitions and 44 did not address the topic at stake. Therefore, the actual number of substantial contributions was 311.

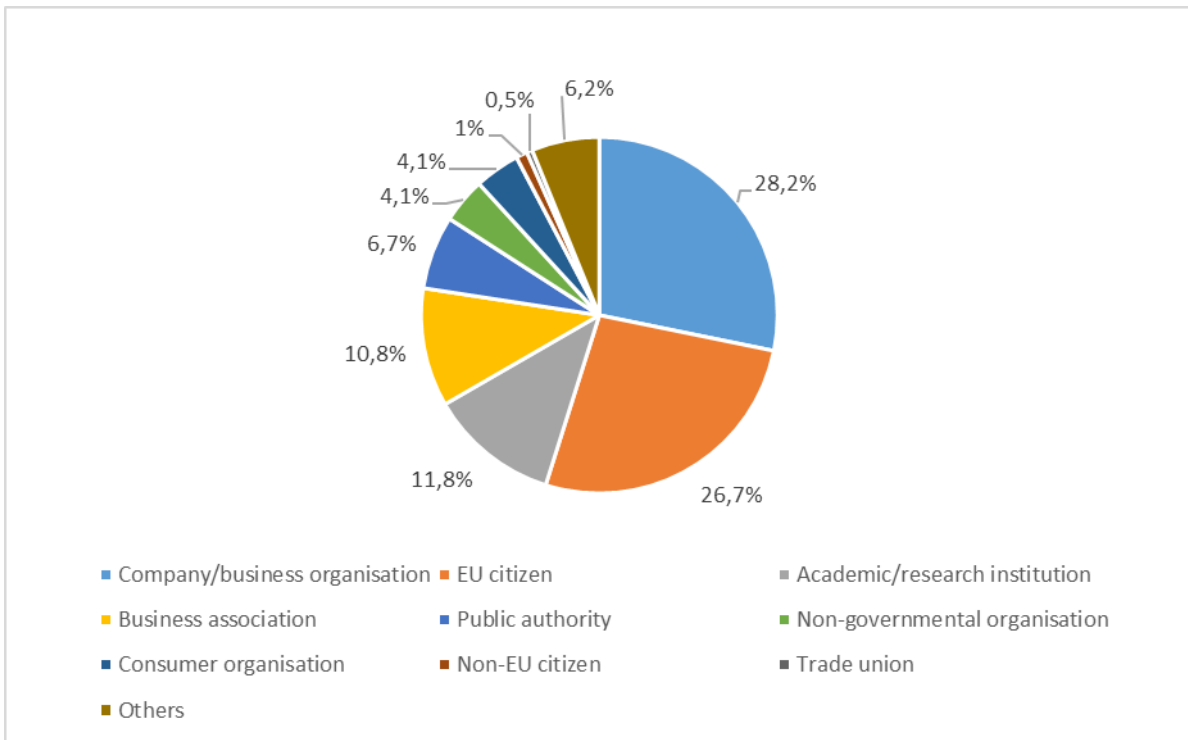
The great majority of comments came from citizens (266, including 4 from non-EU citizens) and company/business organisations (58) non-governmental organisations (12), academic/research institutions (5), research agencies (1), trade unions (3), public authorities (3) and others (7).



### *Public consultation questionnaire*

The public consultation questionnaire attracted a total of 190 participants, the majority of which were company/business organisations (55) and EU citizens (52). The remaining respondents represented academic/research institutions (23), business associations (21), public authorities (13), non-governmental organisations (8), consumer organisations (3), non-EU citizens (2), trade unions (1) and others (12). In addition, 12 respondents declared that they represented an energy community and 49 stated they represented an owner(s) of distributed, small-scale solar energy production.

