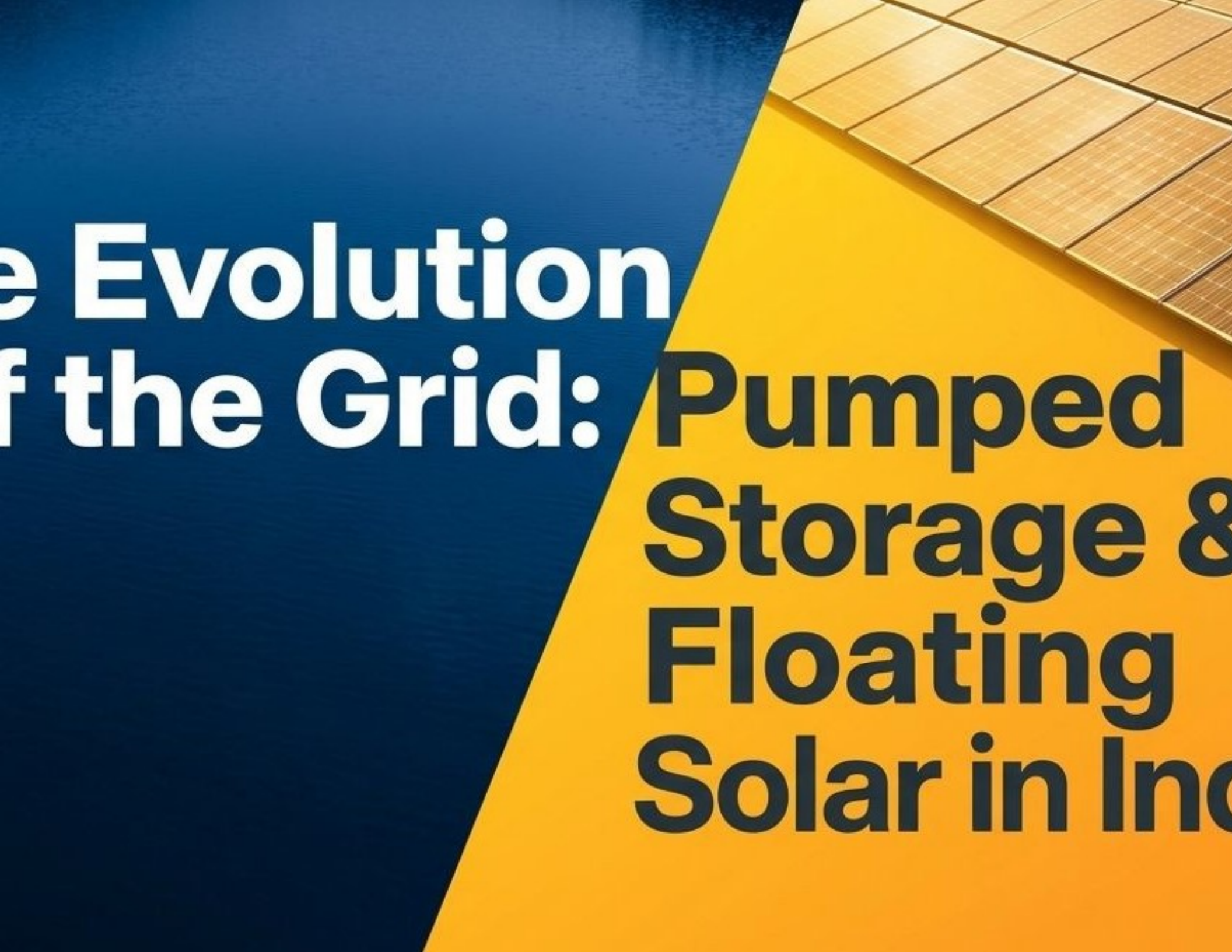


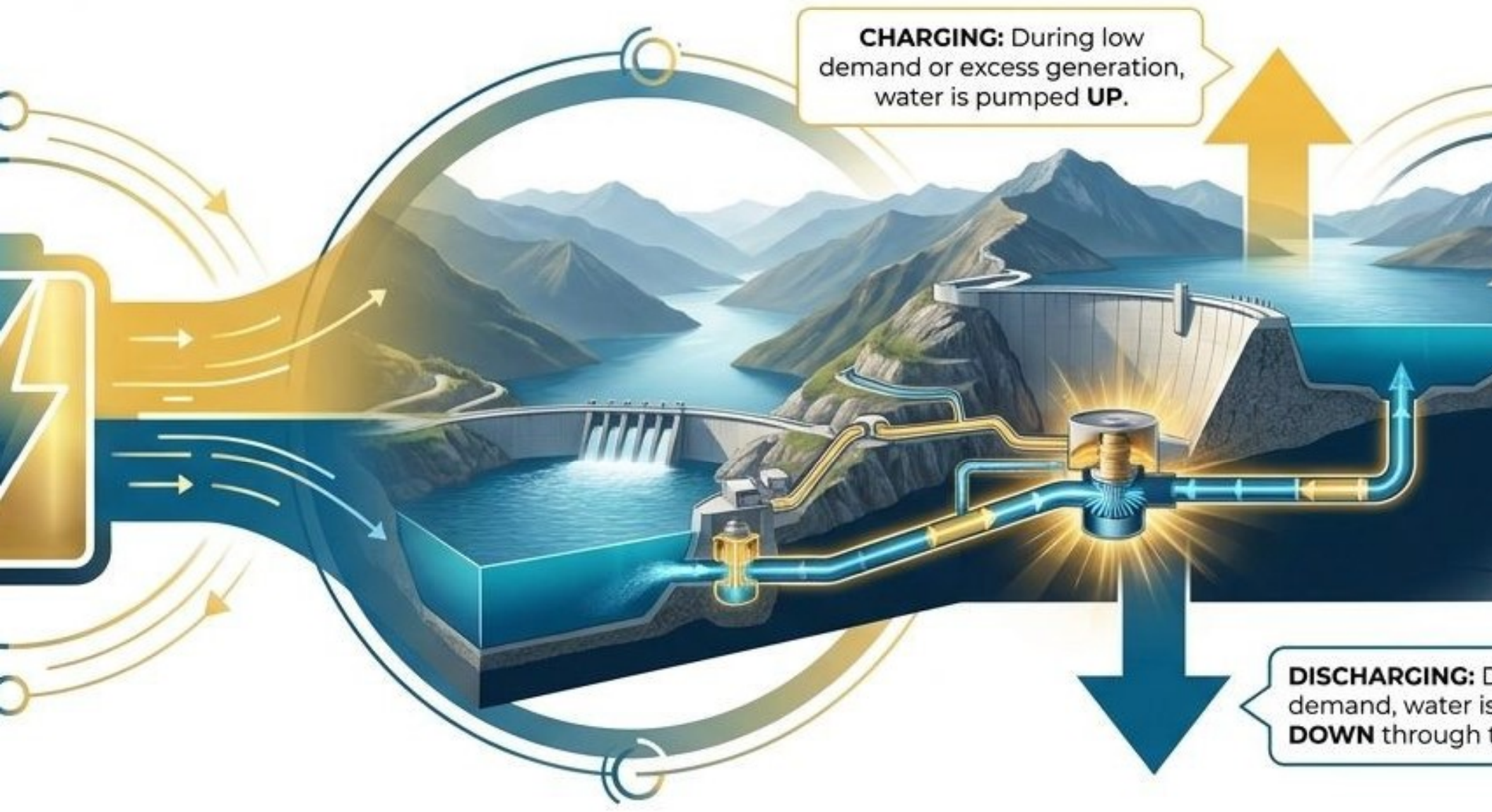


**e Evolution
f the Grid:**

**Pumped
Storage &
Floating
Solar in India**

'Water Battery': Storing Potential Energy for the Grid

A Pumped Storage Hydro Power Plant (PSP) operates as a massive, geological battery. It provides a counterweight to the intermittent nature of renewables like solar and wind.



Part 1. A Continuous Cycle of Pumping and Generating

DAYTIME / PUMPING MODE



NIGHTTIME / GENERATING MODE



Trajectory: Targeting 100 GW PSP Capacity by 2035

100 GW

Energy capacity
(including)

