

METHANE HYDRATES: BOON OR BANE?

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An enormous proportion of the world's organic carbon is stored in methane hydrate, an ice-like crystalline compound that is wide-spread in continental margin sediments and permafrost regions. Hydrates are of great scientific interest for several reasons: they may constitute an abundant fossil fuel; they may affect the global carbon cycle and climate; they pose a potential drilling and sea-bed hazard; and they likely play a role in submarine landslides. Our current knowledge however, is too limited to definitively state whether hydrates are an answer to future energy needs or a source of greenhouse warming and seafloor instability. We need firm answers to such questions as: How much methane is stored in marine methane hydrate, and can it be safely exploited as an energy source? Where is it located, and what controls its distribution? Has it contributed to climate change in the past, and might it do so again? The Ocean Drilling Program is currently addressing these fundamental questions about the role of methane hydrates in Earth's past and in society's future. Dr. Holbrook has participated in three expeditions, including ODP Leg 164 (geophysicist), to the methane hydrate province on the Blake Ridge off the southeastern U.S. He is also a member of ODP's Site Survey Panel.