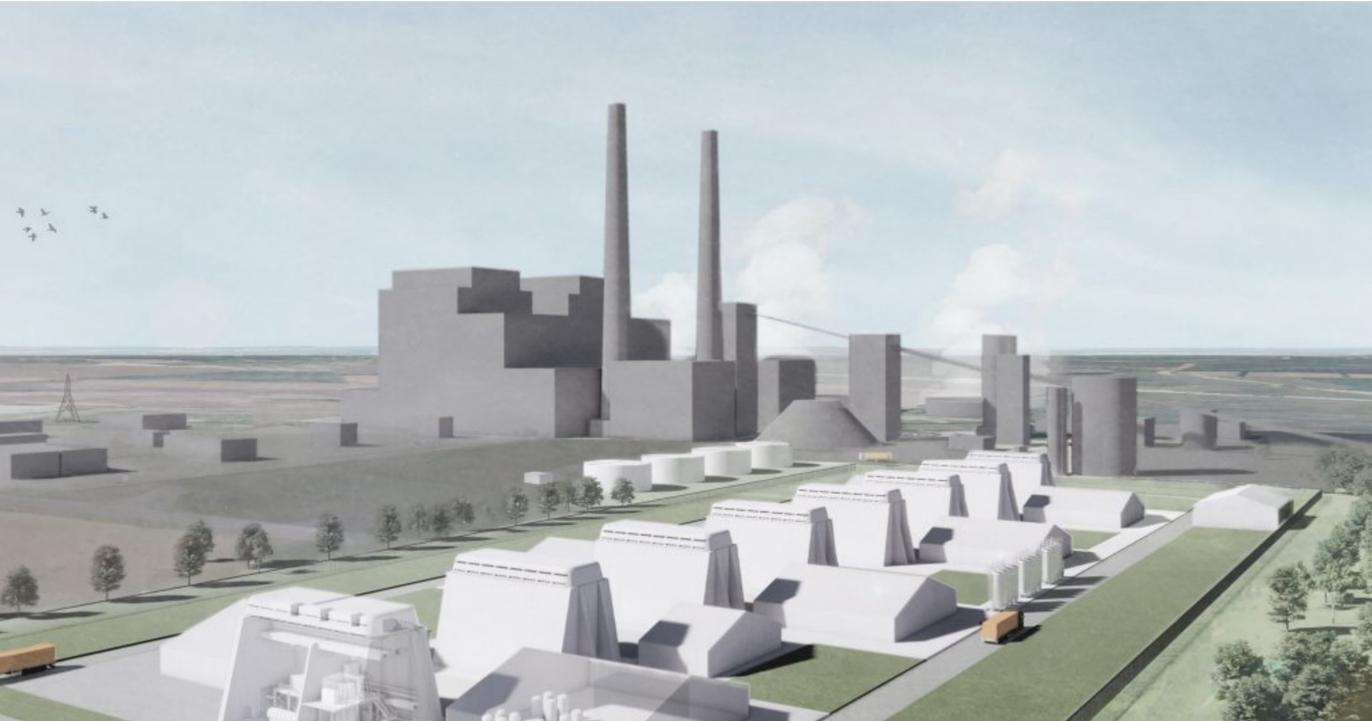


# New Civil Engineer



INNOVATIVE THINKING

## Ambitious plan to re-engineer world's coal-fired power stations for modular nuclear reactors

04 NOV, 2021 | BY ROB HORGAN

Bryden Wood has announced ambitious plans to repurpose the world's coal fired power stations to accommodate modular nuclear reactors in a bid to decarbonise the global energy sector.

Bryden Wood's *Repurposing coal* proposal has been drawn up with climate-focused non-profit Terra Praxis.

Unveiled at COP26, the plan suggests replacing coal fired boilers at existing power plants with Advanced Heat Sources (Generation IV Advanced Modular Reactors) to deliver a substantial portion of the clean electricity required to achieve net zero carbon emissions by 2050.

Bryden Wood is creating what it describes as "a platform solution" that will make this possible at scale and speed by transforming how projects of this kind are financed, designed, approved and delivered.

Bryden Wood founder Martin Wood said: "Instead of thousands of individual projects, we must have a unified approach where the design is simplified and standardised so that a much wider pool of designers, manufacturers and contractors can be involved to make this a reality as quickly as possible."

Bryden Wood is working with Terra Praxis, MIT, University at Buffalo, Microsoft and KPMG to standardise and optimise the following key elements:

- All processes including procurement, investment and approval
- Building and engineering systems
- Design, manufacture, assembly and operation
- Interactions between different supply chain organisations to enable greater collaboration

Existing coal-fired power plants have significant value in established markets for their power, grid connections, access to cooling water and experienced personnel necessary for the generation and distribution of reliable, affordable energy.

Installing Advanced Heat Sources to replace coal-fired boilers at existing coal plants will enable the continued use of existing infrastructure to produce continuous, emissions-free energy.

Existing coal plants vary widely so the engineering platform solution created by Bryden Wood will deliver the variety of solutions needed for different requirements and situations.

A standardised, customisable heat-transfer and storage system allows the new nuclear systems to "plug in" to existing coal plant infrastructure. A standardised cross-section design encloses the various types of reactor while being able to expand to deal with the increased space required.

Bryden Wood claims that a standardised, mass-customisable design solution will make it possible to use new algorithmic design tools to: assess coal plant viability for refurbishment; create initial concepts; and produce detailed design outputs for manufacturing.

Wood added: "This simplified design can be applied existing quickly by a wide range of designers. The structural components can be mass produced by existing manufacturers.

"Most of the on-site assembly can be completed by non-nuclear specialists. We're using platforms innovation and future design tech to repurpose plants in a scalable way. This initiative has the potential to break through the challenge of coal. It's complex problems like this that platforms exist to solve."

Initially, the project will be launched in the United States but is designed to be rolled out world-wide and to attract customers and supply chain partners to re-engineer coal plants in all critical locations.

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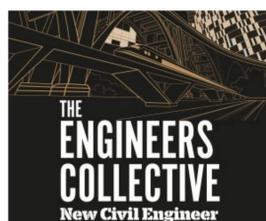


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