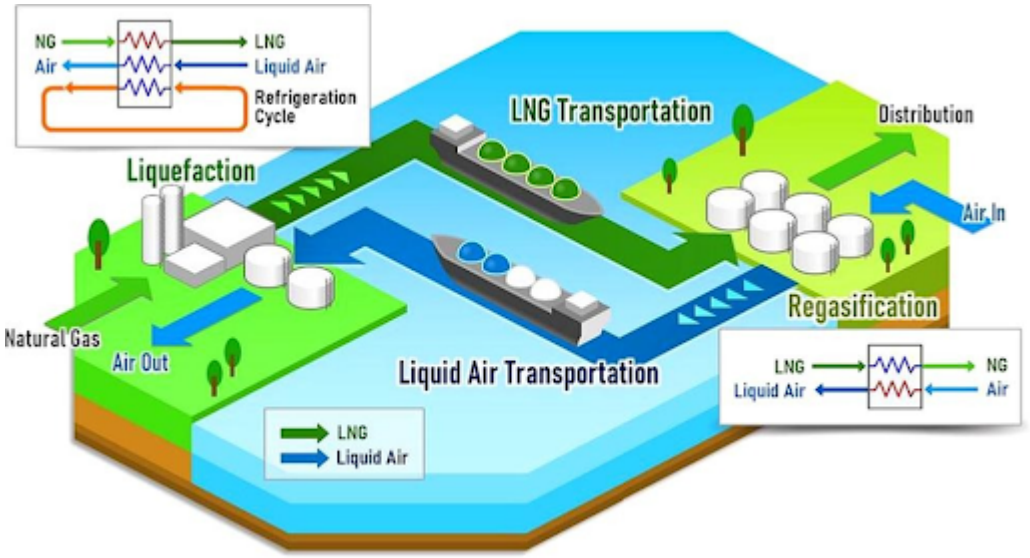
Liquified Natural Gas

January 23, 2023

In news– The European Union is weaning itself off piped Russian gas by rapidly expanding imports of liquified natural gas(LNG), much of it fracked in the US.

What is Liquified Natural Gas or LNG?

- **LNG is natural gas reduced to a liquid state (liquefaction) through intense cooling** to around -161 degrees Celsius (-259 Fahrenheit).
- This **liquid gas is 600 times smaller than the original volume** and is half the weight of water.
- **LNG is odourless, colourless, non-toxic and non-corrosive**. Hazards include flammability after vaporisation into a gaseous state, freezing and asphyxia.
- The liquefaction process involves removal of certain components, such as dust, acid gases, helium, water, and heavy hydrocarbons, which could cause difficulty downstream.
- The natural gas is then condensed into a liquid at close to atmospheric pressure by cooling it to approximately −162 °C (−260 °F); maximum transport pressure is set at around 25 kPa (4 psi) (gauge pressure), which is about one-fourth times atmospheric pressure at sea level.
- **The compressed fossil fuel, which is constituted almost wholly of methane**, a potent greenhouse gas, can be transported around the world by ship.
- After arriving at its destination, the cargo is regasified in a floating terminal and redistributed through pipelines.
- But despite LNG's export potential, the high cost of liquefaction and producing LNG has limited its market.



Its impact on climate change-

- **A lot of energy is required to extract natural gas from a reservoir, to transport from the gas field to the LNG facility for processing**.
- The cooling, liquefying and transport processes, as well as the post-transport regasification procedures, also require a lot of energy.
- Between 10-25% of the energy of the gas is being lost during the liquefaction process.
- **Methane loss across the supply chain risks also contributes to LNG's high emissions.**
- **In the end, LNG emits about twice as much greenhouse gas as ordinary natural gas**.
- Processing LNG is so energy- and carbon-intensive that it can create almost 10 times more carbon emissions than piped gas.