



CSP Storage for Repurposing Coal Plants for a Fair Energy Transition

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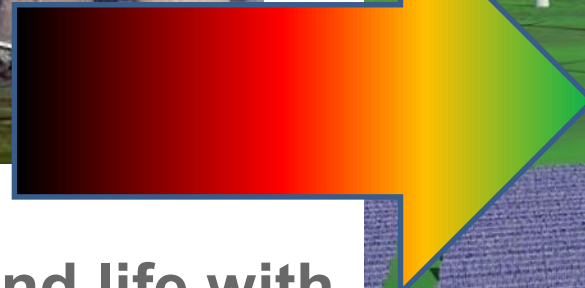
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für Luft- und Raumfahrt**
German Aerospace Center



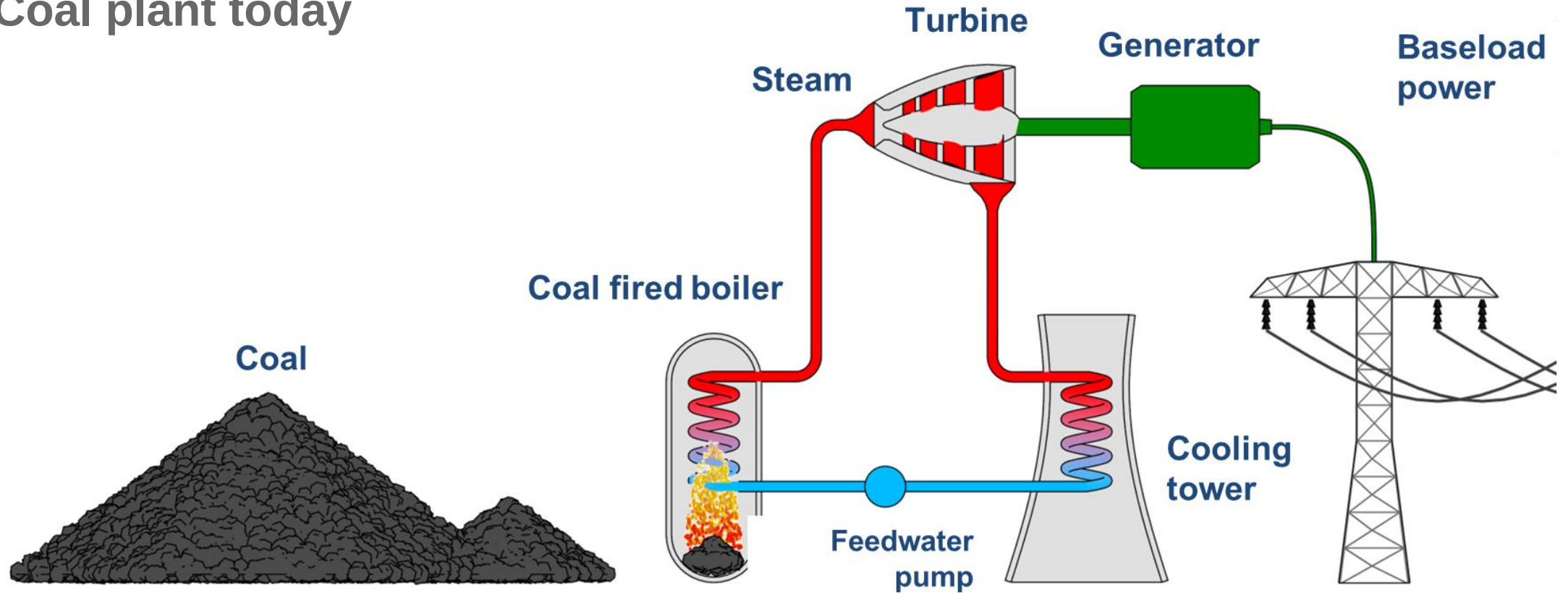
Transition from fossil coal to dispatchable clean renewable power generation



