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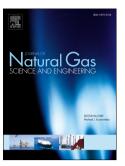
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Techno-economic and life cycle assessments of the natural gas supply chain

from production sites in Canada to north and southwest Europe

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Abstract

In recent years, the need for energy security strategies through liquefied natural gas (LNG)

import has occupied an unprecedented spot in the European Union's foreign policy agenda. The

availability of abundant natural gas resources in Western Canada, making this region a potential

supplier, has, therefore, received significant attention. In order to ensure a competitive spot in

the global natural gas market, it is important for Canada to supply its natural gas both at a

competitive price and with lower emissions. In this study, a comparative assessment of the

delivered costs and life cycle greenhouse gas (GHG) emissions of the natural gas supply chain

from production sites in Canada to north and southwest Europe is conducted through the

development of techno-economic and life cycle analyses models. Two possible supply chain

routes to Europe were explored, one from the west coast and the other via the east coast of

Canada, and included recovery, processing, transmission, liquefaction, shipping, and re-

gasification. Two sources of Canadian natural gas reserves, Montney and Horn River, are

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