Concerning the country of origin declared by the participants, 44 declared Spain, 38 Germany, 18 France, 14 Belgium and Italy, 8 the Netherlands, 7 Sweden, 5 Austria, Portugal and Poland, 4 Greece, 2 Czech Republic, Denmark, Estonia, Ireland, Hungary and Malta and 1 Bulgaria, Finland, Lithuania, Romania and Slovenia. Regarding respondents from outside the EU, 3 declared Norway as country of origin, 2 Switzerland and Turkey, 1 Brazil, China, Israel and United Kingdom.



When asked about which technologies they worked with (respondents could choose more than one option), the most selected technology was solar photovoltaic, either distributed (87) or utility-scale (78), followed by solar thermal, either for domestic use (40), for industrial or agricultural use (39) or district heating (29), while Concentrated Solar Power (CSP) was selected by 59 respondents.

### Results of the public consultation

#### *Call for evidence*

The vast majority of respondents, 290, was in favor of an accelerated deployment of solar energy, while 21 respondents were against, out of 311 substantial respondents. Most of them recommended major deployment of solar energy in buildings, simplification of legislation and greater economic support. Some expressed concerns about land-use competition with agriculture, environmental concerns and security in the supply chain.

The administrative burden (77) was pointed by the participants as the main bottleneck for the development of solar projects, highlighting the need for shorter and simpler administrative procedures. Some participants also pointed to the need for more support (60) in form of funding, loans or tax reductions.

Some respondents mentioned that buildings should produce renewable energy and be highly energy efficient, which in turn would reduce energy costs for households. To accomplish so, they urged to accelerate the integration of solar energy on roofs, balconies, façades, walls or other parts of new construction projects, as well as during renovations of public or private buildings (85). Others linked the development of solar energy in buildings with the integration of e-mobility, proposing to accelerate the deployment of parking/charging stations for electric vehicles, including along motorways. Other participants supported energy communities and self-consumption as tools to promote decentralised solar energy production (28) and to inform the general public on the benefits and viability of solar energy (9).

Several respondents indicated storage systems as the best solution to allow greater flexibility in the management of the renewable energy production and to provide energy at night (40). Some participants mentioned the need to boost other solar technologies such as CSP (10) and solar thermal (15), not just photovoltaic panels. One of the key challenges identified was the development of a workforce that possesses the knowledge, skills and competences needed (7).

As concerns the environmental aspects, various participants demanded reinforced sustainability standards and research in resource-efficient production and recycling (30). As regards dual use of space, many advocated the promotion of agri-PV (34). A few number of respondents supported the EU manufacturing of solar panels ("made in Europe") (18) as a way of ensuring that PV products installed in the EU apply high environmental standards, are not produced by forced labour and reinforcing supply chain resilience.

### *Public consultation questionnaire*

The public consultation questionnaire contained 26 questions in total, most of them multiple-choice questions, though some of them were open questions. The questions covered three main topics: (1) accelerating the deployment of solar energy projects, (2) facilitating the system integration of solar energy production and (3) enhancing sustainability, resilience, competitiveness, innovation and transparency along the solar energy value chain. It is worth noting that most of the 190 respondents did not fully answer all the questions.

In the first section of the questionnaire, permitting procedures were identified as the most important barrier to photovoltaic projects by the largest number of participants (45), followed by grid connection issues (43) and the regulatory framework (42). On the other hand, the lack of public acceptance was identified as the least important barrier by the largest number of participants (32). As regards CSP projects, the regulatory framework was identified as the most important barrier by the largest number of participants (51).

As concerns the factors that negatively affect the business case of new utility-scale solar PV projects, the largest number of participants (44) pointed to the uncertainty regarding the future regulatory framework as the most important barrier, followed by uncertainty regarding future support schemes (40) and lack of incentives for behind-the-meter storage combined with solar project (38). To the same question for large-scale CSP projects, the largest number of participants (49) pointed to auction-based systems that are inadequate to ensure a level playing field, followed by uncertainty regarding the future regulatory framework (46).

