

New Pathways to Commercialization of Hydrogen and Fuel Cells

Essential Steps towards a Hydrogen Society

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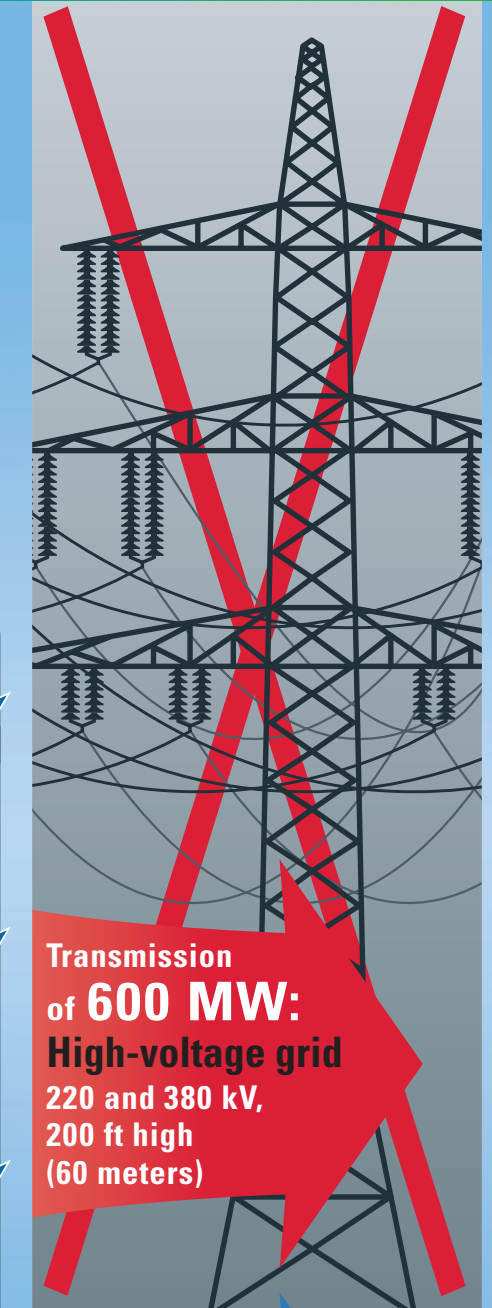
