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Status of global supply and demand of helium and outlook for the future

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Helium is indispensable as coolant in cryogenic technology research and development. The gas is tight in supply and demand globally, making it difficult to obtain. Gas Review has been reporting the latest situation of helium for almost 40 years as the magazine specialized in industrial gas industry. In the lecture we will describe the current tight situation of helium and estimate how long this would continue.

Helium has been expanding in use in the USA, Japan, and Europe as an indispensable gas for cryogenic technology, MRI, and semiconductor as well as optical fiber manufacturing since around 1980, due to its physical property such as inert, high thermal conductivity, and low boiling point. The demand has rapidly been increasing in the East Asia including China, and India in these years.

Helium is also extremely rare natural resource, of which production area is very limited in the world. The gas is present in minute amounts in atmosphere, but the gas for industrial use is mostly produced as LNG by-product from natural gas field. Therefore, helium production depends on LNG plant operation and demand and supply balance of energy in the world. In addition, helium cannot be produced from any natural gas field. Only the USA, Qatar, Africa and Australia have natural gas field which can extract and purify helium at economically viable cost.

Tightness this time is the result of supply capacity not keeping up with globally growing demand. Regarding supply capacity, there has been no investment for new capacity in the world since Qatal II project in 2013. And the US helium operations will completely stop in 2020.

In spite of growth in demand, supply capacity has not been expanded. Limited supply capacity in the market led to limited supply to the users in the world.

This trend seems to continue over a coming few years. Sales price of helium will also hover at a high price. There is another point of view that the price might be down due to temporally mitigated demand and supply situation after 2021 when the new plant will start operation. But Gas Review expect that producers and suppliers will keep current price or move to additional price increase to maintain profitability in unstable helium business.

In the lecture, we would like to find out the future trend in helium supply and demand in the future.

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