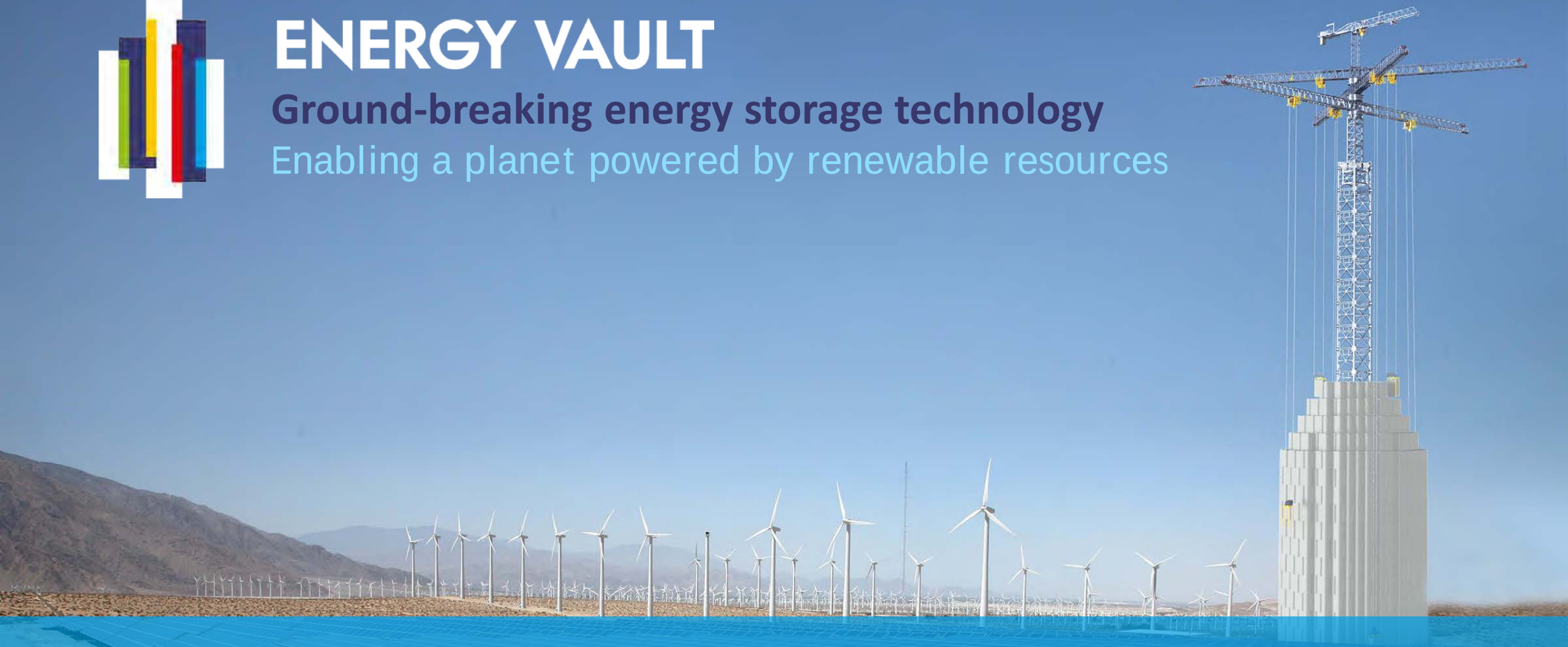
ENERGY VAULT

Ground-breaking energy storage technology

Enabling a planet powered by renewable resources



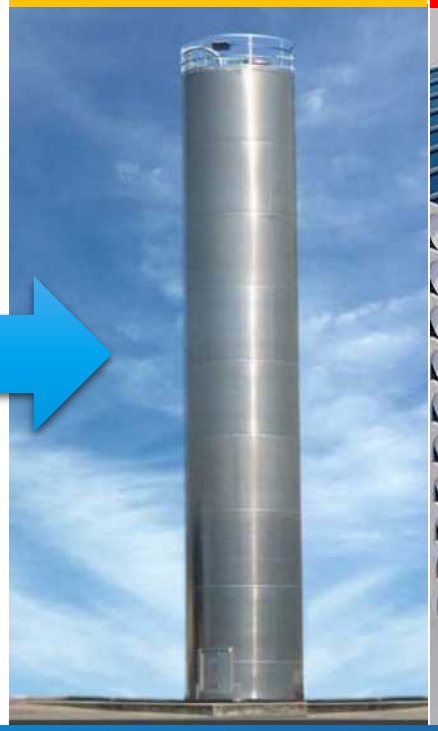
Iterated From Pumped Hydro to Energy Vault Tower:

Better Cost, Performance and Environmental Impact than Pumped Hydro

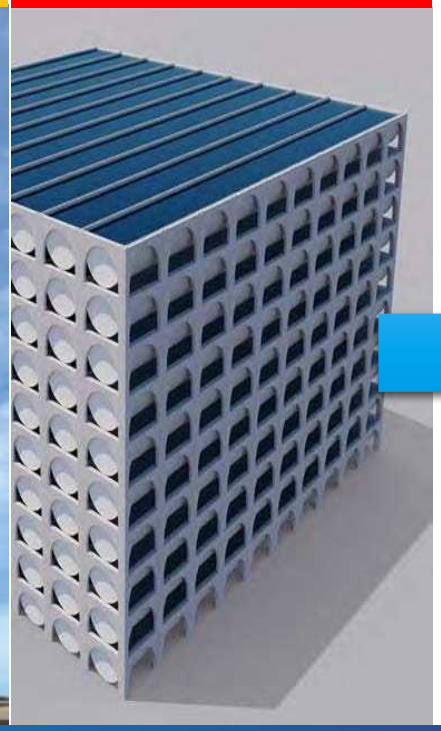
1. > 80% round trip efficiency
2. $250/kwh capital cost or lower
3. More flexible: including modular, scalable
4. Lower negative environmental impact
5. Not dependent on topography or geology
6. No reliance on water for operation