... giving coal plants a second life with thermal storage and saving their jobs

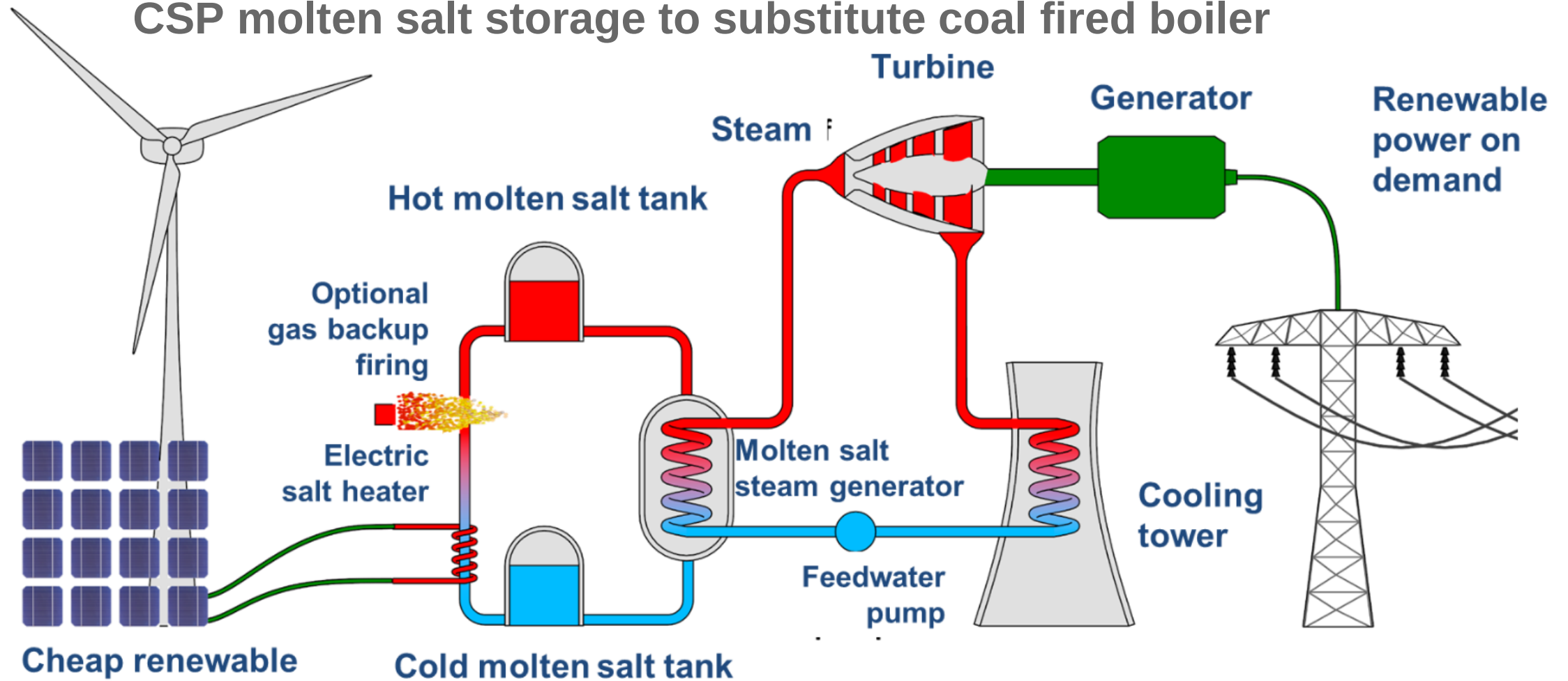


Coal plant today





CSP molten salt storage to substitute coal fired boiler





Kathu, South Africa



Xina, South Africa



Gansu Akesai, China



Las Arenas, Spain



La Africana, Spain



Solana, USA



Ashalim, Israel



Solana, USA



Noor 2, Morocco



Valle 1, Spain



Bookport, South Africa



Gemasolar, Spain



Noor 3, Morocco



Cerro Dominador, Chile



Andasol 3, Spain



Freshel Shouhang
Dunhuang, China



MS Tower Shouhang
Dunhuang, China



Extresol 2, Spain



Manchasol, Spain



Source: Volcanic S.A.



