



G L O B A L F O R U M

**On Flaring and Venting Reduction
and Natural Gas Utilisation**

Emerging Gas Utilisation Technologies

Possibilities and Barriers with Small-scale LNG

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Possibilities and Barriers

1. Possibilities:

1. Healthy profits last couple of years, coupled with a suppliers market with surplus capacity.
2. Technology available for a range of conceptual cases.
3. Commercial feasibility

2. "Barriers":

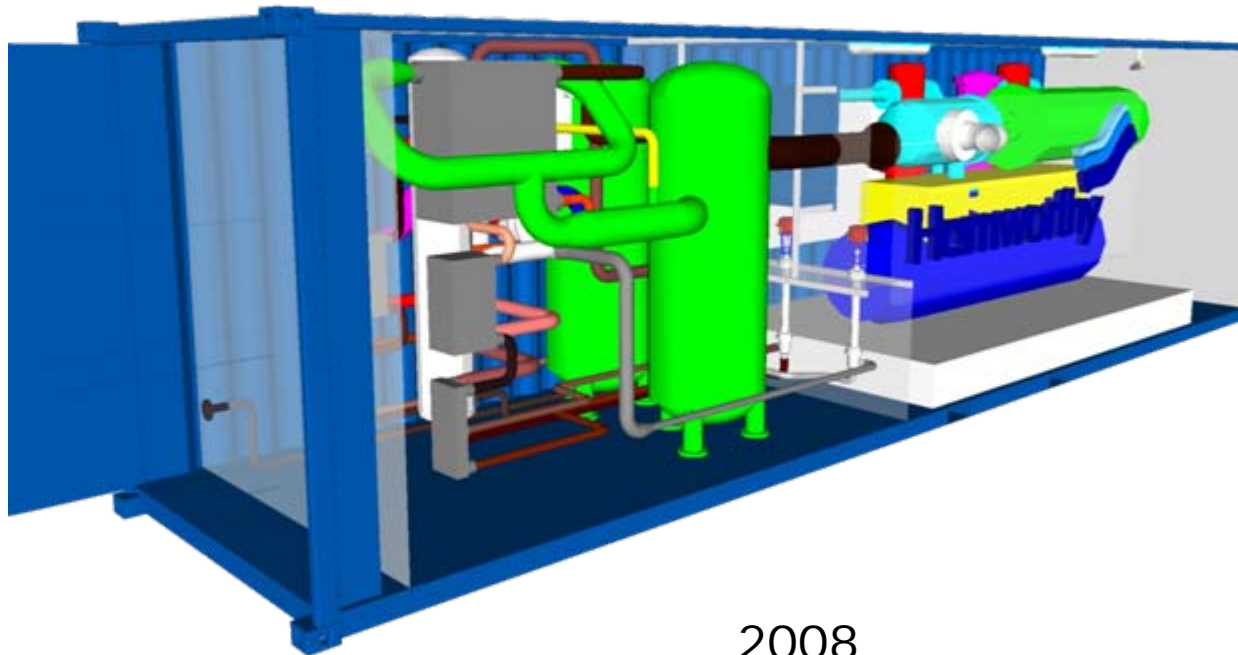
1. Contracting strategy
2. Global flare and venting data.

1 ton/ day test plant (365 tons/year)



- Fully instrumented
- Liquefaction of methane in a closed circuit
- Production: 1 ton LNG/day
- In operation since October 2003
- Long term test during autumn 2004 successful with 2 months of continuous 24-7 fully automated operation

15 tons/ day containerized
(5.500 tons/ year)



2008

21 000 tons/year - 2003



44 000 tons/ year - 2006

20 gas trials completed so far.....



Development of dynamic simulator

Hamworthy supervision during installation

N₂ cold test in all yards on 1st vessels

MC activities

- ▶ Successful reliquefaction during 1st start
- ▶ Stable reliquefaction for all operational modes typical after 9 days