Pump Hydro

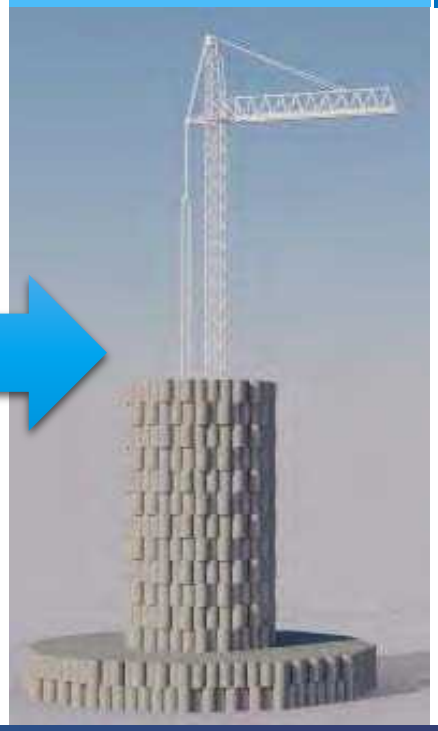
Concrete Cylinder pumped hydro



Arc Water Gravity Tower



2 Arm Crane
1MW - 10 MWh



Energy Vault - 6 Arm Crane
1-4MW with 20-35 MWh storage

Tower Combines Proven, Existing Technologies:

Orchestrated with cutting edge computing power and software automation

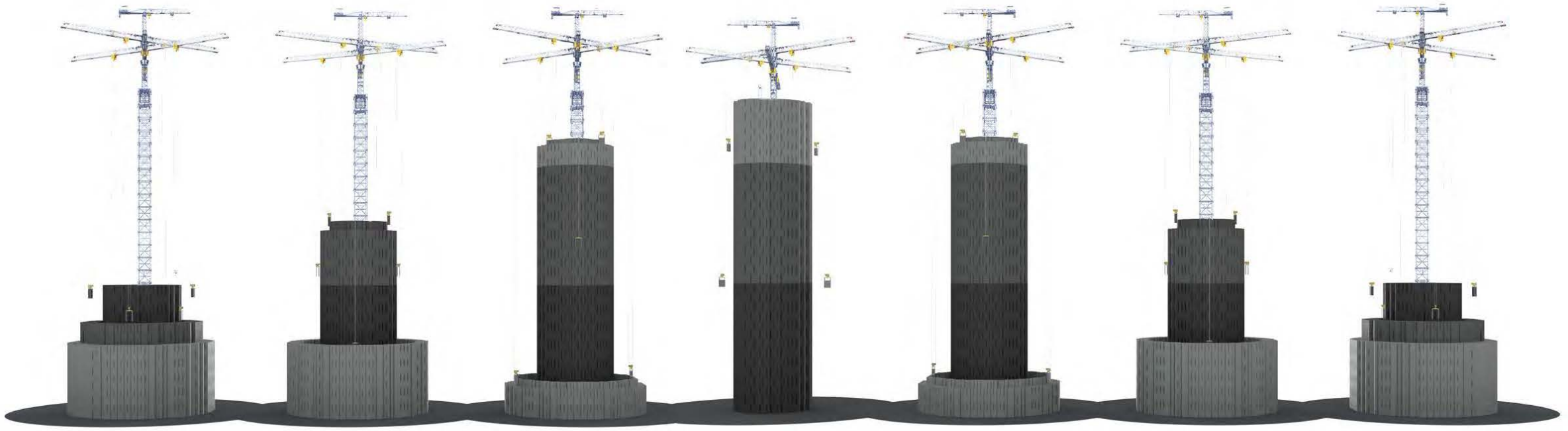
ENG CRANES · idealab. From ideas to successful companies · PÖYRY · CEMEX · Nidec · GE

Crane Industry	Shipping Industry	Concrete Industry	Generator Industry

Energy Vault Brick Tower Operation

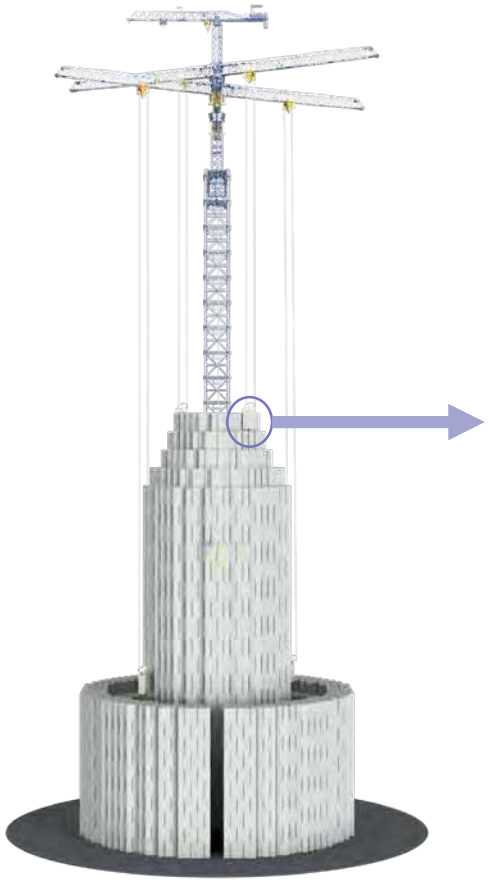
Charging and Discharging

- Energy Vault places bricks, one top of another, to store potential energy and lowers bricks back toward ground, to release energy
- Fully automated 6-arm crane operated by software, provides 1-5 MW of electricity without interruption
- Can charge and discharge between 4 and 50 hours depending on product and customer needs