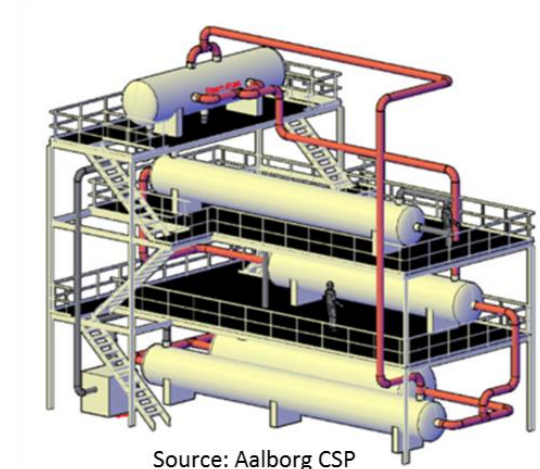
**Electric heaters for charging
molten salts -
fired by PV/wind power**

Molten salt tanks – hot and cold



All you need is this:

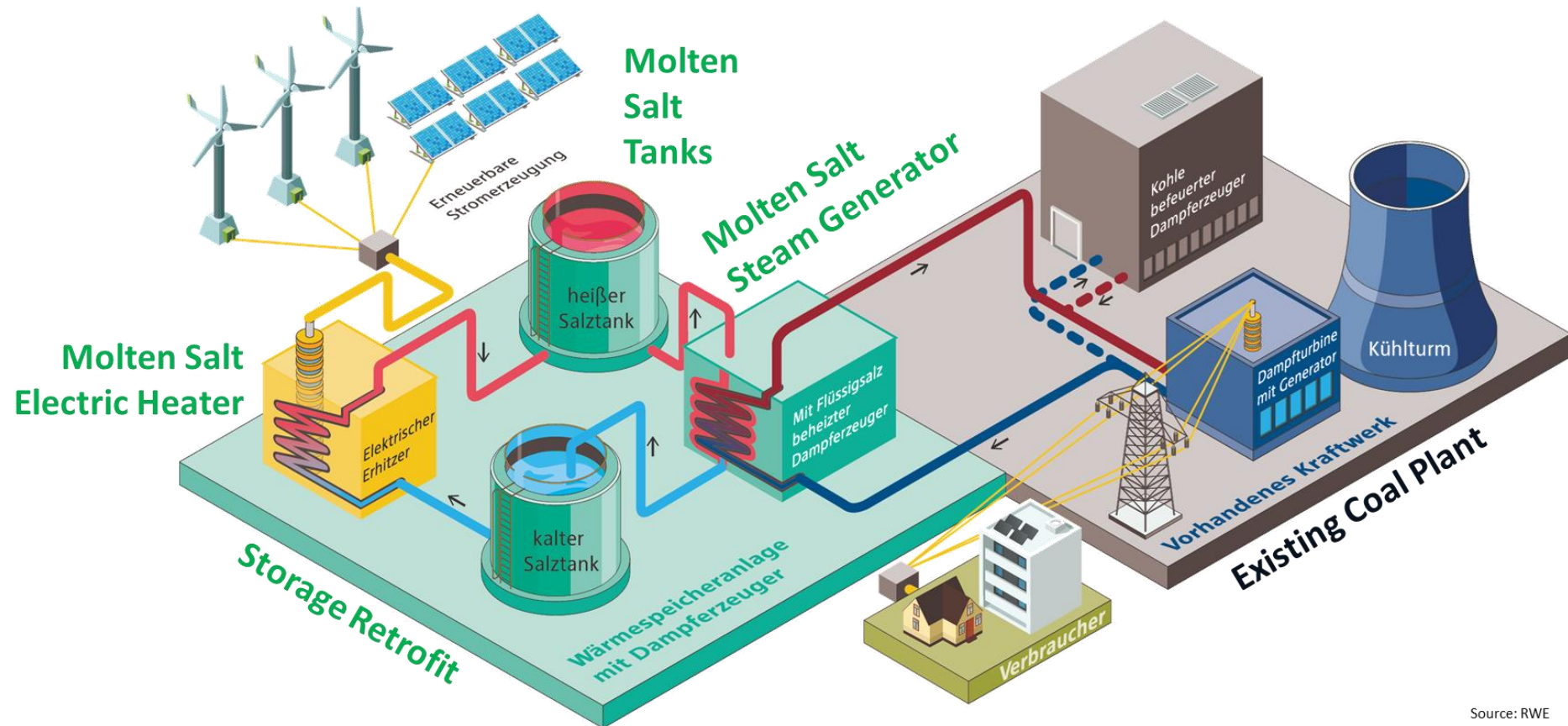
**Molten salt steam generators
for discharging**