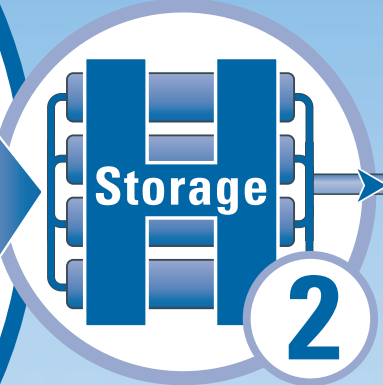
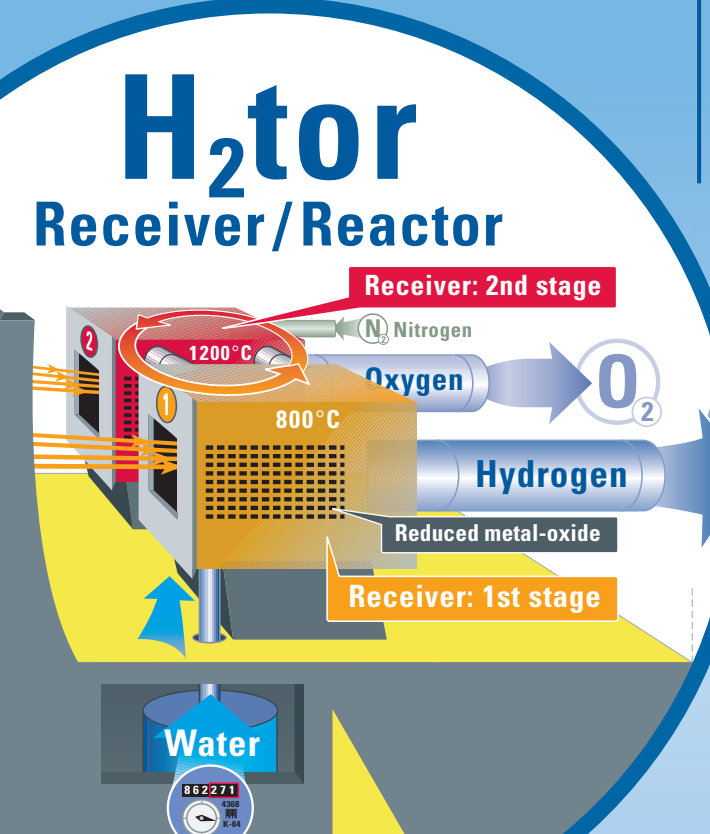
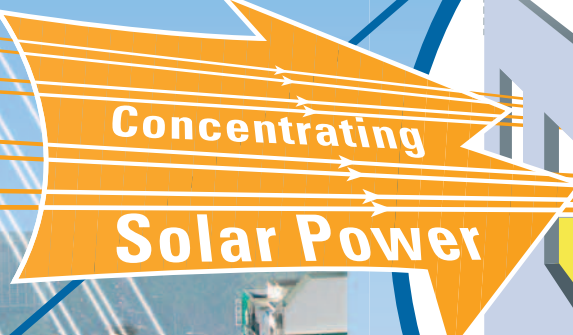
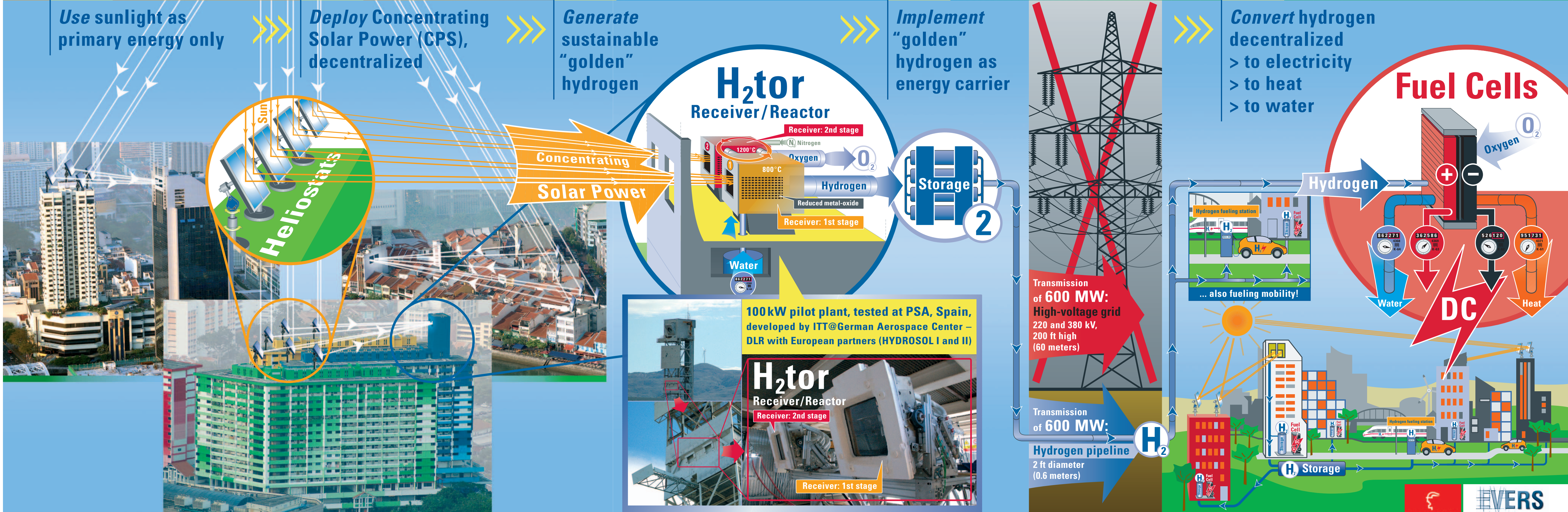
Step 1:
Use sunlight as primary energy only

