

Effect of liquefaction plant location on the cost of CO₂ transport

Umer Zahid, 안진주, 이 웅, 한종훈*
서울대학교
(chhan@snu.ac.kr*)

The transportation of CO₂ is required since storage sites are not necessarily present under the source sites. Ship transportation becomes important as it offers flexible routes between sources and sink sites. Liquefaction is a vital component in ship transportation of CO₂. In this study, high pressure compression with free liquid expansion is explored for post combustion and pre-combustion power plants. Three different scenarios for post combustion and pre-combustion each have been studied on the basis of liquefaction plant location. The considered scenarios are categorized as: Capture site, liquefaction plant and shipping terminal are located close to each other; Capture site and liquefaction plant are far from shipping terminal; Capture site is far from liquefaction plant and shipping terminal.

Economical analysis has been performed to study the energy and cost associated with each of the scenario. The results show that increasing transport capacity for a certain distance decreases the unit cost. However, increasing the distance for certain capacity increases the unit cost.