

18th International Conference and Exhibition on Liquefied Natural Gas 2016 (LNG 18)

Perth, Australia
11 – 15 April 2016

ISBN: 978-1-5108-4539-8

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2016) by Gas Technology Institute (GTI)
All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact Gas Technology Institute (GTI)
at the address below.

Gas Technology Institute (GTI)
1700 S Mount Prospect Road
Des Plaines, IL 60018
USA

Phone: (847) 768-0500
Fax: (847) 768-0501

publicrelations@gastechnology.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

THE EVOLVING LNG MARKET – SUPPLY & DEMAND DYNAMICS	1
<i>S. Wael</i>	
BE CAREFUL WHAT YOU ASK FOR – LNG OPPORTUNITIES AND RISKS FROM THE NEW NATURAL GAS ABUNDANCE	7
<i>C. Goncalves</i>	
WILL LONG-TERM OFFTAKE CONTINUE TO DRIVE PROJECT FUNDING?	22
<i>M. Lovatt</i>	
INTERNATIONAL GAS UNION WORLD LNG REPORT: INITIAL PERSPECTIVES FOR 2016	30
<i>T. Williams</i>	
SUCCESSFULLY DELIVERING CURTIS ISLAND LNG PROJECTS	43
<i>A. Cathcart, M. Harbeson</i>	
CONVERTING DOMINION COVE POINT LNG INTO BIDIRECTIONAL FACILITY	56
<i>P. Bocherel, J. Stroham, J. Martinez, B. Wink, K. Shah, J. Ray, R. Thompson, R. McLandsborough, R. Pearsall, E. Stemetzki, L. Gallinelli, E. Toci</i>	
YAMAL LNG EXTREME DESIGN CHALLENGES FOR AN EXTREME PROJECT	67
<i>C. Bladanet, B. Laflotte</i>	
IMPROVED MODULARISED LNG CONSTRUCTION	84
<i>G. Byfield, E. Pegrum</i>	
EMBRACING DIVERSITY IN LNG LIQUEFACTION TECHNOLOGY - INNOVATION IN A CHANGING WORLD	100
<i>J. Baguley</i>	
GNL-3Z, THE LARGEST ALGERIAN LNG TRAIN, PROVED ITS STRENGTHS AND FLEXIBILITY IN PERFORMANCE TESTS	116
<i>A. Fantolini</i>	
DEVELOPMENT AND INDUSTRIALIZATION OF NEW VERSIONS OF THE GTT MEMBRANE CONTAINMENT SYSTEMS FOR LNG CARRIERS (LNGC)	129
<i>D. Colson</i>	
IS THE NORTHERN SEA ROUTE THE PASSAGEWAY TO THE NEW ELDORADO FOR LNG?	140
<i>F. Hannon</i>	
LNG CARRIER OPTIMISATION – STRIVING FOR THE NEXT STEP CHANGE IN LNG CARRIER EFFICIENCY	154
<i>M. Davison, F. Rezende, A. Mares, J. Ferrari</i>	
RENEWED PERSPECTIVE OF LNG VESSEL CHARTER MARKET IN THE ERA OF COMMODITIZATION	168
<i>T. Hashimoto</i>	
ISLANDS IN THE SUN: BRINGING THE BENEFITS OF NATURAL GAS TO ISOLATED MARKETS	177
<i>S. Miles</i>	
2200 M³ LNG BUNKERING BARGE PROJECT FIRST OF ITS KIND IN NORTH AMERICA	186
<i>A. Barnik, K. Dimitropoulos, A. Risley</i>	
WHAT IS THE RIGHT MIX OF INCENTIVES TO MEET FUTURE LNG DEMAND?	203
<i>A. Jbara</i>	
OPPORTUNITIES AND RISKS FOR LNG BUYERS AND SELLERS IN A CHANGING MARKET ENVIRONMENT	207
<i>M. Tan, L. Luten</i>	
DELIVERING LNG MEGA PROJECTS: WHAT GOT US HERE WON'T GET US THERE. WHAT NEEDS TO CHANGE?	215
<i>H. Mercer</i>	
CAPITAL PRODUCTIVITY FOR LNG	225
<i>L. Graauw, J. McCreery, B. Murphy</i>	
EVALUATING TECHNICAL STANDARDS AND REQUIREMENTS FOR INNOVATIVE FLOATING LNG CONCEPTS: A CLASS PERSPECTIVE	234
<i>T. Guttulsrod, P. Janssens</i>	
ACOUSTIC AND TURBULENCE/FLOW INDUCED VIBRATION IN PIPING SYSTEMS: A REAL PROBLEM FOR LNG FACILITIES	249
<i>J. Cowling</i>	

