



Hamburg University of Technology conducts research into the prospect of using the planned terminal infrastructure to supply energy to northern Germany

- **Brunsbüttel possesses “excellent conditions for developing into an import hub for supplying hydrogen to northern Germany”**
- **Supplying northern Germany with imports of low or zero GHG hydrogen is “technically feasible in principle”**
- **“Multifunctionality” is a future option**

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Besides its currently planned use, the LNG terminal in Brunsbüttel can also play a role in the development of infrastructure for a future climate-neutral energy supply based on imported green energy – according to a key finding in a recent study by the Technical University of Hamburg (TUHH). The study also found that Brunsbüttel is very well suited in principle as a site for a terminal that could develop into a hydrogen import hub, especially for northern Germany.

“If Germany’s energy supply is to be climate-neutral by 2045, it is highly likely this can only be achieved by also importing ‘green’ energy on a scale required by the energy industry. Importing ‘green’ methane and ‘green’ hydrogen – in pure form or as a hydrogen derivative like ammonia – is a good way of achieving this,” says study leader Professor Martin Kaltschmitt from the Institute of Environmental Engineering and Energy Economics (IUE) at TUHH, commenting on the key findings.

He believes that in the medium term, an LNG terminal such as the one planned for Brunsbüttel could also be used “multifunctionally” – not only for importing liquid methane but also for distributing liquid hydrogen and/or liquid ammonia. Discussing the concrete options, Professor Kaltschmitt thinks that “from a technical point of view, this is both feasible in principle and desirable, although compared to a ‘classic’ LNG terminal, the individual cryogenic energy sources would need different technical – and thus pretty complex – adaptations”. He notes that liquid ammonia is probably slightly easier to handle than liquid hydrogen.

Elaborating further, the scientist says that the location and industrial connections of the Brunsbüttel site make it a good proposition: “Brunsbüttel possesses excellent conditions for

developing into an import hub for supplying hydrogen to northern Germany.” He bases this view partly on its excellent seaward connections and the available and expandable connections to the existing distribution and long-distance natural gas pipeline network, as well as on the many potential industrial consumers in northern Germany.

An experience-based centre of excellence for handling cryogenic gases is conceivable

Another option in connection with the planned LNG terminal would be to set up – at the interface between research and practice, and thus between business and science – an experience-based centre of excellence in Schleswig-Holstein for handling cryogenic gases. “This would enable us to continuously develop knowledge about how to successfully defossilise our energy system, and this information would be available for the ongoing energy system transformation,” suggests Kaltschmitt.

“If Germany wants to achieve its binding climate gas reduction targets, we need to gain knowledge about the logistics of cryogenic liquids. And if we consider the import of ‘green’ cryogenic energy sources conceptually, an LNG terminal such as the one planned in Brunsbüttel could be a starting point,” Kaltschmitt concludes.

Many years of experience – German LNG and the shareholders

German LNG Terminal is planning to build and operate a multifunctional import and distribution terminal for liquefied natural gas (LNG) in Brunsbüttel. The terminal will also offer a range of services. RWE and German LNG Terminal already concluded a Memorandum of Understanding last summer to explore together the possibilities of importing “green” hydrogen at the site.

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