Proprietary 35 Ton Concrete Block Cutaway

Local Construction



1. High-performance concrete top
2. Internal structure
3. Sand materials or construction waste materials that would otherwise have to be landfilled or treated at high costs

4. Steel plate on corners for lifting
5. High-performance concrete bottom

Why Energy Vault

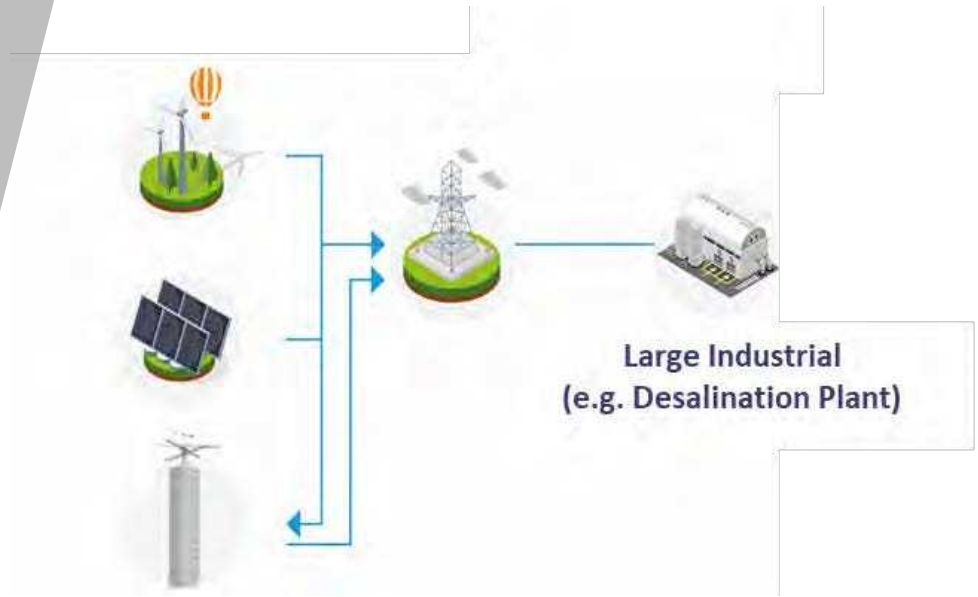
In emerging markets & developing countries

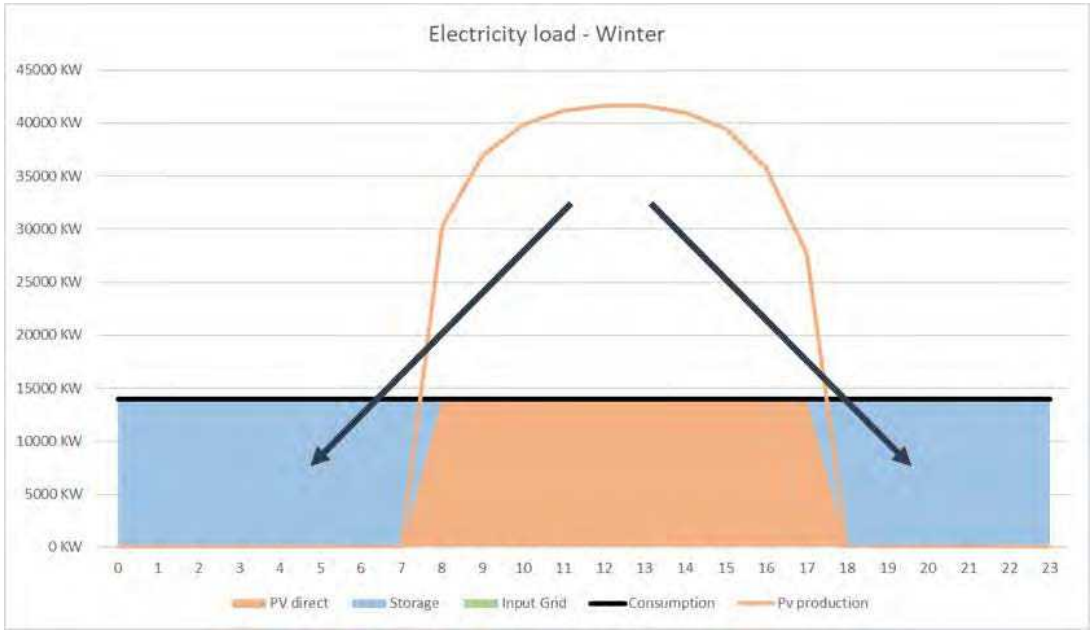
Key Advantages:

- Charge in 8 Hours
- CAPEX Estimate $250 / KWh
- Minimal OPEX (<1% of CAPEX per year)
- 80%+ Round Trip Efficiency
- 30+ years Design Life
- Operating Temperature Range: -20° to +55°

Use Cases:

- Defer Renewable Energy Delivery
- Fossil-fuel Transition
- Industrial / Small city - Off Grid Plants
- Decrease Need for Infrastructure Expense
- Decentralized energy production