100 GW

Capacity

100 GW

Under construction



~26

Total identified

>75

Under survey

**THE TARGET: 100 GW
PSP capacity by 2035-36**

Electric Infrastructure: India's Operational and Upcoming Mega-Pro

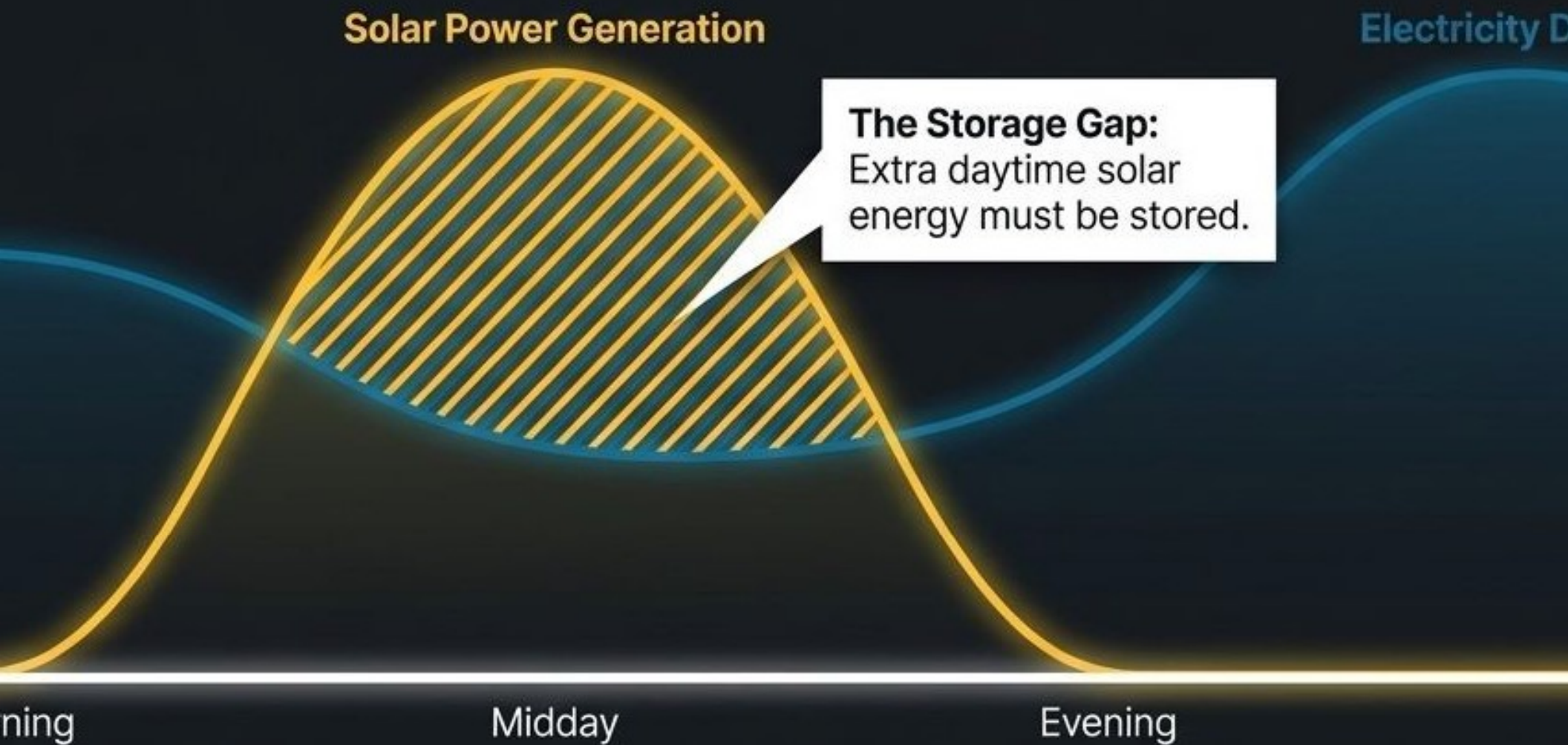


ANCHOR
Upper S



Expected to
anchor for large
integration by 20
intermittent re
rapid-dispat

World's Vulnerability: The Mismatch Between Solar Supply and Peak Demand

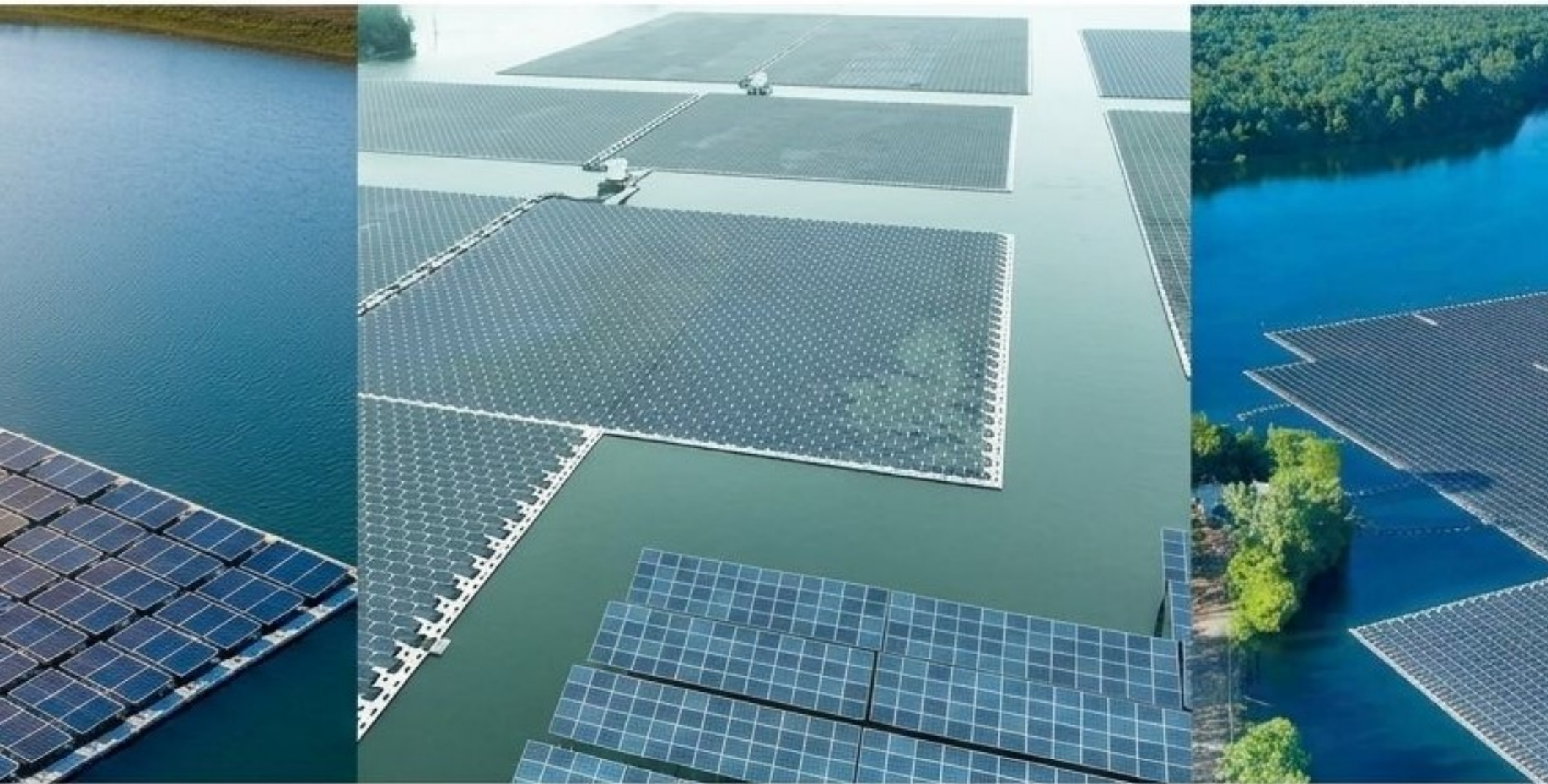


1. Demand peaks when the sun is at its lowest

2. Demand peaks when the sun goes down

3. Water Batteries store energy when the sun is at its lowest

...a Innovation: Activating Reservoirs with Flood



...relying on distant land-based solar farms, massive photovoltaic arrays are being deployed directly onto the water surfaces of the Pumped Storage plants that

Upper Reservoirs

✓ Lower Reservoirs

✓ Dam Water Sur

Logistic Multipliers: Why Hybrid Systems Outperform Standalone Tech

Stand-Alone Solar PV	Stand-Alone PSH	Hybrid Floating
✗ Requires massive new land plots	✗ Requires dedicated geological sites	✓ Requires NO additional land (utilizes existing reservoirs)
✗ N/A	✗ High evaporation risk in hot climates	✓ Floating panels prevent water evaporation, drastically reducing evaporation
✗ Panels overheat, losing efficiency	✗ Standard turbine efficiency	✓ Reservoir water cools panels from beneath, increasing photovoltaic yield
✗ Intermittent (Daytime only)	✗ Reliable, but relies on grid power to pump	✓ Creates a perfect localized energy storage loop

Our Closed Loop: Working Principle of the Hy

generates
from



2. Excess power is instantly directed to run massive dam pumps.



The problem (excess daytime sun) literally powers the solution (pumping water up), held precisely until the grid needs it.



4. Sun sets; grid experiences peak evening demand.



5. Water is released downward through turbines, generating electricity dispatched to the grid.

Key Points: Navigating the 5-to-10 Year Path to Implementation

Environmental Scrutiny

Rigorous ecological studies necessary to assess impacts on existing reservoirs, local flora, and hilly terrains.