Source: Aalborg CSP

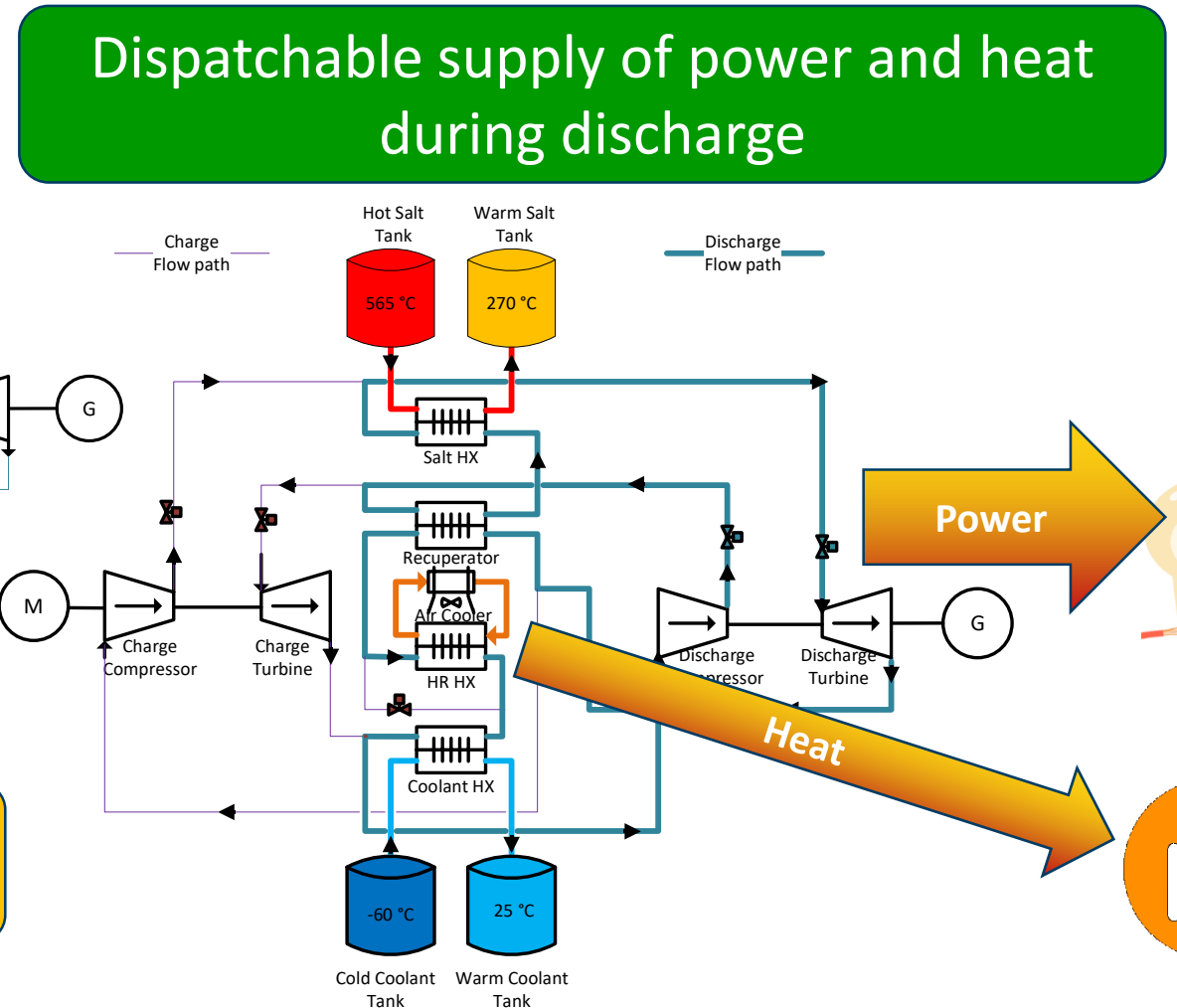
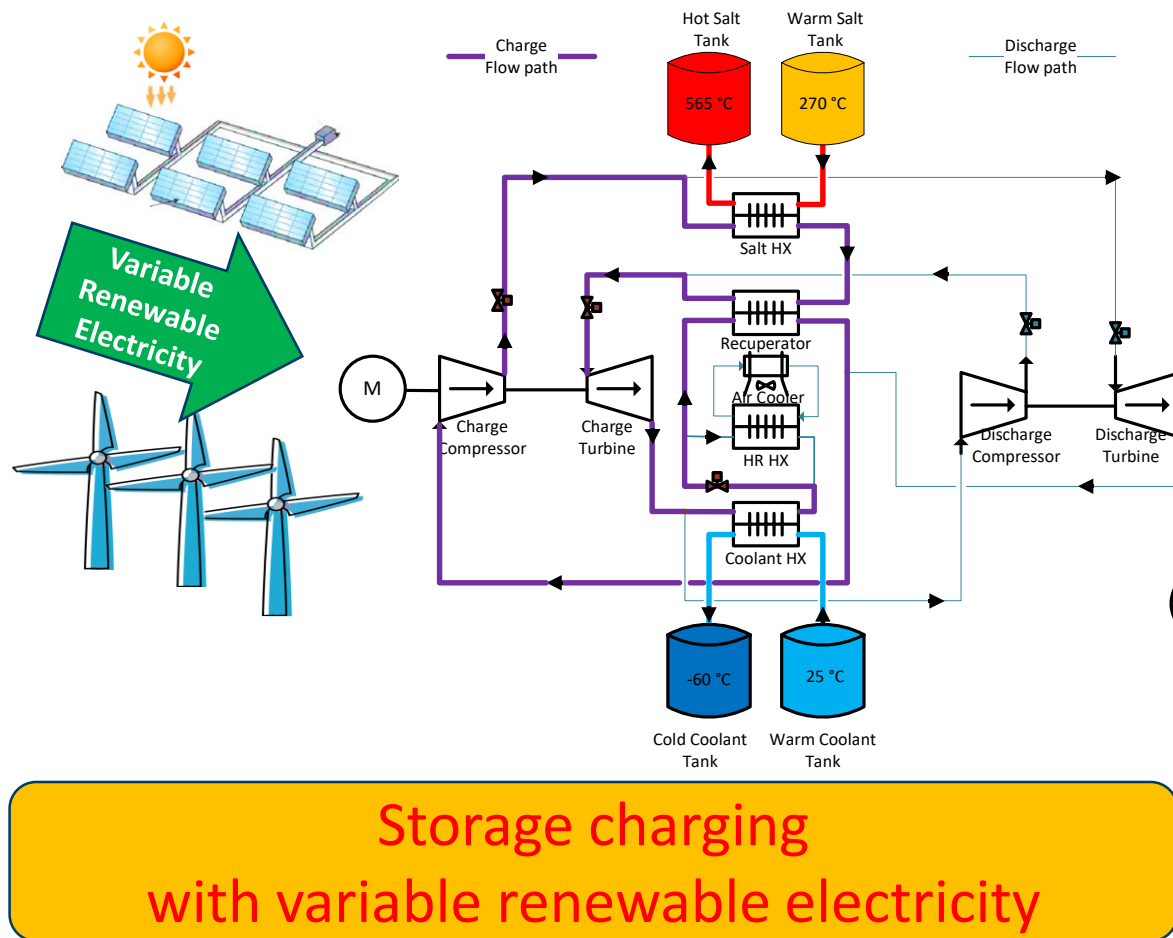


Give Coal Plants a Second Decarbonized Life



Source: RWE

Pumped Heat Electricity Storage may further increase round trip charge/discharge efficiency to over 60%





Thank you!

You can find more information at

<https://4echile-datastore.s3.eu-central-1.amazonaws.com/wp-content/uploads/2020/09/01031505/200928-GIZ-Chile-ExecSummary-v6-English-corrected.pdf>

<https://player.vimeo.com/video/554122161>