This abstract will be presented during LNG2023 conference on 10-13 July in Vancouver, Canada among many other innovative projects, ideas and outlooks. LNG2023 will provide a unique platform for the global LNG industry and key stakeholders to discuss, debate, and showcase the latest industry developments and opportunities.

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CO-LOCATION OF A BLUE HYDROGEN PRODUCTION UNIT, AND LNG IMPORT TERMINAL, LCO2 EXPORT AND ASSOCIATED SYNERGIES

In the context of climate change mitigation hydrogen has been identified as a fuel of interest, capable of replacing fossil fuels in mobility and energy intensive, high temperature industrial applications. Hydrogen fuel avoids any emissions of carbon dioxide or other greenhouse gases, so that provided that it can be produced without contributing to emissions during the production process hydrogen can be a big part of a solution to global warming.
One approach developed in this paper is the large scale production of low cost “blue” hydrogen without CO2 emissions by integration in an LNG import terminal.
CO2 produced during reforming can ideally be sent by pipeline to a depleted gas reservoir. If not a low energy LCO2 route is available using LNG cold recovery while LCO2 carriers can be designed to be loaded at the LNG carrier berths with minimum modification. Steam generated from the hydrogen reformer can drive turbo-machinery.
With a referenced 250 000 Nm3/h HPU, typically around 2 Mtpa of CO2 can be captured per terminal.
In the longer term it is anticipated that the terminal could build on its established H2 supply grid to convert to green hydrogen production using carbon free electricity: nuclear or renewable.
This concept can kick start a large-scale hydrogen fuel market i.e. one that goes far beyond providing hydrogen feedstock to processes used in oil refining and ammonia production, and provide a steady flow of CO2 to establish the disposal market..