

ENERGY-009 / REV A

Geothermal/ORC and storage integration concept

STATUS: CONCEPT / UNQUALIFIED. Cost unknown. Patent review not performed. EU conformity not determined.

Source and requirements

Original extraction paragraph references: 888, 899, 9394

Source aggregate geothermal claim 543.6 GWe; proposed 14.5 T toroidal storage and 12.5 MWh per node. These are not demonstrated facilities.

Candidate manufacturing route

Fab 2: specialist precision components

Fab 3: mechanical equipment

Fab 4: qualified pressure/cryogenic fabrication

Fab 5: grid and process integration

Governing models

E30, E31, E32, E33, E34, E35, E54 — see the English formula register; use only within each stated domain.

Critical missing evidence

Resource exploration, sustainable well flow and reservoir decline

Actual cycle properties, net generation and auxiliary loads

Storage inductance/current, support, cryogenics, quench and grid response

Cost model and missing quotations

$C_{unit} = (\text{materials} + \text{machine/setup} + \text{energy} + \text{labour} + \text{QA} + \text{overhead}) / \text{accepted units}$. Record currency, price date, batch quantity, yield, rework, contingencies and uncertainty. Avoid double-counting costs included in machine rates. No supplier quotes have been obtained.

Exploration and wells

Power island, cooling and grid connection

Specialist storage hardware, cryogenics and qualification

Patent-review record

Search seed (not executed): geothermal organic Rankine cycle superconducting magnetic energy storage toroidal coil

Required records: jurisdictions, search dates, CPC/IPC classifications, patent families, publication PDFs, independent claims chart, legal status and expiry/lapse review. Product geometry and intended use must be frozen sufficiently for a meaningful review.

Patent publication PDFs are not attached because no product-specific patent search or claims assessment has been performed. This dossier is not a patent, clearance opinion or claim of novelty.

EU and other regulatory applicability

Geothermal drilling, environmental and grid permits

Pressure, electrical and machinery legislation as applicable

Specialist superconducting equipment assessment

Starting sources: EUR-Lex Regulation (EU) 2023/1230 and Directive 2014/68/EU where relevant; EPO Espacenet and official registers for patent research. Full applicable standards, legal classification and jurisdiction-specific approvals must be verified.

Acceptance and reproducibility

Define the product measurands, test environment, tolerances, calibrated instrumentation, lot traceability and a statistically justified sampling plan. Numerical convergence, manufacturing yield and service reliability are separate criteria. No 99% feasibility or 98% product-equivalence claim is established.

Release gate

Do not treat a proposed route as a toolpath. Complete geometry, material allowables, process qualification, simulation verification, prototype tests, inspection, conformity review and responsible engineering approval before release.