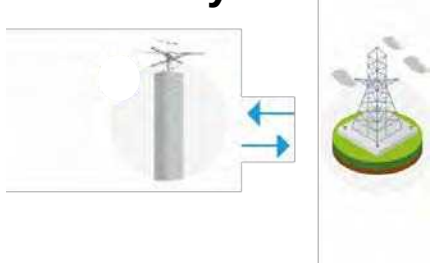




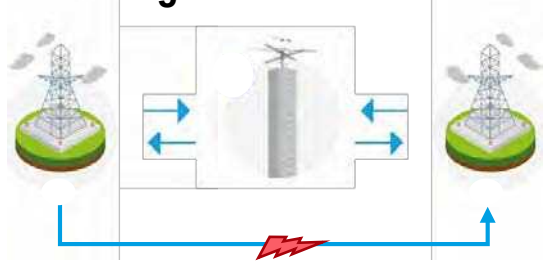
Applications:

Off grid systems, ancillary services, increased grid efficiency and reliability, with solar and wind aligns supply of energy to demand

Ancillary services:

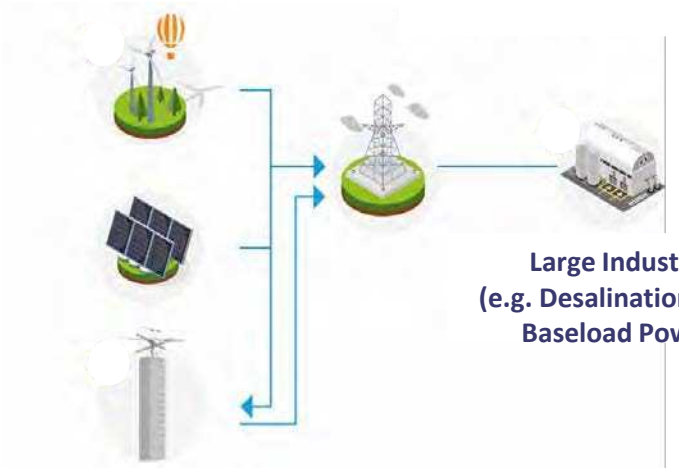


Relieve congestion of current infrastructure:



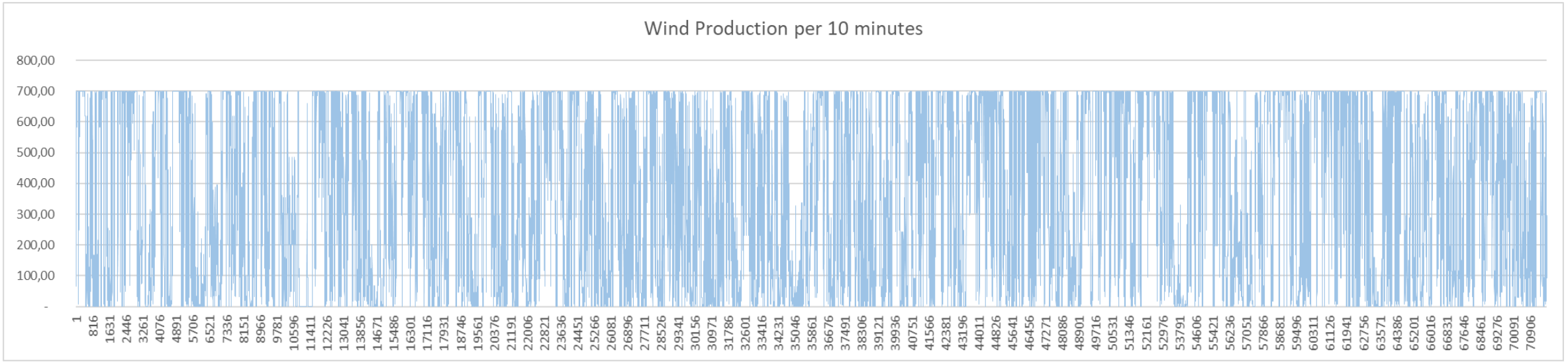
PV / wind plus storage:

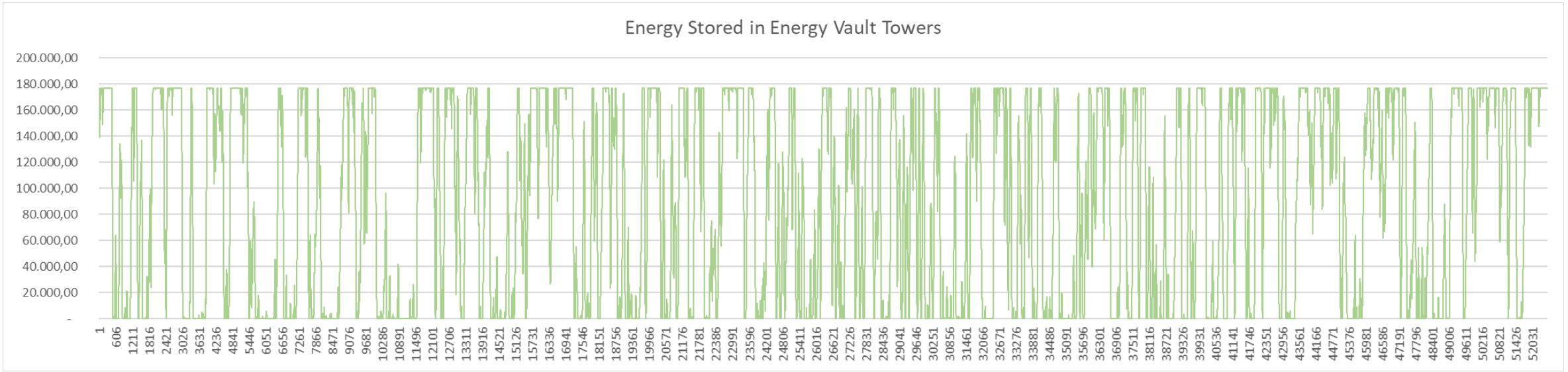
Off grid / mini grid systems:



