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## NUWARD SMR cogeneration services

Since the creation of the French nuclear fleet, the question of adding a cogeneration option (also known as Combined Heat and Power CHP) has arisen in connection with the different crises on the price of fossil fuels. Leveraging the direct utilization of nuclear heat for industrial applications emerges as a compelling alternative to relying on fossil fuels, showcasing superior efficiency compared to generating heat through electricity. Given Europe's current objective to decarbonize energy consumption, the CHP appears to be an interesting option for the new generation of Nuclear Power Plants (NPPs), especially for Small Modular Reactors (SMRs) and is part of NUWARD SMR features. The pressure/temperature characteristics of NUWARD SMR are suitable for supplying a range of industrial applications such as hydrogen production with high temperature electrolysis, desalination, district heating, industrial heating or direct air capture. Besides they are easier to build and can be placed close to industrial or urban areas where needs are. Depending on the specific industrial application, the steam extraction location can be adapted to find a compromise between electricity production and the required steam characteristics. Integrating the CHP options also requires design specific analyses: hazard assessments, operating impact, plot plan integration and design of new equipment such as steam transformers. These development and analyses ensure a seamless integration and operation of CHP systems, as a service provided by NUWARD SMR.

### Country OR International Organization

FRANCE

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### Confirm that the work is original and has not been published anywhere else

YES

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