Participants also weighed the importance of the factors that hamper the deployment of small solar installations in single-unit buildings. The largest number of participants (41) pointed to the absence of (or low remuneration for) sales of excess electricity produced. For installations in multiple-unit buildings, the largest number of participants (41) chose the regulatory and public support framework as the most important negative factor, followed by the legal framework for decision-making in joint-ownership buildings with commonly owned rooftops and facades (38). Around 40 respondents did not fully answer these two questions. In addition, most respondents agreed that in the absence of net-metering/net-billing schemes, there would be a lack of incentives for small installations and the largest number of respondents (32 out of approximately 100 participants who answered this question) pointed to applicable network charges and levies as the most important negative factor.

As regards the factors preventing energy communities from fully playing their role in the generation, sharing and sale of solar energy, many respondents did not fully answer (around 90). Among those who did, the largest number of respondents (40) identified the rigid and time-consuming tender procedures for subsidies as the main factor and the permitting procedures to set up energy communities (also 40).

Respondents also assessed the factors that prevent solar installations in industrial areas/facilities. The largest number (37), taking into account that around 70 respondents did not answer this question, chose the impact of the regulatory and support framework on the business case, followed by the lack of long-term visibility needed to make large investment decisions, the lack of incentives to use more renewable energy and grid connection issues (33 each). On the other hand, the low potential for electrification of operations was not seen as an obstacle, since the largest number of respondents (54) rated it as the least important negative factor.

Regarding solar thermal installations, the largest number of respondents (32), taking into account that around 100 respondents did not fully answer this question, pointed to the regulatory and public support framework, followed by those who signaled the unfavourable conditions for renewable sources connecting to the heating system (30).

In order to encourage public authorities to install solar energy in the buildings or land they own or lease, the largest number of respondents (83) chose setting targets for renewable installations in public buildings as the most appropriate instrument, followed by those who favoured legal mandates (69). Around 60 respondents did not fully answer this question.

Primary agricultural producers including farmers and agriculture associations were asked whether they had invested or were planning to invest in solar energy in their farm. Out of 22 respondents, 10 responded positively and most of them (6) signaled it was part of a net-billing/net-metering scheme. The majority of those who had not invested and/or were not planning to invest (12 in total), mentioned the lack of financing as the main reason behind their decision (6).

Concerning the regulatory changes that would be beneficial to create a more supportive framework for additional distributed photovoltaic capacity in locations other than buildings, around 60 participants exposed their ideas. The responses were quite heterogeneous, but some topics were shared by few participants, such as fostering the deployment of agri-PV through developing a specific framework for it, increasing financial aids (support schemes, tax reductions, etc), or making permitting procedures shorter and lighter.

The great majority of respondents (145) considered that compatibility/interoperability issues between components of solar photovoltaic installations, or solar production and storage system limit customer choice in equipment to a particular supplier, manufacturer or product line. Among 78 respondents, 45 signaled as reason the incompatible communication protocol/standard.

As regards measures to facilitate the system integration of solar energy production, approximately 60 respondents did not fully answer this question. The largest number of respondents (101) considered that small solar producers should be allowed to sell on both wholesale and retail markets.

A majority of respondents signaled they were not providing flexibility services to the local electricity system operator (74 out of 122 who answered). As regards barriers to the

provision of flexibility services (e.g. through demand response) to the local electricity system operator, the largest number of respondents (51) identified the absence of local markets or peer-to-peer trading possibilities as the most important barrier, followed by the domination of the market by large utilities (38).

The majority of respondents (102 out of a total of 117 answers) agreed that small-scale solar producers should be allowed to sell on both wholesale and retail markets. The largest number of respondents (51) pointed to the absence of local markets, peer-to-peer trading possibilities, etc. as main barrier preventing such market participation. However, around 100 participants did not rate all the barriers.