Storage

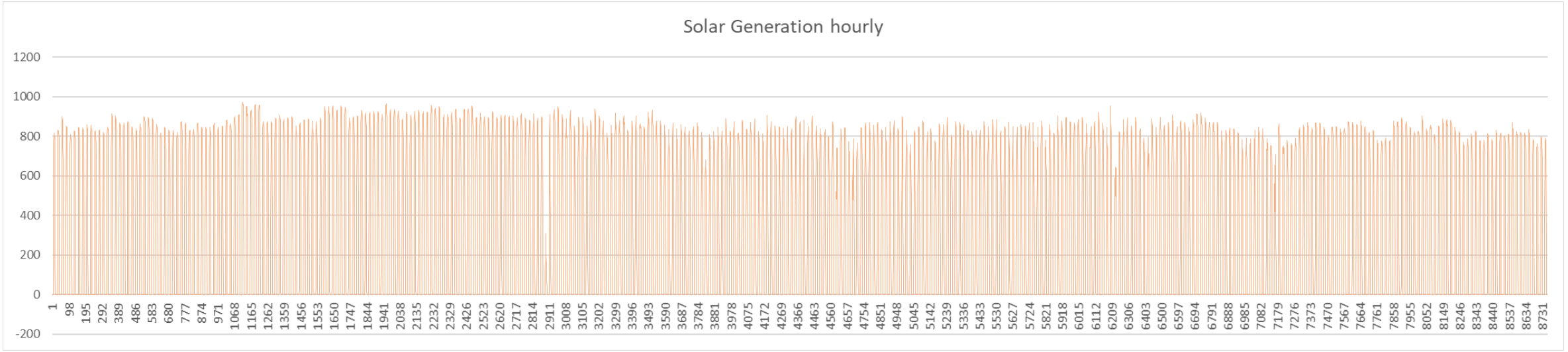
Combination with wind

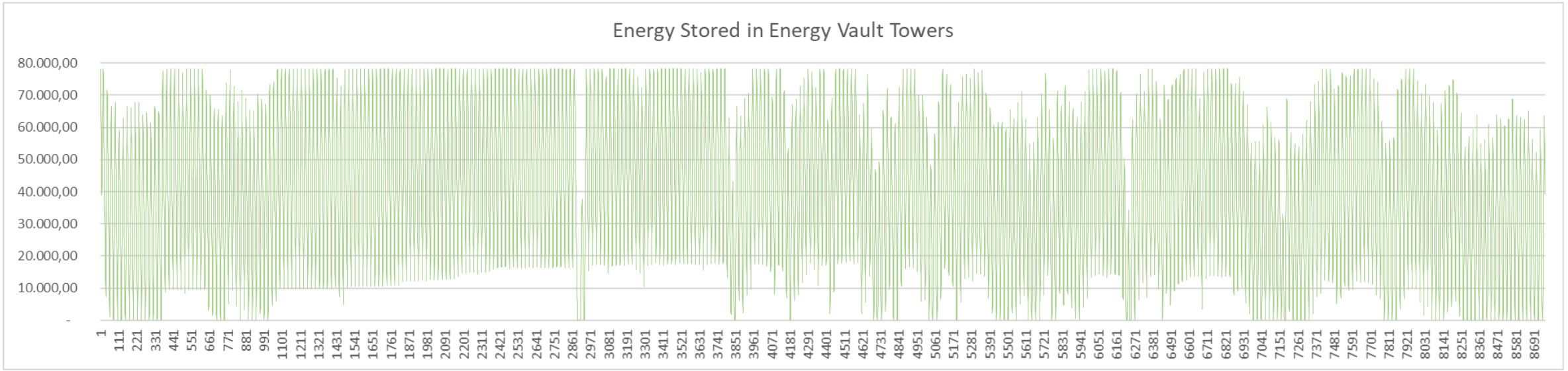




Storage

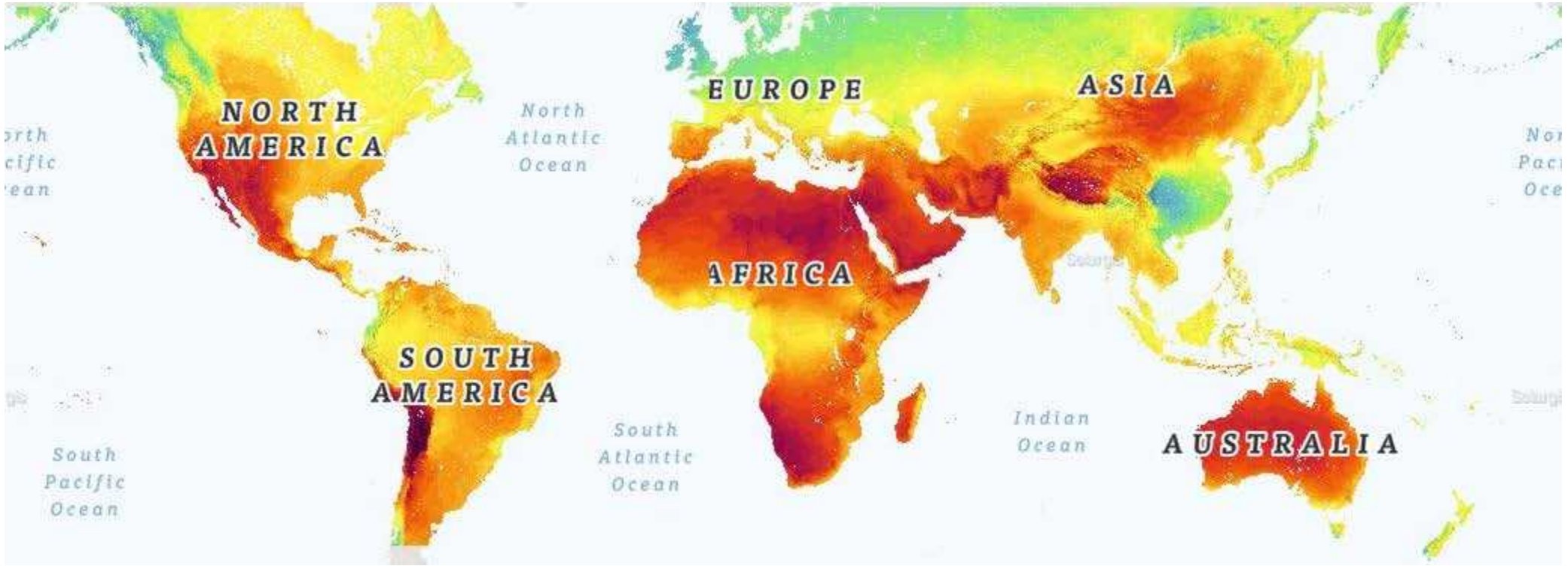
Combination with solar





Analysis of Solar Irradiance

Emerging Economies

