

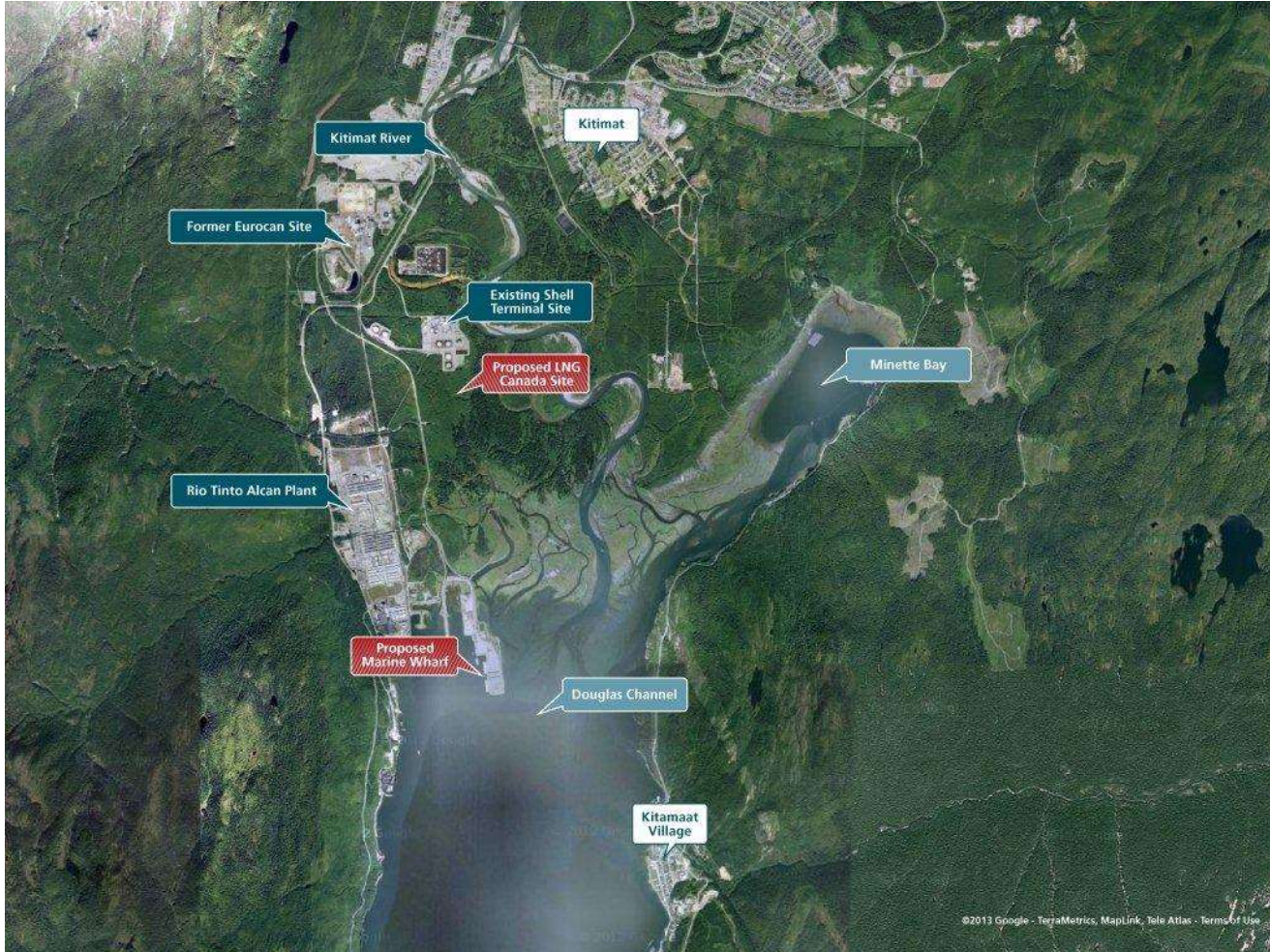
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LNG Development on the West Coast

PROPOSED LNG SITES IN NORTH BC



LNG CANADA



LNG BY SEA – A BRIEF HISTORY

- First cargo was shipped in 1959 on the converted cargo ship the Methane Pioneer
- The first purpose built LNG vessel entered into service in 1964 for Shell.
- No breach of the bulk containment system or loss of life on a vessel due to LNG
- Recent rapid expansion
125 ships in 2002
378 ships in 2012
- Industry works hard to maintain its safety record



EXPANDING INDUSTRY

- Energy demands
- Natural disasters
- Shale Gas revolution
- Environmental concerns
- Legislative drivers
- Cheaper fuel?

EVOLVING INDUSTRY

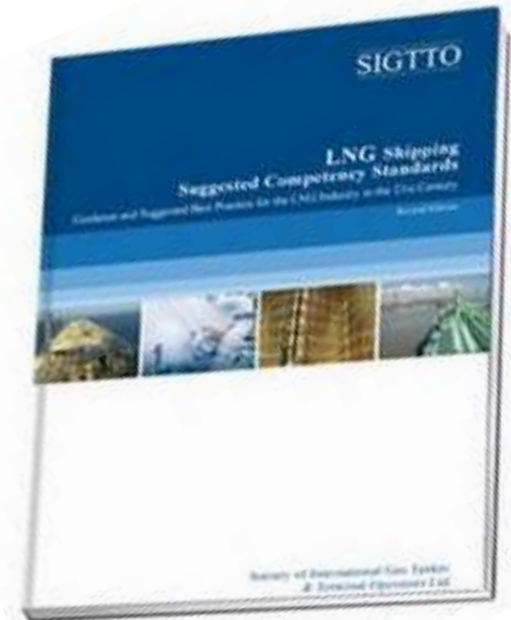
- On board re liquefaction
- Dual and Tri Fuel Diesel Electric
- LNG fueled slow speed engines
- Regas vessels and Ship to Ship Transfer
- Offshore reliquifaction
- LNG as a bunker fuel on non LNG vessels
- Spot Trading

INDUSTRY CHALLENGES

- LNG is new to BC, LNG export and bunkering are new to Canada
 - LNG bunkering is in its infancy
 - Legislative experience is limited
 - Little public knowledge of LNG
 - The internet has no expiry date irrespective of the accuracy of the information
- If the projects move forward on a similar timeline resources will be a challenge

INDUSTRY CHALLENGES

- Rapidly evolving and expanding industry puts a strain on the industry skill and knowledge pool.
 - Crew training and experience
 - Technology advancement
 - Support staff ashore
- LNG Bunkering
 - Low Flash
 - Cryogenic
 - Bunkering



SAFE OPERATIONS

Questions?