Training of crew by Hamworthy and our personell present on maiden voyages

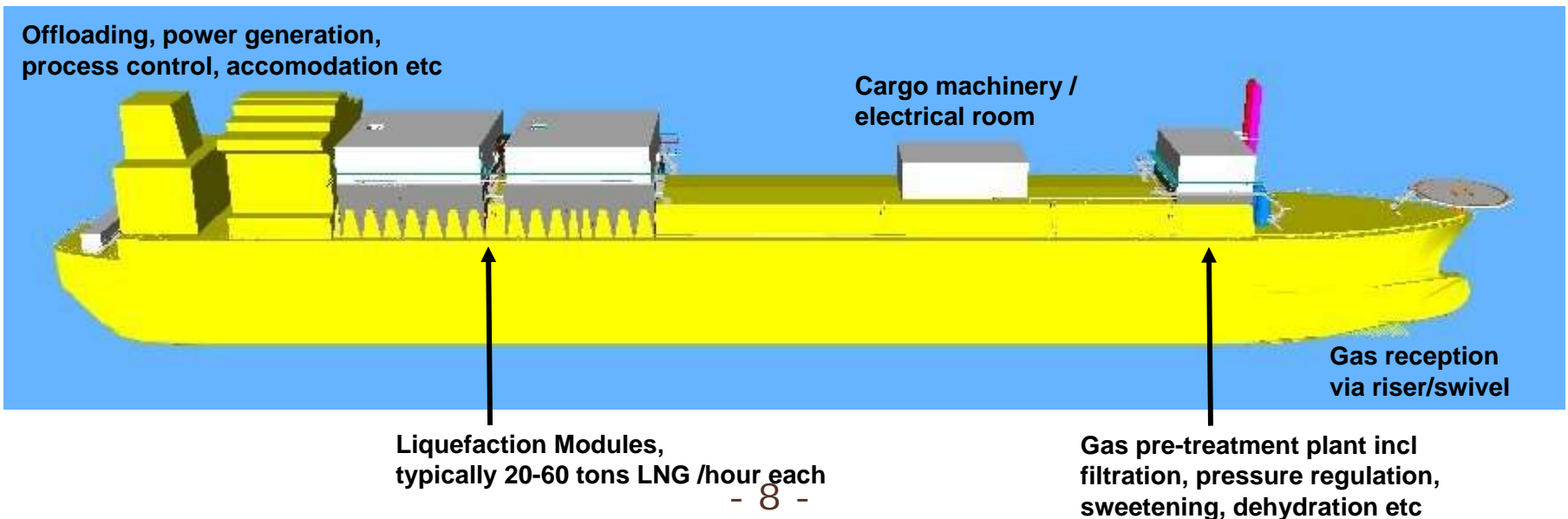
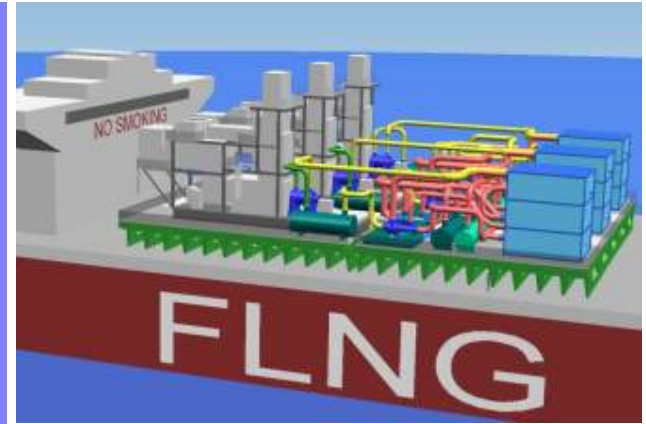
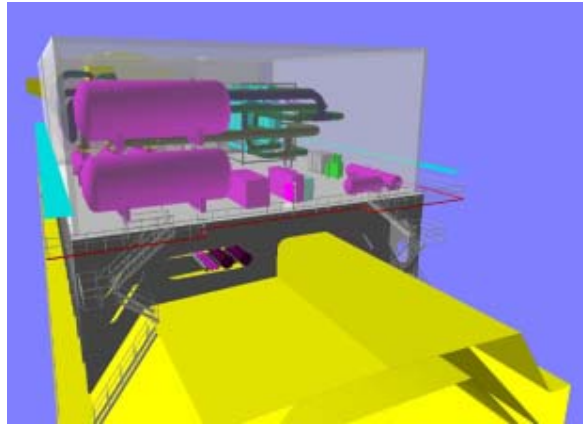
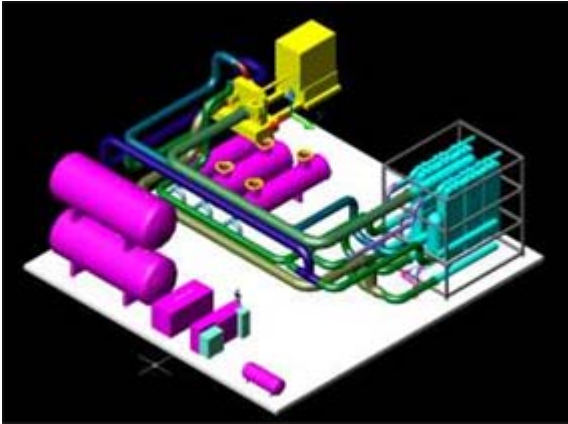