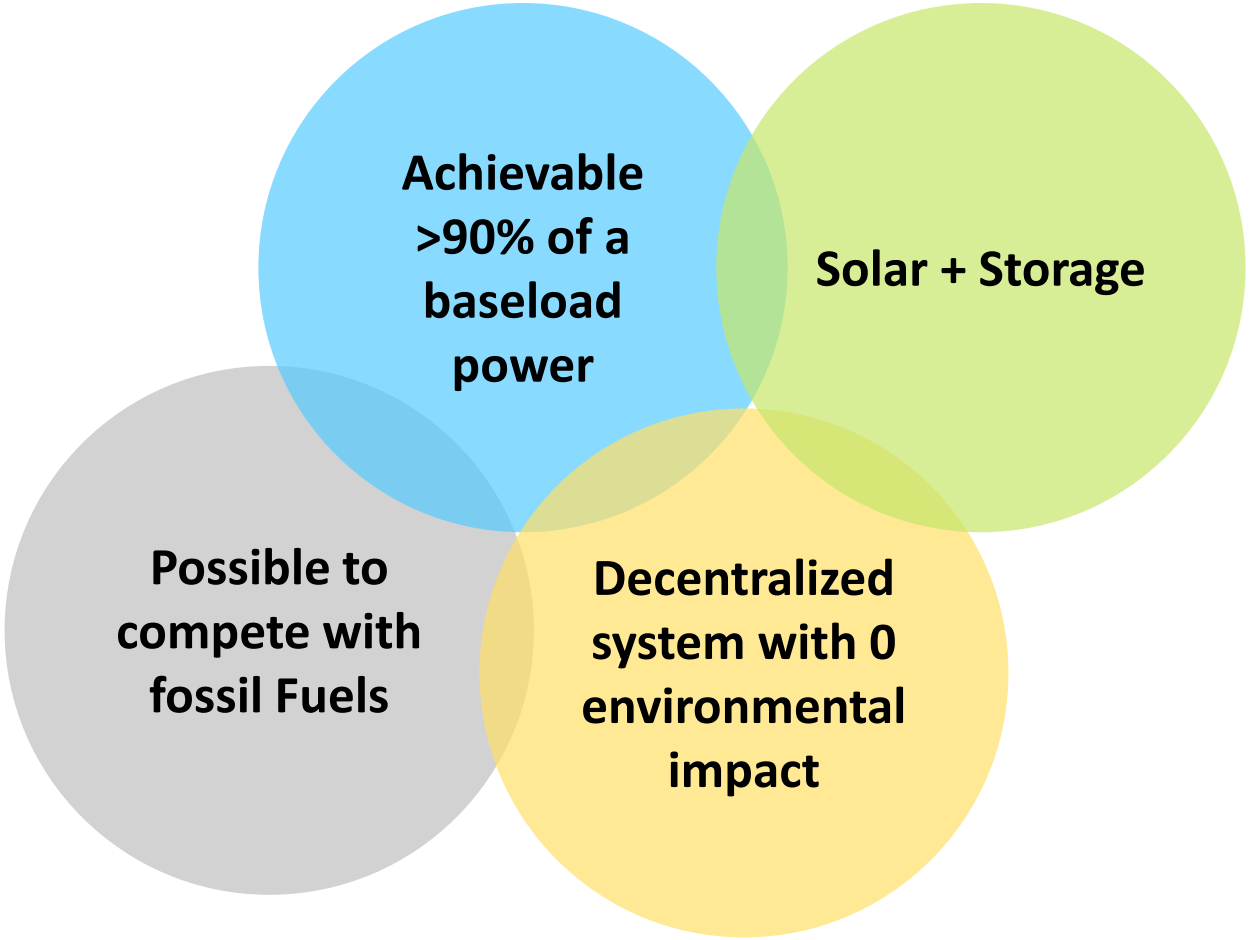


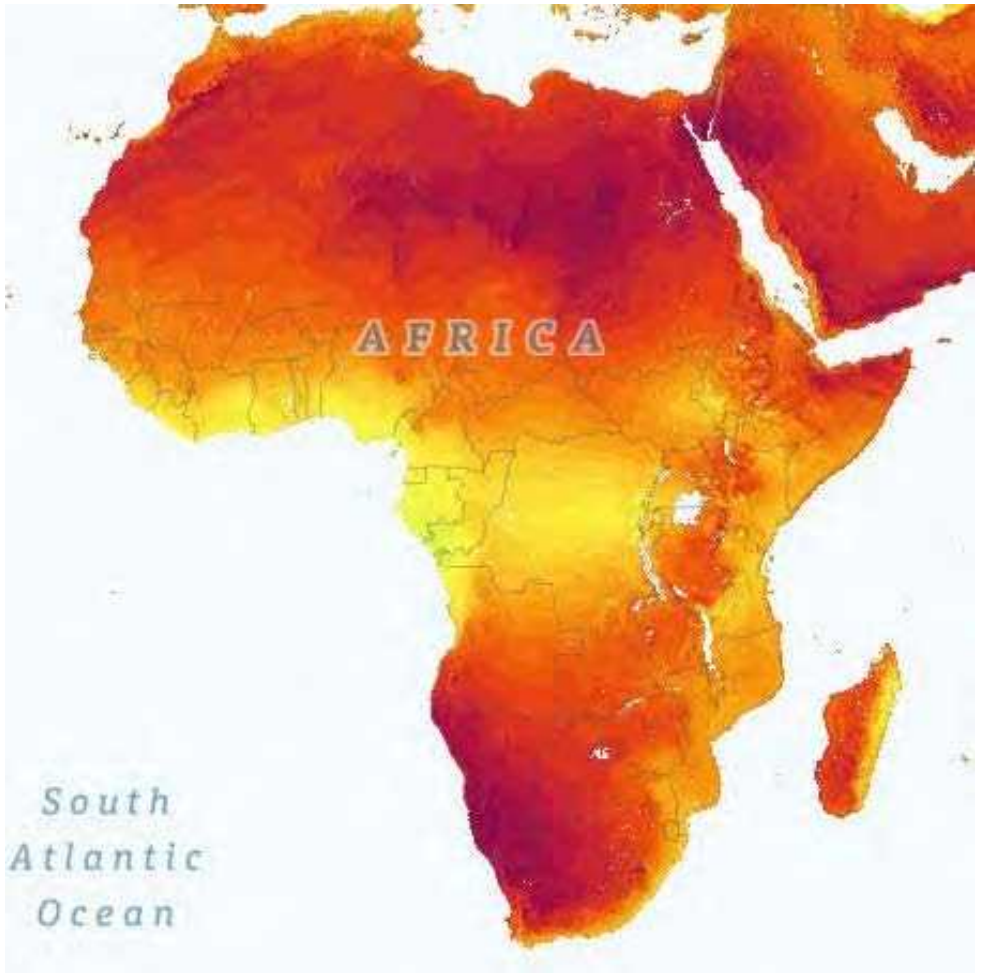
Emerging Economies:

- **Brazil**, **Chile**, China, **Colombia**, Czech Republic, **Egypt**, Greece, Hungary, **India**, Indonesia, Korea, Malaysia, **Mexico**, **Morocco**, **Qatar**, **Peru