Malta Pumped Heat Energy Storage

Ben Bollinger

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Malta is Long-Duration Energy Storage

Malta’s grid-scale pumped heat energy storage system (PHES) is a low-cost, long-duration solution which will enable the global energy transition.

- **Long-Duration**: 10 – 200 Hours
- **Grid-Scale**: 10 – 100 MW+
- **Low-Cost**: <$100/kWh at 10h
How it works

**Charge: HEAT PUMP**

- ELECTRICITY → Power Unit
- HEAT → Hot Reservoir
- Hot Reservoir → Cold Reservoir
- Cold Reservoir → Power Unit

**Generation (Discharge): HEAT ENGINE**

- HEAT → Hot Reservoir
- Hot Reservoir → Power Unit
- Power Unit → ELECTRICITY

**Examples**

- Charge: HEAT PUMP
  - Air conditioning
  - Refrigeration

- Generation (Discharge): HEAT ENGINE
  - Power generation
  - District heating
Malta PHES: 
Recuperated Air-loop Brayton-cycle Heat Pump/Heat Engine

“Necessary, Sufficient, and Doable”


Technical Team Focused on Execution

Erhan Karaca  
VP Engineering  
25+ years in power gen  
13 years with GE USA

Janina Hippler-Nettlau  
Sr. Project Engineer  
13 years in power gen  
CSP construction, maint.

Mert Geveci, Ph.D.  
Director, Control Systems Eng  
16 years controls at Cummins, GE Energy, GE Renewables

Kurt Waldner  
Product Manager  
25 years with GE USA Services, Storage, LTSA

Samar Shah  
Technical Lead, System Integration  
12 years mech & process  
6 years energy storage

Tom LeRoy  
Technical Lead, Plant Sys Integr  
35 years at GE USA  
Led several CCS NPI efforts

Elyse Doyle, PMP  
Project Manager  
5 years at DNV  
6 years in energy industry

Pravallika Vinnakota  
Lead Engineer, Modeling & Sim  
10 years appl. & simulation  
8 years at The Mathworks

Escarlata Muñoz  
Project Engineer  
7+ years power plant design  
CCGT and CSP electrical sys

Harsh Oke  
Technical Lead, Turbomachinery  
21 years at GE USA  
CCGT Design, Testing, Cost

Finn Runkel  
Sr Engineer, Performance  
13 years in power gen  
CSP plant performance

Bao Truong, Ph.D. PE  
Technical Lead, Strategic Initiatives  
10 years power industry  
8 years nuclear reactor design

Benjamin Bollinger, Ph.D.  
VP Strategic Initiatives  
14 years startup experience  
10 years CAES and TES

Tian J. Ong  
Lead Engineer, Process  
10 years process engineering  
Chemical, process, thermal

Michael Geyer, Ph.D.  
Managing Dir., Malta Europe  
Developed 6 CSP projects  
450 MW CSP scratch to close
Heat Exchanger Partner & Investor

The world’s leading heat exchanger company
One of the world’s largest turbomachinery manufacturers
Engineering Partner & Investor

One of the world's largest methanol producers