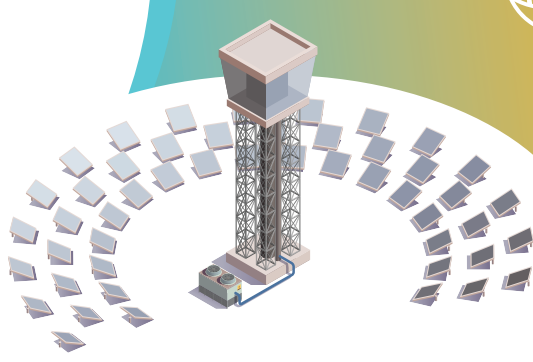


Solar Thermal Electricity (STE)

THE FUTURE OF SOLAR ELECTRICITY ON DEMAND



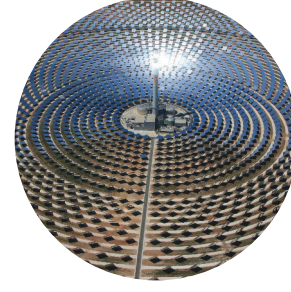
HORIZON
STE



THE TECHNOLOGY

Solar Thermal Electricity (STE) technologies use mirrors to concentrate the sun's radiation onto a receiver to generate heat. The heat can either be used in industrial processes or to drive conventional steam turbines that produce electrical power.

THE POWER PLANTS



THE PROJECT

HORIZON-STE is a policy-oriented EU-funded project aimed at supporting the Implementation of the Initiative for Global Leadership in Solar Thermal Electricity. The initiative was launched by the STE sector in Europe and adopted by the European Commission within the Strategic Energy Technology Plan.

THE COUNTRIES REVIEWED

Denmark
Germany
Belgium
France
Switzerland
Italy
Spain
Portugal
Greece
Turkey



THE JOINT INDUSTRY AND R&I NATIONAL EVENTS ORGANISED



7
April
Turkey



14
June
Italy



30
June
Germany



6
July
Spain



8
July
Portugal



EU cooperation event
September 14,
2022 Brussels, Belgium



12
July
France

POLICY RECOMMENDATIONS ADDRESSED DURING THE JOINT INDUSTRY AND R&I NATIONAL EVENTS

Germany



Set up of an efficient regulatory/legal framework to accelerate the transition from the R&I phase to market entry of innovative technologies



Set up of a clear regulatory framework for STE technologies especially related to heat applications and in the context of green H2



Extended funding schemes for demonstration combining different elements such as REFM, KfW soft loans, Carbon Contracts for difference, etc.

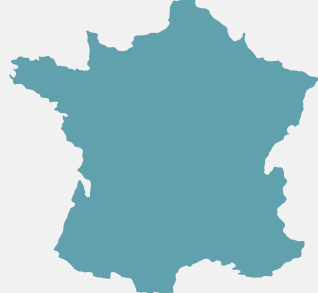


Support to international project development



New consideration of the EU cooperation mechanisms (EU RES DIR)

France



In the light of the ongoing energy crisis worsened by Russian invasion of Ukraine, France should reconsider its CSP strategy and implementation instruments as another building block to reduce its dependence on fossil fuels, besides its nuclear assets



France is in Europe the country that binds most positive conditions for a better use of concentrated solar technologies



In France, the project uncovered the need for a campaign around dispatchable renewables to complement nuclear power in the next generation of renewable energy sources

Spain



The results of the announced auction in 2022 will be insightful about the type of projects and their cost in Spain impacting the development of the entire CSP sector in Europe



The Spanish TSO should control the use of storage capacities in power plants



The auction design should provide viable conditions for blending technologies - exposure to market prices



The applicable regulatory conditions should support the possibilities to optimise the use of CSP storage during the winter period



Use of different evaluation criteria for each of the technology involved regarding their proper system or macro-economic value



The highly developed R&I sector can contribute to the relaunch of CSP/T via incremental innovations in power plants and new applications for process heat or solar fuels

Italy



Costs reductions for CSP plants are expected due to "economies of scale" and manufacturing standardisation in case of a CSP European project pipeline



The investments in CSP should go to projects with a balanced ratio between environmental sustainability and technical/economical yield



Harmonisation of permitting procedures between the national, regional, and municipal levels would support the deployment of CST



The adjustment of auction criteria would enable the valorisation of the system benefits of CST plants for the electricity system



CST deployment should involve the Italian industry capabilities with involvement of both numerous knowhow holding SMEs and major companies

Portugal



Coordinating RES supply auctions between Portugal and optimising solutions to the storage challenge across the Iberian Peninsula



Proactively supporting industrial cooperation between Portugal and Spain on extended uses of CSP



A common political initiative in Portugal and Spain stimulating wider cooperation in the RES sector, especially about CSP



Strengthening the support for aligning research and industry policy



Potential job creation and related socio-economic benefit for stressed rural regions



Maintaining a stable funding framework for R&I on extended CSP applications beyond 2020 in line with the NECP targets

Turkey



Due to its excellent solar resources Turkey can provide solar concentrated technology solutions for many applications, first in heat



Turkish research is a dynamic asset that can efficiently add support to this new market in Turkey



CST development would offer opportunities for international cooperation to the Turkish industry



On the longer term, lessons learned from the auction in Spain should be adjusted to the Turkish environment