**, Philippines, Poland, Russia, **South Africa**, South Korea, Taiwan, **Thailand**, **Turkey,** and **United Arab Emirates**

Analysis of Solar Irradiance

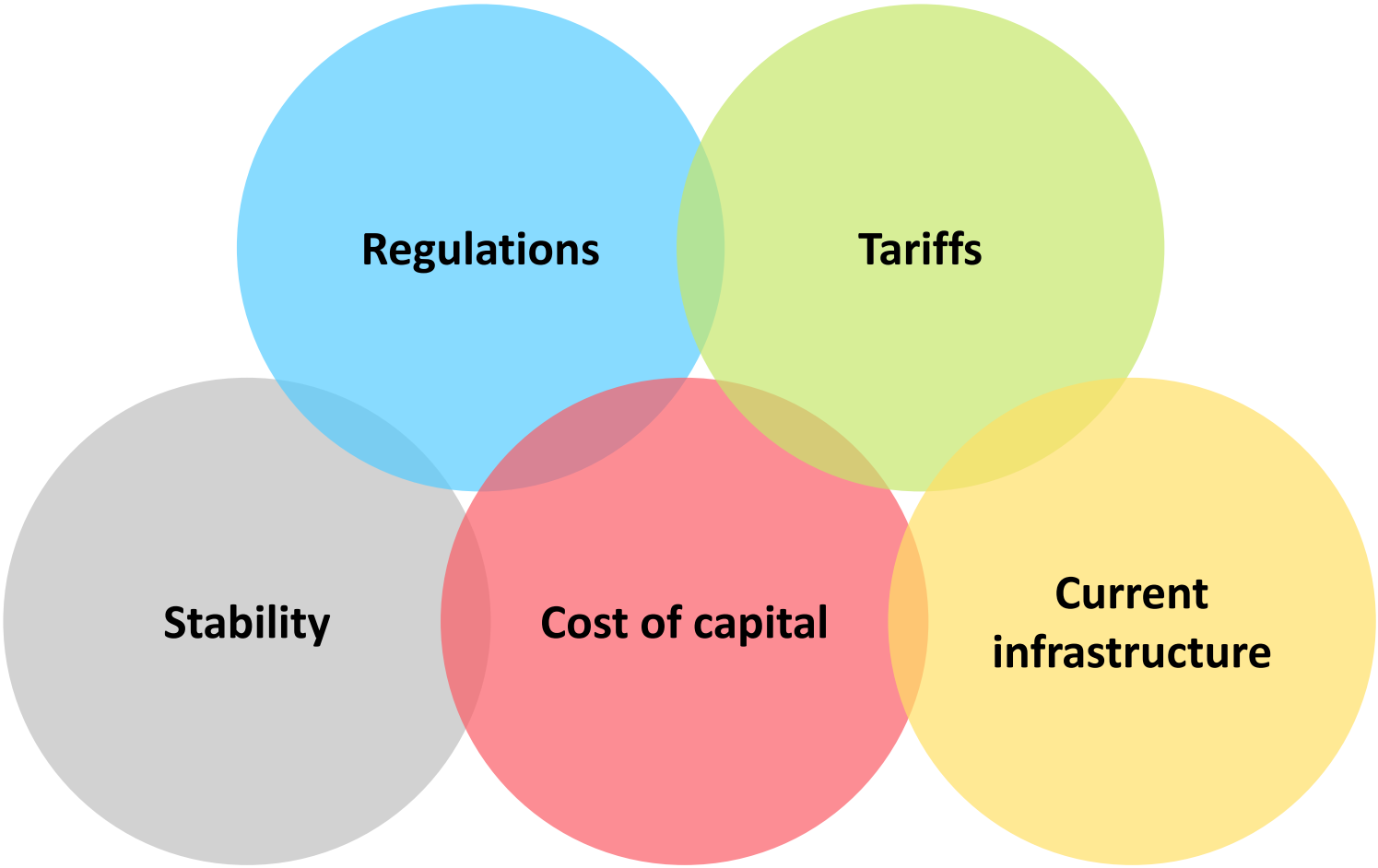
Africa: Developing countries with large solar potential





