

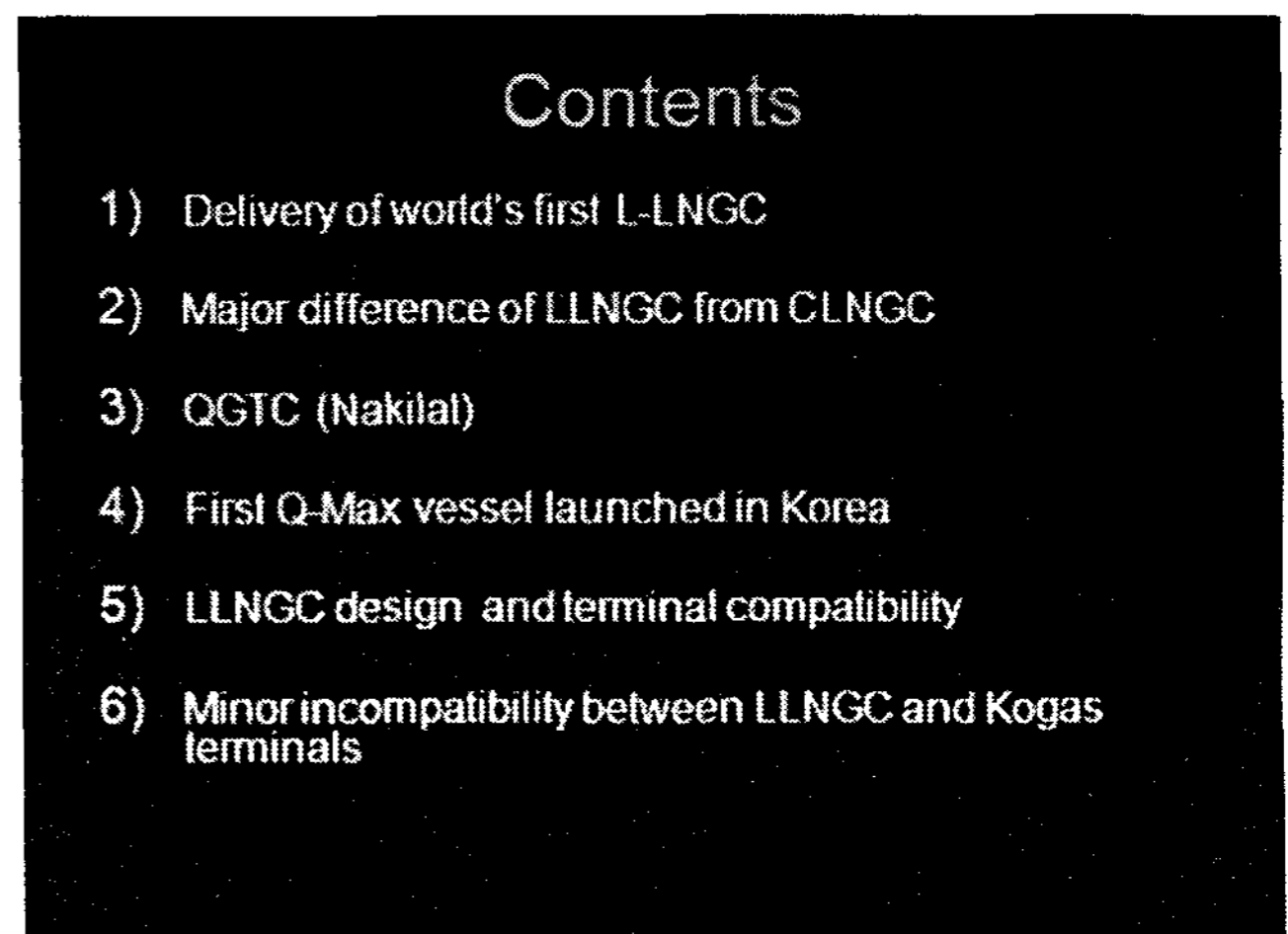
Delivery of World's First L-LNGC

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요 약 : 엘엔지운반선(LLNGC)의 대형화에 따른 잇단 대형선의 건조과정을 살펴보고 향후의 발전과정을 살펴보도록 한다.

핵심용어 : L-LNGC, DSME, QGTC, Q-Flex, SIGTTO, OCIMF



QGTC (Nakilat)

- A newly formed shipping company that is an integral part of the LNG supply chain for the of Qatar which was established in 2004.
- It is building a large fleet of vessels to transport LNG produced from Qatar's North Field - the world's largest non-associated gas field with approximately 15% of the world's total proven reserves to global markets.
- Expected vessels: 53 (Chartered /28 and Owned/25),
 - A total of 11 CLNGCs, 42 LLNGCs
 - Delivered as of end Nov 2007, 13 (CLNGC/11, LLNGC/2)
 - Delivery date of the first LLNGC; in Nov. 2007
 - Expected date of last ship (53rd) delivery; around end of December, 2009

First Q-Max vessel launched in Korea



On 13th November 2007, the first in the series of Q-Max vessels being built by Qatar Gas Transport Company (Nakilat) for charter to Qatargas, was safely floated out of the dry-dock to continue further construction work at Samsung Heavy Industries Yard in Okpo, South Korea.

LLNGC design and terminal compatibility

- A compatibility study was conducted to ascertain the existing terminals including Incheon and Pyeong Taek, Korea
- The scope of compatibility assessments of,
 - Navigation
 - Working range of loading arms
 - Landing area and working range of shore gangway
 - Storage tanks and unloading rates
 - Mooring line arrangement with a static mooring analysis
 - Fender system (contact area, reaction force, energy absorption)
 - ESDS and ship/shore communication system

- The sources used to obtain the terminal data/information/guidelines;

- SIGTTO Port information database
- Publicly available navigation charts
- FMC (loading arm manufacturer) loading system
- Information through a terminal questionnaire
- Guidelines published by SIGTTO, OCIMF and the International Navigation Society (PIANC)

Minor ship/shore incompatibility between LLNGC and Kogas terminals

- Loading arm working range; - 0.5m clearance at the I/C (1/2) terminal under AHHT and ship's ballast condition
- Shore gangway working range; -0.851m and -1.480m clearance at the P/T (2) and I/C (1) respectively under AHHT and ship's ballast condition
- Restriction from Port regulation,
 - Permissible Max. LOA: 290m (Q-Flex/315m) at IC, P/T
 - Permissible Max. beam: 49.0m at I/C (Q-Flex/50m)
 - Permissible displacement: 100,000 ton at I/C (Q-Flex > 130,000 ton)