SELECTING DESIGN CRITERIA FOR NATURAL GAS LIQUEFACTION FACILITIES	261
<i>J. Bukowski, A. Weist, C. Ott, J. Trimpi</i>	
A DECADE OF LNG DESIGN COMPETITIONS – A WORK IN PROGRESS.....	275
<i>C. Caswell, M. Schweers, P. Hunter</i>	
STANDARDIZATION OF LNG PLANT DESIGN BASED ON A NEW CONCEPT.....	288
<i>T. Momose, M. Ishikawa, T. Oba</i>	
ON THE BACK OF THE TIGER CONTROLLING CAPITAL COSTS FOR LNG PROJECTS	300
<i>A. Pace</i>	
WESTERN AUSTRALIAN PERSPECTIVES ON GAS INDUSTRY DEVELOPMENT.....	314
<i>S. Wood</i>	
IMPACT OF LNG EXPOSURE ON AUSTRALIA’S EASTERN GAS MARKET	328
<i>R. Lambie</i>	
ONSHORE GAS IN AUSTRALIA: THE SURAT BASIN SOCIAL LEGACY STORY.....	344
<i>S. Charles, L. France</i>	
LNG AND DOMESTIC MARKETS THE CHANGING FACE OF THE EAST COAST GAS MARKET	358
<i>P. Deckart, B. See</i>	
COLLABORATION, INNOVATION & CAPABILITY BUILDING: THE WESTERN AUSTRALIAN ENERGY RESEARCH ALLIANCE	370
<i>K. Bills</i>	
ENVISIONING A 100% GAS-FUELLED AUSTRALIAN FUTURE.....	386
<i>A. Soni</i>	
LNG SPOT MARKET TRENDS AND PRICE TRANSPARENCY.....	398
<i>F. Poynter</i>	
THE OUTLOOK FOR THE LNG MARKET IN JAPAN.....	405
<i>H. Hashimoto</i>	
GNL CHILE EXPERIENCE AND BUSINESS MODEL	419
<i>R. Gonzalez, A. Palma</i>	
A NEW GOLDEN ERA FOR EUROPEAN REGAS?	429
<i>R. Baylis</i>	
FSRU: RISKS AND OPPORTUNITIES	434
<i>K. Sathyamoorthy, S. Haldar</i>	
QATARGAS FLARE REDUCTION PROGRAM	446
<i>K. Sulaiti, F. Khan, K. Bashir</i>	
LIFE CYCLE ASSESSMENT OF LNG: CONTEMPORARY ISSUES RELATED TO ENVIRONMENTAL FOOTPRINT OF LNG	459
<i>T. Williams</i>	
MEMBRANE CONTAINMENT SYSTEM BEHAVIOR IN CASE OF COLLISION	474
<i>P. Charbonnier, S. Ehlers, M. Guiard, J. Kubiczek, I. Darie, H. Selle, J. Peschmann</i>	
NEW APPROACHES FOR TESTING AND PREDICTING STRUCTURAL INTEGRITY DURING CRYOGENIC SPILLAGE ON FLNG	489
<i>S. Viale, N. Elkhodja, L. Pomie</i>	
CREATIVE APPROACHES TO NEARSHORE FLNG MOORING	503
<i>R. Heffron</i>	
LNG MARKETS IN TRANSITION: THE GREAT RECONFIGURATION	518
<i>A. Corbeau, D. Ledesma</i>	
LNG COMMODITIZATION – A REALITY IN THE FUTURE OR JUST A DREAM?.....	534
<i>K. Miyazaki, M. Limam, M. Reimers, G. Katayama</i>	
LNG DYNAMICS AND THE CORPORATE LANDSCAPE	550
<i>N. Tomnay, G. Farrer, Z. Chong, L. Schmitt, W. Mackenzie</i>	
SPEEDING UP THE PACE OF TECHNOLOGY ADOPTION.....	561
<i>N. Kavanagh, B. Levett</i>	
LNG LIQUEFACTION – “UNCOMMON KNOWLEDGE” LEADS TO INNOVATION.....	567
<i>W. Schmidt, M. Holstine</i>	
VERSATILE CRYOGENIC NITROGEN REJECTION.....	585
<i>H. Bauer, M. Lang</i>	
LEAN LNG PLANTS – NOVEL HEAVY HYDROCARBON REMOVAL TECHNOLOGIES FOR EFFICIENT LIQUEFACTION	594
<i>M. Kameta, Y. Kikkawa, T. Momose</i>	
PRICO-DMR®: AN INNOVATIVE APPROACH TO HIGHLY EFFICIENT, SCALABLE, AND COST-COMPETITIVE LNG.....	607
<i>J. Seitter, P. Sibal</i>	

