



# FOR A NEW, BUT INCLUSIVE EU STRATEGY ON SOLAR ENERGY

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We welcome the initiative of the European Commission to open a consultation on a new EU strategy on solar energy. However, the current design of the questionnaire doesn't address the real functional capabilities of modern Concentrated Solar technologies

(CST); consequently, the signatories call for an update of this questionnaire to reflect a truly inclusive approach to *all* solar technologies and their respective applications and market potential.

## Main limitations of the questionnaire

- The questionnaire was designed from a nearly exclusive point of view by actors in the Photovoltaic (PV) technology. As a result, more than half of the questions is relevant only for PV systems.
- Of an even greater concern is the fact that the market potential of CST is not addressed by the questionnaire: questions should be added relating to Concentrated Solar Power (CSP) capabilities to enter the (high temperature) heat market as well as its potential role for the development of new "green" fuels ("green" hydrogen derivatives); questions about factors that will support or impede it, especially around the hoped-for development of a hydrogen market, are missing.
- Regarding storage, the questionnaire considers only battery-related aspects and does not address the contribution of thermal energy storage (TES) and its capability of supplying large amounts power at any time (day and night).
- Several questions are ambiguous and answers will depend on individual interpretation of the questions: As an example:
  - Grid connection is not an issue for the deployment of CSP plants in the sense that promoters of such plants include in their projects the modalities of connection to the grid.
  - Grid connection is, however, an issue, when differences exist in the design of Renewable Energy Sources (RES) auctions, where in a country the connection point is auctioned together with the new capacity, while in a neighbouring country the given regulatory conditions impose separate auctions – resulting in questionable auction results.
- The questionnaire does not address barriers currently impacting the deployment of the cross-sector technology projects and related research activities: actually, the hybridisation of both solar technologies CSP and PV represents the most competitive solution for providing flexibility to electricity systems taking advantage of large TES capacities (above 6 hours).
- The questionnaire does neither address potential incentives for refurbishing solar thermal plants via added storage nor the issue of defining targets (at national or EU level) for manageable RES. Such a better-balanced ratio between variable and manageable RES would reduce or eliminate intermittence effects affecting the regional / national grid operation.
- From an industry perspective, the questionnaire does not reflect the inclusiveness of the solar industry, namely the fact that companies able to provide solar generation at intermediate or utility scale represent an industry:

- Active on both segments of the technology (CST and PV).
- Able to propose applications beyond the sole electricity markets (e.g. process heat and “green” fuels).
- From an R&I perspective, the questionnaire does not address the disproportionate level of funding in the last years between PV and solar thermal technologies and the necessary incentives to promote cross renewable technology research. This is detrimental to the necessary integration of the entire European solar industry – which in turn would create the necessary critical mass / level of competitiveness versus non-European actors and preserve the European innovation capabilities, also on system / process level, beyond the challenge of component manufacturing.
- Growing shares of intermittent RES in the system require additional system services to stabilise grid operation. The questionnaire does not address possible incentives for technologies with low or no negative system impact or for those providing grid services (inertia / frequency stability).
- The questionnaire does not reflect the fact that increasing capacities of additional intermittent RES capacities lead to a disproportionate increase of curtailments, gradually reducing the annual yield per each MW installed. System planning feature or technologies offering solutions to reduce curtailments shall be incentivised.
- The questionnaire does not cover the topic of industrial process heat generation. Since process heat generation today has the same CO<sub>2</sub> emissions level as electricity generation, the role of CST for heat generation appears vital and should therefore address the following facts:
  - Besides solar thermal plants connected to the grid for centralised electricity generation, concentrated solar systems can achieve a substantial reduction of CO<sub>2</sub> emissions in the industrial sector in the field of process heat generation.
  - From a global perspective, the industry accounts for 32% of the final energy consumption, of which 74% is consumed in the form of heat. In Germany alone, the consumption of energy for industrial process heat is similar to the total electricity consumption of the country.
  - The solar thermal technology has proven its technical and economic viability over the past 30 years in various utility scale power plants worldwide enabling the EU to reach its ambitions 2030 emission reduction targets in the industrial sector.
  - Climate change, increasing energy prices amid of unprecedented tensions on world markets and the simultaneous call for a decarbonised industry make CST technology a vital part of the future energy mix.
  - In most parts of Europe, solar heating and cooling processes are already significantly cheaper compared to fossil fuels and can replace them in many areas.



The full potential of CST (courtesy of Horizon-STE project\*)



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