

Gas Hydrate Distribution and Volume in Canada

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Gas hydrate, a solid form of natural gas and water, occurs in Canadian polar regions and along Canadian continental margins. Conditions favorable for gas hydrate formation and stability, especially under permafrost or deep water, cover vast areas and indicate an immense natural gas potential. Our conservative calculation suggests 10^{10} - 10^{12} m³ of gas hydrates in Canada with an associated methane gas potential estimated to be in the range of 0.44 - 8.1×10^{14} . Geographically the potential is distributed in the following regions, 0.24 - 8.7×10^{13} m³ in the Mackenzie Delta-Beaufort Sea, 0.19 - 6.2×10^{14} m³ in the Arctic Archipelago, 1.9 - 7.8×10^{13} m³ on the Atlantic Margin and 0.32 - 2.4×10^{13} m³ on the Pacific Margin. The total potential for methane in hydrates overshadows the conventional Canadian hydrocarbon gas potential of approximately 0.27×10^{14} m³. This implies that gas hydrates represent a possible major energy resource, if the gas can be recovered economically.