There were more respondents that had not installed a battery for their domestic or business needs than respondents who had done it (79 vs 51). The main reason for installing it was to better align consumption with solar production (37) and to decrease dependence from the grid (36); the majority of those who had not done it considered that it was too expensive for the added value (39). Concerning grid communication of distributed solar photovoltaic system, most of the participants who responded considered that a common format for data was needed (87 out of 106 answers) and, regarding that data production, most of the respondents who answered thought it should be close to the time intervals of electricity markets or closer to real time (78 out of 99 answers).

With reference to the questions related to the value chain, the majority of respondents (between 121 and 150) considered that it would be relevant to apply measures requiring increased transparency and placing quantitative requirements (on carbon footprint, environmental sustainability and employment conditions) for solar energy products/systems sold in the EU. A great majority of respondents (151) considered that the EU's reliance on imported products/materials in the solar energy sector creates vulnerabilities or risks for accelerating the deployment of solar energy and many participants (142) considered it probable that supply chain challenges would have a substantial impact on the availability of cost-effective solar energy solutions in the EU market in the medium-long term.

When asked to select the main factors that hamper EU's capacity for generating intellectual property and innovation in relation to the solar energy value chain, limited large-scale manufacturing in the EU was selected most frequently (99). Concerning the sectors of the PV supply chain with most potential to increase the competitiveness of the EU industry, respondents pointed mostly to novel technologies, such as heterojunction, perovskite or tandem cells (66), but also to the production of modules (56) and cells (55), and to equipment manufacturing (54). On measures that would contribute to the sustainability, competitiveness and resilience of the EU solar energy value chain, the largest number of respondents (76) chose access to favourable financing conditions as the measure with the highest potential, followed by the launch of a process of Important Projects of Common European Interest in the solar energy sector (69) and by support to the development of large-scale production facilities, including through accelerated permitting (64).

### *Positions papers*

The European Commission received 35 documents providing summaries or positions on solar energy from a range of organisations, including public administrations, companies, distribution and transmission system operators, private sector and citizen associations, etc. To a large extent, the messages sent through this channel repeated those received through the questionnaire. Thus, this section summarises the demands put forward in these documents that are not reflected in the summary above.



An aspect for which this channel provided new perspectives was the social implications of solar energy deployment, in terms of fighting energy poverty, supporting collective self-consumption, addressing the difficulties tenants face to access renewable energy, etc. Stakeholders proposed support schemes targeting low-income households that cannot afford the initial investment required for the installation of solar energy or the establishment of mechanisms that provide incentives for both landlords and tenants. In order to facilitate the installation of solar energy in multi-unit buildings, they proposed to revise decision-making rules in these buildings to allow decisions to be taken in a quicker and simpler manner, for instance, on a simple majority basis. In order to promote self-consumption, stakeholders proposed to ensure that prosumers can change supplier, which will improve competition in the remuneration of the electricity they feed into the grid; in addition, some requested this remuneration to be at least as high as the electricity market price. The need for small installation to be fully involved in electricity markets was also seen as necessary to promote decentralised deployment. Other stakeholders pointed out that in some cases, rooftop deployment is blocked by local regulations on the external aspect of buildings and asked for simplification and shortening for permitting in such installations. The elimination of certain taxes in the case of self-consumption and sharing of electricity was also requested, as well as the revision of network tariffs to encourage decentralised solar deployment. The need to fully implement the existing EU legislation on Renewable Energy Communities was also underlined.

At the same time, many stakeholders proposed solutions to favour the deployment of large-scale installations, such as a national-level mechanism to identify suitable areas, or flexibility in implementing environmental legislation, using existing derogations on the basis of public interest. In parallel, a large number of stakeholders proposed to address obstacles related to the dual use of space or surfaces holistically, covering regulations for various sectors i.e. energy, on the one hand, and construction, agriculture, infrastructure, etc, on the other.

