REPOWERING COAL FLEETS
FAST, REPEATALE, LOW COST, CLEAN POWER FROM EXISTING ASSETS

OCTOBER 2021
‘LOCKED-IN’ COAL WILL EXCEED THE CARBON BUDGET

Coal contributes almost half of total global carbon emissions

Half of the global coal fleet is less than 20 years old

• More than $1 trillion of capital invested in the existing coal fleet has yet to be recovered

• It is entirely unrealistic to assume that we will abandon these assets before the end of their useful life
  • Jobs
  • Electricity generation
  • Tax revenue
  • Reliability
WHAT IF WE COULD ‘UNLOCK’ THE GLOBAL COAL FLEET TO MEET NET ZERO?

Repowering separates the benefits of coal fleets from the emissions

- Requires high volume delivery models
- Applicable to large variety of plant and site conditions
- Must be low-cost
- De-risked project delivery
REPOWERING COAL: GOALS

Repowering coal fleets via a fast, repeatable system resulting in carbon negative plants that are cheaper to operate than before.

- Reduce engineering costs
- Reduce risk to create a low risk, attractive financial investment opportunity
- Reduce construction time
- Reduce nuclear regulatory scope
- Create massive economic value from imperiled assets
- Deliver highly competitive plants after repowering
- Long term socio-economic benefits
- Decouple energy from emissions
COST-COMPETITIVE COAL PLANT REPOWERING

Plant will be cheaper to operate after the conversion—with no emissions

Apply leading design, manufacturing, and assembly best practices
TEAM: TRANSFORMING A PROBLEM INTO AN OPPORTUNITY

• $1.4 million project underway
• Global team of experts

Advanced Reactor Vendors
Modeling Groups
Regulatory Stakeholders
Policy/ Env. Groups
Supply Chain Vendors
Customers/ Utilities

Project Team

TerraPraxis / Repowering Coal
These combined approaches have already reduced design time for a state-of-the-art data center from 10 months to 6 hours and reduced cost and construction time by 40%.
STANDARDIZATION AND SEISMIC ISOLATION

Figure 1. Numerical model for the KP reactor building, isolated using 17...
DESIGN SPRINT 1
FINISHED PRODUCT

- Flexible, dispatchable clean power generation to complement renewables

FINISHED PRODUCT AND SUBSEQUENT OPPORTUNITIES

SUBSEQUENT OPPORTUNITIES

- Co-generation of power, heat, and hydrogen
- Lower operating costs
- Atmospheric carbon capture
- Synfuels production
- Clean energy based economic development
- Attracting new energy intensive industries: metals processing; data centres; chemicals
CLIMATE X PROSPERITY

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