

# **Engineering Challenges for Natural Resource Development in the Arctic**

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Natural resources, including minerals, fossil fuels, and water in the Arctic regions are increasingly important globally. Arctic and non-Arctic countries are looking to the Arctic to support the natural resource needs of expanding demand. The exploration, development and transportation of these resources brings with it significant engineering challenges. Some of the challenges have been addressed, such as ice forces on off-shore structures and permafrost thaw under land-based infrastructure. Most of the challenges have not, however, been solved. The purpose of this presentation is to discuss how current infrastructure in the Arctic has addressed the challenges of cold and how those challenges are likely to change in a warming climate.