84 000 tons/year - 2007



Floating LNG Production

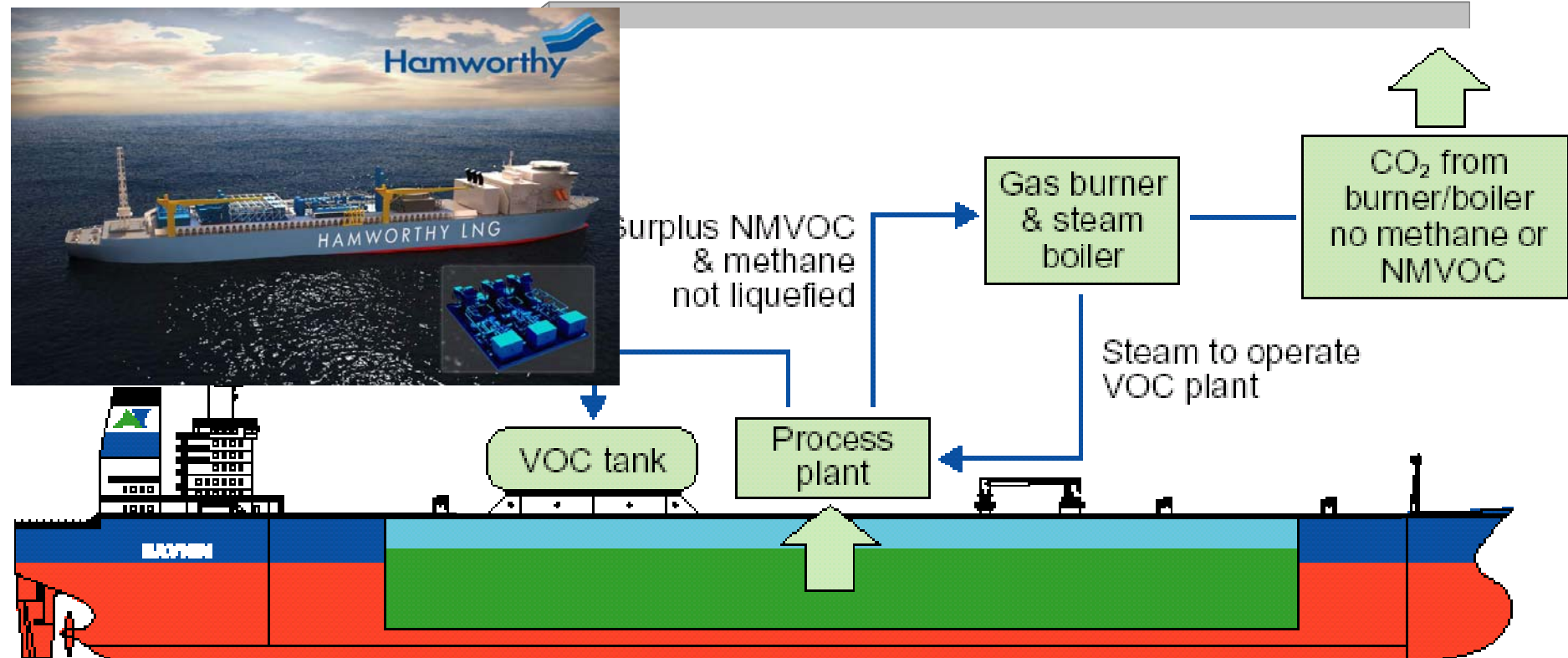
Modularized and configurable FLNG systems, typically 1.0 MMTPA production/ train



Contracting Strategy

- Drive from operators for EPCIC contracts
- Technology providers often do not have the balance sheet to take on such commercial exposure.
- Subcontracting perceived as IPR- and general business risk.
- Opportunity: Review contracting strategies to enable use of new technology

Not one universal FIX!



Summary

- Where there's a will, there's a way!
- Think big, but
- Start small, and evolve!
- Small scale LNG technology available
- Commercially feasible
- No show stoppers