Diogo Rosa (Geological Survey of Denmark and Greenland), 12 May 2023

Commodity	**Helium (He)**	**Data source**
Significance for the EU (2023)	*Critical, not strategic*	
Uses of the commodity	Main uses: *Cryogenics, i.e., as a cooling medium for superconducting magnets in magnetic resonance imaging (MRI) scanners and in nuclear magnetic resonance (NMR) spectrometers, as well in aerospace.* Minor uses: *Because of its very unreactive nature, helium is also used to provide an inert protective atmosphere for fibre optics and semiconductor manufacturing, and for arc welding. Helium is also used to detect leaks in a variety of industrial settings.* *Decorative balloons, weather balloons and airships, applications in which its low density induces lift.*	USGS (2023)
Resources and potential in Nordic Countries	*Helium is known to occur in hot springs in East and South Greenland (with concentrations of 1-2 % of the gas fractions), but no potential reservoirs have yet been identified and resource estimates published.*	Persoz et al (1972), Pulsar Helium (2023), Rosa et al. (2023)
Anthropogenic resources and potential in Nordic countries	*None known*	
Main deposit types in Nordic countries	*Helium generated from radioactive decay can accumulate, normally with other gases such as methane (natural gas), in reservoirs where its migration is interrupted by suitable trap rocks.*	Elsner (2018)
Global production (2022)	*160 million m^3*	USGS (2023)
Nordic production	*Norway from natural gas?*	
Main producing countries (2022)	*USA (47 %), Qatar (38 %), and Algeria (5.6 %)*	USGS (2023)
Main global deposit types	*Helium generated from radioactive decay can accumulate, normally with other gases such as methane (natural gas), in reservoirs where its migration is interrupted by suitable trap rocks.*	Elsner (2018)
Technological challenges in production	*Helium is a by-product of natural gas, whose production is expected to decrease due to decarbonization targets set by many countries and industries. As a result, an opportunity may emerge for the production of primary, rather than secondary, helium.*	Rosa et al (2023)

Recycling	*Recycling is not widely carried out. Nevertheless, development of zero boil-off technology has caused the significant drop of helium consumption in MRIs, and aerospace, scientific research and leak detection uses are also increasingly recycling He.*	Olafsdottir & Sverdrup (2020), Elsner (2018)

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