Some national governments and utilities also underlined that the European Union should respect the Member States' right to decide on their energy policy and refrain from proposing additional legislation in this sector. Meanwhile, local administrations underlined that the EU's outermost regions rely on isolated energy systems, while Art. 349 TFEU protects their energy sovereignty. This translates into the need to develop both renewable energy installations and storage solutions. The existing obstacles to storage deployment was also underlined by other stakeholders.

Some industrial sectors used this channel to put forward their demands. Solar heat was presented being in need of further support, for instance in order to be more widely applied to decarbonise some industrial processes, where the potential is big but progress slow. The Concentrated Solar Power sector was particularly active, asking for specific support to renewable sources that provide grid stability, including CSP.

Finally, the solar manufacturing sector presented a range of demands. These included recognizing the industry as a strategic sector for the EU, providing access to financing (including through an Important Project of Common European Interest), setting an EU-level target for manufacturing capacity, ending current anti-dumping duties on certain components needed for the manufacturing of PV products,

#### *Outreach events*

In addition to the above mentioned activities, the Commission organised a high-level virtual stakeholder conference on the EU Solar Strategy on 29<sup>th</sup> March, which gathered

around 250 participants. The speakers included high-level representatives from the EU institutions and actors of the EU's solar and thermal sector: industry, citizen organisations, regulators, analysts, researchers and civil society. There was unanimous support to accelerating and facilitating the deployment of solar installations, while keeping environmental and social standards at a high level. The importance of dual use of space was underlined by most participants. Strengthening of Europe's supply chain was stressed as important too, although there was no consensus on what EU-level measures could be adopted to propitiate it. Decentralised deployment led by citizens was discussed as a key future component, based for instance on energy communities.

The Commission also participated to three technical workshops on specific topics with researchers and industry stakeholders:

- In the first, on Building-integrated PV (BIPV), stakeholders underlined that BIPV products have to go through a double certification procedure, as construction products and as electricity products, and that there was no homogenous product certification procedures across the EU.
- In the second, on opportunities and barriers for the solar PV manufacturing industry, stakeholders pointed out that, while innovation remains a key advantage of the EU, the lack of manufacturing makes the innovation environment less competitive. Access to financing was presented as the key need for expanding manufacturing because of the competition by imported products, which, in their view, is the result of an un-level playing field at international level.
- In the third, with representatives of the Concentrated Solar sector (both power and thermal sectors), stakeholders put forward their view that CSP should not have to compete with solar PV on the basis of costs as it brings additional system value in the form of thermal storage and can e.g. deliver electricity over the night, replacing. Thus, they called for auction designs that recognise the advantages of dispatchable renewable energy.

## **Conclusions**

The results of the open public consultation are largely aligned with the main intentions of the initiative. They showed overwhelming support for accelerated deployment of solar energy in the EU and for a larger role of the EU solar industry in this process.

It is important to underline that some of the requests conveyed through this consultation process will be addressed through other ongoing initiatives or planned by the European Commission. In particular, the parallel initiative on faster permitting for renewable energy projects, since this was largely identified as the main barrier to accelerated deployment. Other issues are linked to the full implementation of existing EU legislation and to the proposals put forward in 2021 through the Fit for 55 package, including the proposed revision of the Renewable Energy Directive.

A core tenant of this initiative is that all forms of deployment are needed to achieve the EU renewable energy targets, an approach that is clearly reinforced by the results of the consultation process. Large-scale deployment is necessary and must be compatible with other uses of land and with strict environmental standards; innovative forms of deployment, in combination with agriculture or transport infrastructure, must also be promoted; finally, in order to support decentralised deployment led by citizens and

communities, a set of incentives needs to be put in place while unnecessary barriers must be lifted.

Finally, the consultation confirmed a very large support among stakeholders for a larger role of the EU solar industry, either based on the economic benefits it would bring or on the wish to reduce the current dependence on imports. There is a panoply of instruments the EU can use to propitiate this process. In addition, the consultation reflected a clear demand for solar energy products that respect high sustainability standards.