



Solar Thermal Energy Contracting  
**Sustainable and Cost-Efficient**  
**Process Heat on Demand**



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# About Protarget AG



## Solar Thermal Systems

- Protarget AG founded in 2009, is specialised in the design and production of Concentrating Solar Thermal (CST) Systems
- Modular plants to provide industrial customers with process heat of up to 420°C, able to compete directly with fossil fuels
- Protarget's technology is qualified by the German Aerospace Centre (DLR), approved by TÜV Germany and in accordance with the applicable industry standards and norms
- CST plants in Germany, Cyprus, Spain, India, Morocco and Brazil in operation, with further projects in Greece, Cyprus, and Saudi Arabia under construction

## Hydrogen Mitigation Systems

- Together with our German engineering partner CSP-Services, Protarget has developed a Hydrogen Mitigation System to remove excess hydrogen from the HTF to increase receiver lifetime in utility scale CSP plants
- First systems are currently being produced and installed in utility scale CSP plants in Spain and South Africa

➤ Germany



➤ India



➤ Cyprus



➤ Brazil



➤ Spain



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## Sustainable and Cost-Efficient Process Heat on Demand



### Thermal Energy Demand in the Industry – Current Status

- The majority of the industrial energy consumption (70%) is used for process heat, which is largely generated in conventional boiler system using gas, oil and coal
- The industry still has reservations about new and renewable technologies
  - Technical people in the factories have limited experience with renewable technologies
  - Oil and Gas is still relatively cheap - CO<sub>2</sub> taxes are low
  - Investments in new technologies are seen as a technical and financial risk



### Solar Thermal Energy Contracting as an Alternative

- Solar thermal systems provide green and sustainable process heat, significantly cheaper compared to fossil fuels
- Energy contracting is providing sustainable process heat to an industrial customer on basis of a long-term energy contract
- In a contracting model, Protarget is responsible to design, build, finance, maintain and operate the plant (DBFMO) on the basis of a TPA (Thermal Purchase Agreement).

# Solar Thermal Energy Contracting

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### Advantages of Energy Contracting

- Energy Contracting is limiting the technical and financial risk to the customer
- No O&M responsibilities, reducing operational risk
- Performance guarantees create plannable cost savings over a long period
- Energy contracting enables an easier and faster decision process (management level) compared to an investment decision (cooperate level)
- Customer can claim to have incorporated a sustainable technology into its production process and benefit from the CO<sub>2</sub> savings to achieve its goals to become carbon neutral
- Financial investors who invest in ESG (Environmental, Social, Governance) projects, are able to achieve a solid revenue stream over 10-20 years with an IRR of 10% and more
- Customer has the option to purchase the plant before the end of the contract and benefit from the reduced energy cost





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