FLEXIBLE LNG PRETREATMENT: HONEYWELL UOP SEPARSIV™ TECHNOLOGY FOR HEAVY HYDROCARBON REMOVAL	620
<i>W. Shimer</i>	
POTENTIAL OF NATURAL GAS DEMAND GROWTH IN GLOBAL TRANSPORTATION INDUSTRY	628
<i>Y. Namgoong</i>	
SMALL-TO-MID SCALE LNG'S SHIP IS SAILING	638
<i>R. Klimczak, M. Dayton</i>	
DESIGN OF SMALL SCALE LNG PROJECTS, APPLICATION OF EXISTING CODES & STANDARDS FOR LARGE SCALE LNG PROJECTS	653
<i>H. Grossmann, M. Krol</i>	
THE FUTURE OF LNG AS A SHIP FUEL	668
<i>G. Wuersig</i>	
LNG READY SOLUTION USING A MARK FIT LNG FUEL TANK OPERATING UP TO 2 BARG: THE CASE OF VLOC	674
<i>T. Krumnow, A. Barret</i>	
LNG AS FUEL IN EUROPE AND GERMANY	688
<i>G. Linke</i>	
THE LNG PARADOX: LATIN AMERICA AND THE MIDDLE EAST	696
<i>M. Chennoufi, S. Dijk</i>	
THE ROLE OF EUROPE IN GLOBAL LNG MARKETS	710
<i>B. Maruenda</i>	
THE ROLE OF LNG AND LNG FACILITIES IN THE NEW EUROPEAN CONTEXT WITH SPECIAL FOCUS ON THE IBERIAN PENINSULA	719
<i>M. Oreja</i>	
PRICE REVIEW CLAUSES IN LNG SPAS - WHERE TO NOW?	738
<i>M. Rowley, J. White</i>	
OPTIMIZING LNG SHIPPING PORTFOLIOS: OPPORTUNITIES, REALITIES, UNCERTAINTIES	746
<i>M. Amouretti-Dumontier, D. Brown, A. Adede</i>	
TAMING PRICE REVIEW CLAUSES: LESSONS FROM THE TRANSACTIONAL AND ARBITRATION BATTLEFIELDS	758
<i>S. Sparling, J. Magnin, P. Morton, J. Gilbert, A. Farren</i>	
MEETING THE EXECUTION CHALLENGES OF SHELL PRELUDE FLNG	773
<i>A. Poincheval, J. Kim, N. Kauffmann</i>	
FSRU TOSCANA (ITALY) - AN INNOVATIVE SOLUTION FOR LNG OFF-SHORE REGASIFICATION	785
<i>A. Fantolini</i>	
PETRONAS FLNG SATU – THE ADVANTAGES OF A MID SCALE FACILITY	798
<i>F. Azhar, M. Narayanan</i>	
T NEAR SHORE LOW COST LNG SOLUTIONS	813
<i>S. Faka</i>	
FLOATING LNG: DESIGN FOR PROTECTION FROM CRYOGENIC RELEASES	825
<i>A. Whymant, I. Cowan</i>	
SAFETY IMPROVEMENTS IN FLNG DESIGN	841
<i>B. Lequime, L. Pomie</i>	
WORLD'S FIRST APPLICATION OF GAS TURBINE INLET AIR CHILLING FOR LNG LIQUEFACTION - DESIGN, IMPLEMENTATION AND OPERATION	857
<i>P. Redding, J. Crutcher, P. Bruner, C. Meher-Homji, B. Barnes, K. Masani</i>	
THE MITSUBISHI H-100 GAS TURBINE MAIN REFRIGERANT COMPRESSOR TRAINS	873
<i>T. Hataya, N. Horii</i>	
SAFE, RELIABLE, EFFICIENT ROTATING & ELECTRICAL SOLUTIONS FOR 2 – 7 MTPA LNG APPLICATIONS	888
<i>T. Loscha, V. Hutten, E. Lerch, C. Beer</i>	
OPERATIONAL, ECONOMIC AND ENVIRONMENTAL BENEFITS OF ELECTRICALLY DRIVEN LNG WITH A COMBINED CYCLE POWER PLANT	903
<i>E. Lerch, U. Kerin, S. Lundgren, J. Morey</i>	
FUTURE TRENDS IN LNG TURBOMACHINERY	921
<i>A. Pelogotti, C. Meher-Homji, K. Masani</i>	
DEVELOPMENT OF SMALL SCALE LNG VALUE CHAINS AND INFRASTRUCTURE IN SOUTH EAST ASIA	936
<i>J. Brown</i>	

ALL SIGNS POINT TO SINGAPORE: THE POTENTIAL NEW HUB FOR ASIA'S EMERGING LNG TRADE	943
<i>L. Tan, M. Mullarkey</i>	
CHINA GAS MARKET LIBERALIZATION - OPPORTUNITIES AND RISKS FOR NEW LNG PLAYERS	951
<i>M. Cai, S. Thompson</i>	
NEW CHALLENGES FOR CITY GAS COMPANIES IN JAPAN	961
<i>F. Machino, S. Hashimoto</i>	
Author Index	