



## Dissemination workshop: Key elements for the new solar thermal energy plants

### STE STATUS & PROSPECTIVE

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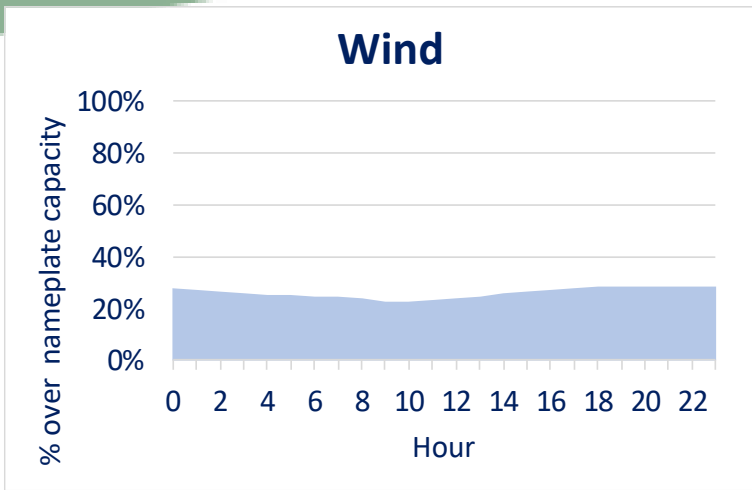
MSLOOP dissemination workshop  
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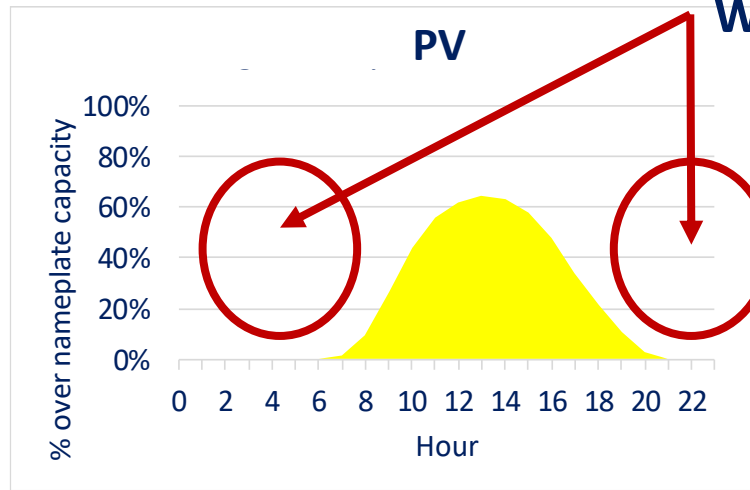
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# Essential piece for the true energy transition



Average hourly Production

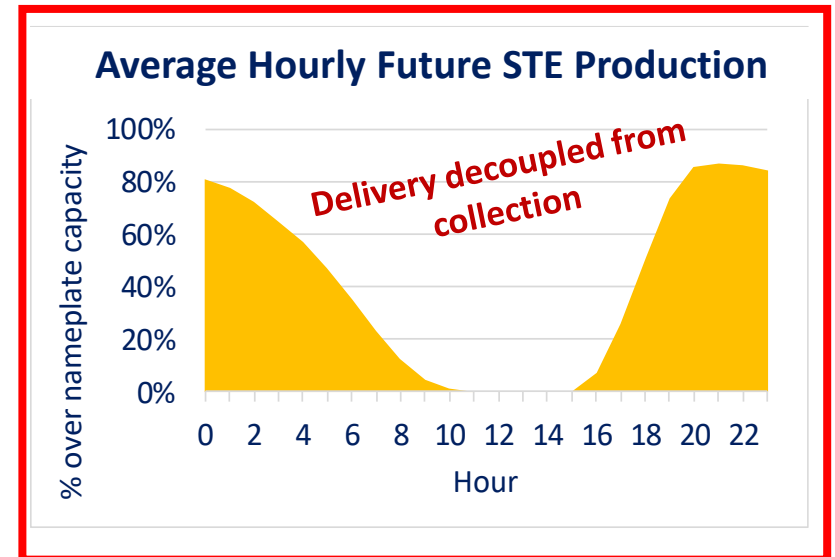


## What technology could fill these gaps?

*There are no battery systems with the power level of commercial power stations that offer 12 hours of service. And the experts do not foresee that there will be in the next decade*

## ¿What is the missing piece?

**The STE plants, with this dispatch profile, would provide synchronous generation, with absolute firmness and without deviations from its programming by having the energy previously stored in their tanks.**



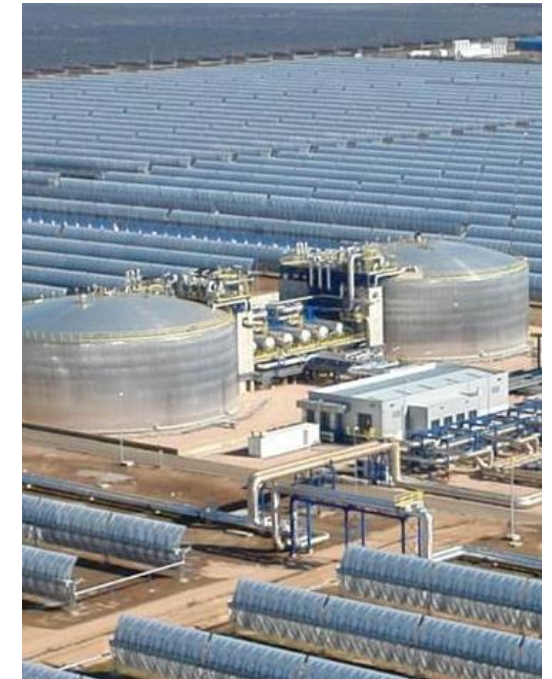
## The storage system of STE plants is a kind of treasure



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- ✓ The two molten salt tank storage system - cold & hot - are being commercially used since 2008 with proven reliability and performances. Their current capacity is 10 fold larger than the capacity installed in Li-Ion batteries
- ✓ The molten salt storage cost is currently in the range of **\$ 40/kWh<sub>e</sub> for STE tower plants** (as of today the battery pack + BoS are in the range of **\$ 400/kWh** and charging losses and durability still an issue. New pumping stations – if they can be ever deployed – will show similar costs to the batteries.
- ✓ STE plants could provide grid services through the **“Power to Heat” concept** such as curtailments recovery or even strategic reserve for long periods of time. They could also play daily arbitrage of prices as pumping stations.
- ✓ The storage capacity of the new 5 GW foreseen in the Spanish national plan for 2030 STE plants could help to save **more than 20 billion €** in batteries or new hydro pumping stations



- Flexibility, Flexibility, Flexibility
- Temperature Increase
- Storage Improvement
- Decrease Environmental Concerns



***THANK YOU  
FOR YOUR ATTENTION***

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