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The decarbonisation targets of the shipping sector by IMO are extremely challenging and require active measures as soon as possible. ENGIMMONIA comes with solutions that focus on the "source of emissions" to achieve the decarbonisation targets in multiple waves, according to the global introduction of alternative fuels, e.g. ammonia fuel for shipping. To reach these ambitions and accelerate the transition towards green shipping, ENGIMMONIA relies on a flexible approach, combining a carbon-free fuel like ammonia with energy efficiency and other measures: (1) ammonia dual-fuel engines for the ship propulsion and electricity generation, (2) waste heat recovery solutions based on ORC and adsorption chiller for the production of electricity and space cooling respectively, (3) energy/heat management including any other efficiency measures and renewables, and (4) advanced operational practices including the energy management tools. The overall objective of ENGIMMONIA is to develop and test flexible technologies at TRL over 5 that greatly reduce GHG emissions from all kind of long distance shipping and reduce the fuel consumption, and thus ensure their sustainability. These technological innovations are combined and integrated in the ENGIMMONIA polygeneration energy hub towards the ships' digitalisation. They are further developed, optimised, and integrated in the ship environment with the final aim to approach a complete decarbonisation of the shipping sector in the long term, while ensuring their wide acceptance and adoption by all relevant stakeholders.