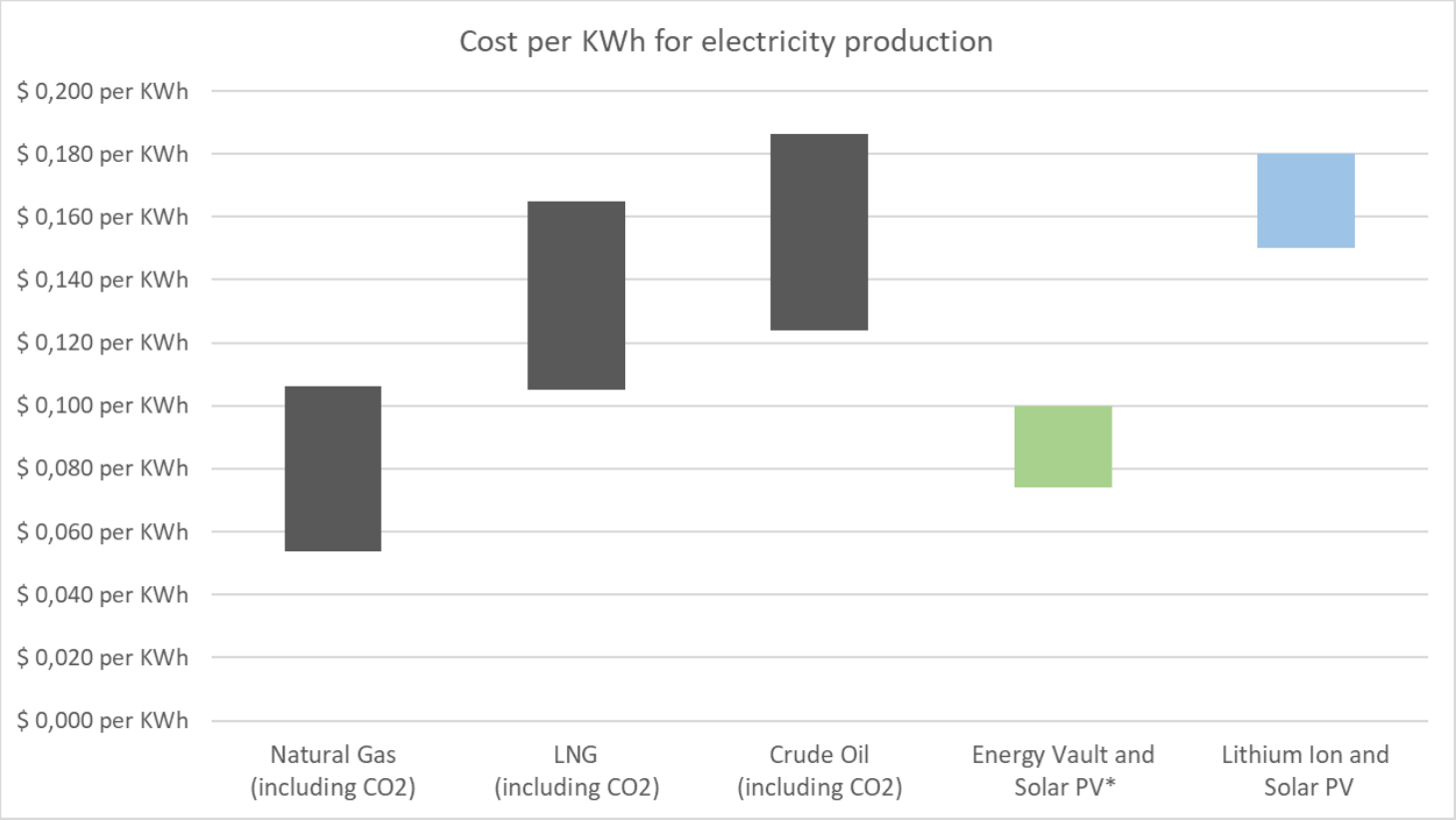
Analysis In the implementation of storage

Problems in emerging and developing countries



Example of Baseload Power – LCOED

Energy Vault combined with Solar is less expensive than Oil and LNG and competes with Natural Gas



- Energy Vault plus Solar PV is cheaper than Oil and LNG and is able to compete with Natural Gas.
- Lithium Ion combined with Solar PV can compete with Oil but is still more expensive than LNG and Natural Gas.
- With Energy Vault for the first time, it is possible to provide ~24/7 dispatchment of electricity at a price which can compete with Fossil fuels.

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