Initial Cost

High upfront capital costs for heavy civil construction and specialized engineering.

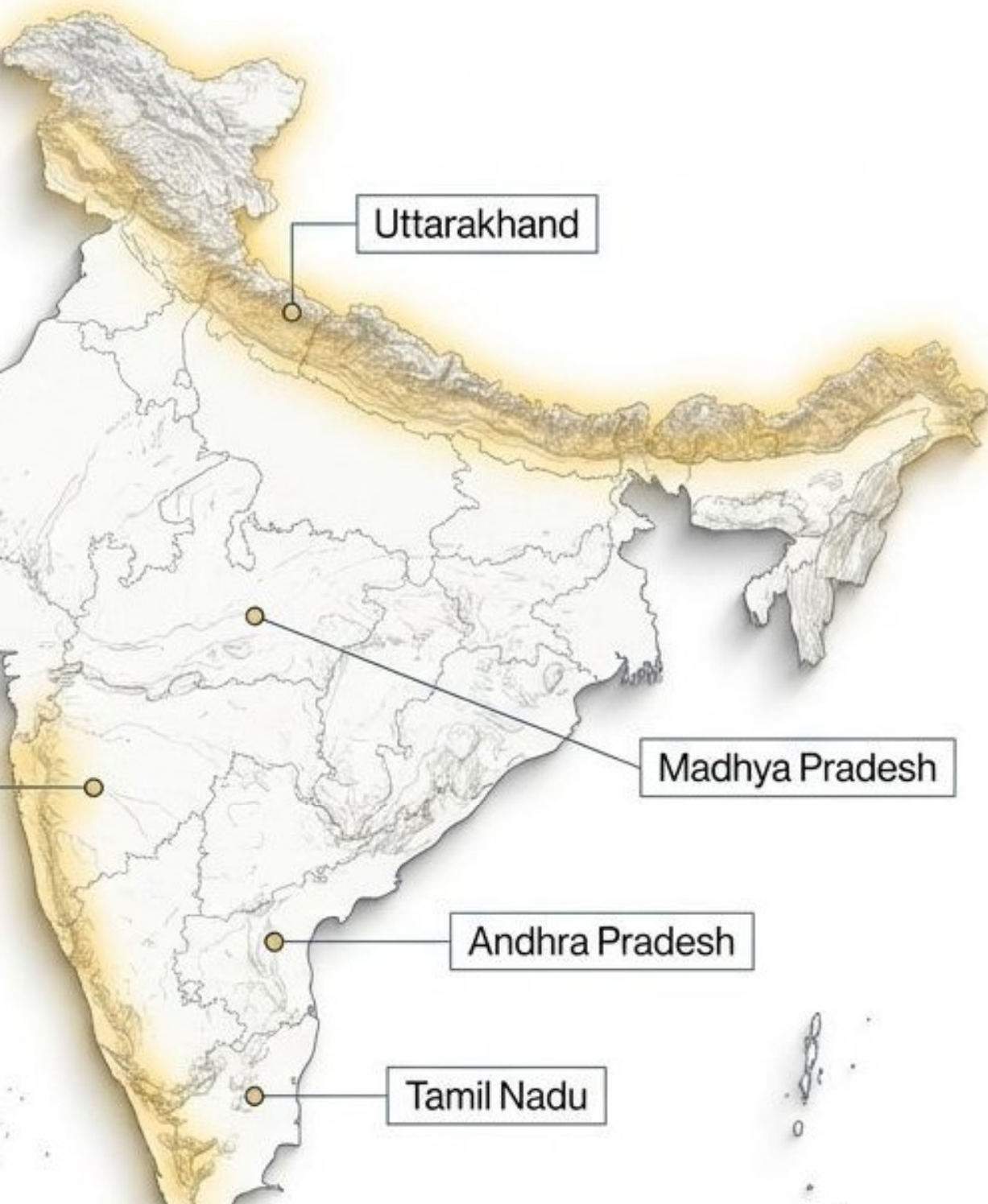


Water Availability Assessments

Ensuring adequate and sustained reservoir capacity across shifting seasonal and regional climates.



Geography: Activating the Western Ghats and



Why India

A perfect convergence of solar expansion, infrastructure, and an abundance of infrastructure.

Policy Tail

State and federal governments actively accelerating by providing vital support, charge waivers and integration programs.

**consider the combination of Pumped Storage
and Floating Solar as the single strongest solution
for India's future renewable grid.**