Steps to Make Natural Gas a Lower Emission Energy Source

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Summary

Natural gas production has significantly increased in North America over the past decade mainly due to the advancements in technology which has allowed the extraction of unconventional natural gas resources which were previously economically unfeasible (NEB, 2011). The abundance of natural gas in the market has made it a cheap energy source. In addition to its economic attractiveness, natural gas is also appealing as policy and governments encourage clean energy sources. The burning of natural gas emits half as much carbon dioxide as coal and less than a third of the amount of nitrogen oxides (EPA, n.d.). Although natural gas is a cleaner alternative than coal, there are still associated emissions, therefore natural gas should be seen as a transition fuel as we decrease our reliance on fossil fuels and increase the capacity of renewable energy resources. During this long term transition, the world's energy demands are projected to increase, including North America's (EIA, 2012). If energy demand was to remain constant over time, the transition from coal to natural gas as an energy source would result in a noteworthy margin of fossil fuel emission decrease. Since energy demand is actually projected to increase, the margin of decreased emissions due to the energy transition will be less than if energy consumption were to remain constant. Increased energy consumption could even result in a net increase in emissions even with the transition from coal to natural gas. For this reason, natural gas extraction, processing and burning must be as close to carbon neutral as possible. With the combination of techniques including Carbon Capture and Storage (CCS), natural gas could serve as North America's primary energy source (as compared to coal) while significantly reducing CO_2 and other fossil fuels associated emissions. Through a review of literature as well as case studies, expert consultation and government documents, options for reducing emissions associated with natural gas as an energy source are investigated.

References

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