Step 2:
Deploy Concentrating Solar Power (CPS), decentralized

Step 3:
Generate sustainable "golden" hydrogen

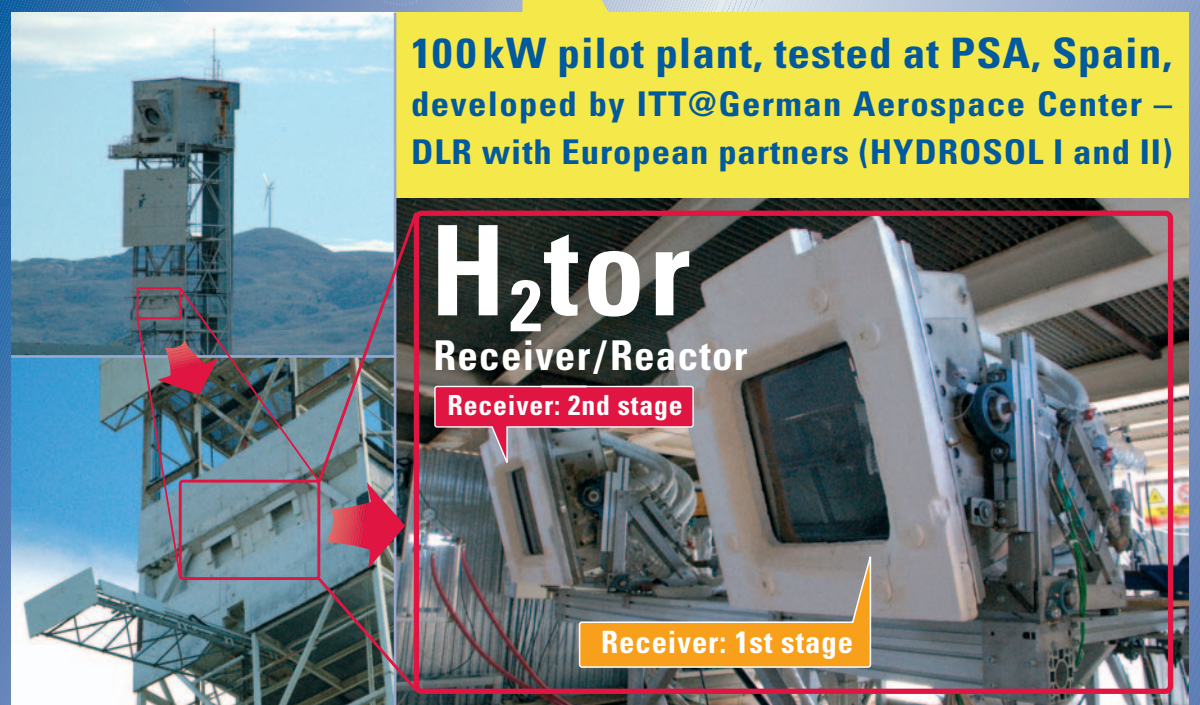
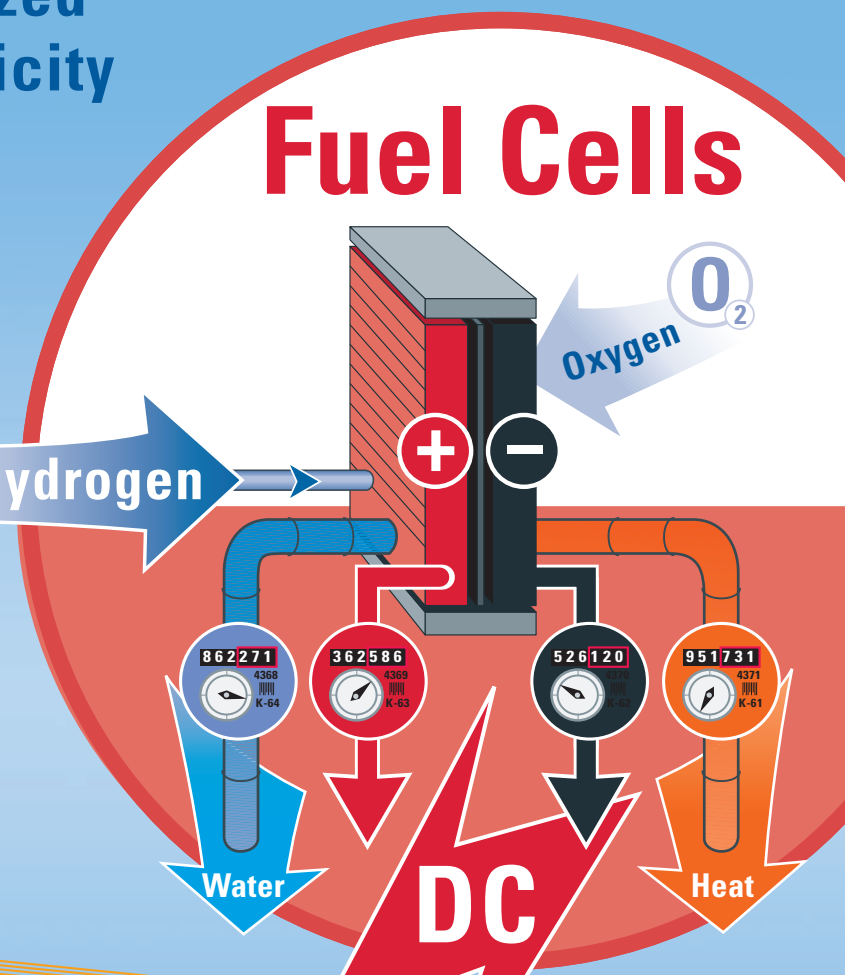
Step 4:
Implement "golden" hydrogen as energy carrier

Step 5:
Convert hydrogen decentralized
> to electricity
> to heat
> to water



Transmission of 600 MW: High-voltage grid 220 and 380 kV, 200 ft high (60 meters)

Transmission of 600 MW: Hydrogen pipeline 2 ft diameter (0.6 meters)



100kW pilot plant, tested at PSA, Spain, developed by ITT@German Aerospace Center – DLR with European partners (HYDROSOL I and II)