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Kärnfull and GE Hitachi Announce Small Modular Reactor Collaboration for Sweden

Sweden's energy consumption continues to grow and there is a demand for ever increasing amounts of clean, fossil-free and reliable supply. Meeting this challenge and fulfilling future demand will require innovative solutions. An important part of solving the sustainability puzzle launches today in Sweden with Kärnfull Next, the first Project Development Company to focus on small modular reactors (SMR) in Scandinavia.

Small modular reactors can provide utility and industrial customers greater flexibility than traditional reactor designs and can deliver clean, carbon-emission free energy that can be used to supply in several commodities including electricity, hydrogen, ammonia, synthetic fuels and industrial heat.

GE Hitachi Nuclear Energy has been selected as technology supplier to begin the process of establishing a number of small modular reactors in the region as soon as possible. The units' smaller size creates greater flexibility and carbon-emission free and reliable production of electricity, heat, or hydrogen where it is needed. Work has already begun with a handful of interested parties throughout Sweden but for these new reactors to become a reality, current legislation will need to be reviewed.

“It's in our company's DNA to break new ground and today's launch is a natural step, not least since we see the growing demand for our nuclear-only electricity contracts provided via our brand Kärnfull Energi. That we’re now able to take an active role at the cutting edge of nuclear energy supply is incredibly exciting. We've chosen our partners carefully to build a reliable supply chain that will allow us to deliver cost-effective and timely fossil-free energy,” says Kärnfull co-founder John Ahlberg.

“Throughout the winter we've all seen the importance of a reliable, dispatchable electricity production that can deliver when and where it is needed. In addition to electricity, we're able to deliver inertia and other stability services to the national grid, as well as fossil-free heat and hydrogen. The commercial demand will determine how to make best use of these units, their flexibility combined with the high output is key to their cost effectiveness. These reactors are designed to deliver around the clock, all year round, whatever the weather,” says Kärnfull co-founder Christian Sjölander.

A memorandum of understanding has been signed between Kärnfull Next and GE Hitachi for the BWRX-300, a 300-megawatt water-cooled, natural circulation SMR with passive safety systems. The

model leverages the design and licensing basis of larger boiling water reactors, a technology Sweden has significant experience with.

“Swedish authorities and subcontractors are used to working with these systems and components, speeding up projects. We’ve of course seen that the first ever BWRX-300 is scheduled to go online in Canada already by 2028,” says John Ahlberg.

“Sweden has significant experience with nuclear energy, and especially boiling water reactor technology,” said Jon Ball, Executive Vice President for GEH. “As industry and investors join forces to accelerate the energy transition, global interest in the BWRX-300 is rapidly growing and we are excited to be working with Kärnfull to bring this technology to Sweden.”

Kärnfull Next will now undergo an intense period of recruitment alongside discussions with their suppliers. Preparations of the planned development sites around Sweden will continue in parallel with investor discussions. Kärnfull has secured initial funding from Corespring Invest, an investment portfolio with a long track record of successful investments in cleantech and fossil-free energy sources. The portfolio is managed by Granitor Growth Management.

The Kärnfull team has considerable expertise of financing long-term projects. The investments are built on policy of low risk with the potential to attract a broad base of investors who may not necessarily have a history of investing in nuclear technology before.

With the finance, knowledge base and technology to meet the real world need for more on demand fossil-free energy the company is looking forward to the work ahead as they rebuild nuclear power in Sweden.

About Kärnfull Next

Kärnfull Next AB (”Next”) is a fully owned subsidiary of Kärnfull Future AB (”Kärnfull”), a non-political and independent cleantech startup based in Goteborg, Sweden, majority owned by its founders Christian Sjölander and John Ahlberg. Next is Scandinavia's first Project Development company within flexible, small-scale nuclear energy who deliver everything from first draft to construction and delivery – drawing inspiration from similar companies within other fossil-free energy projects. Next manages the various sub-contractors and development phases such as licensing, environmental issues, permits, financing and local government relations.

The Kärnfull Group also includes the brand Kärnfull Energi, a digital electricity supplier with operations in Sweden and Denmark. Kärnfull Energi's focus is on minimizing household emissions, negative environmental impacts and costs through electricity contracts offering nuclear-only powered electricity at a variable rate secured with guarantees of origin from Swedish nuclear power plants. By allowing consumers to “vote with their wallet” Kärnfull Energi contributes to research and development with every kilowatt hour they supply. The company also works to increase awareness of all the positives associated with nuclear energy through news aggregation.

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