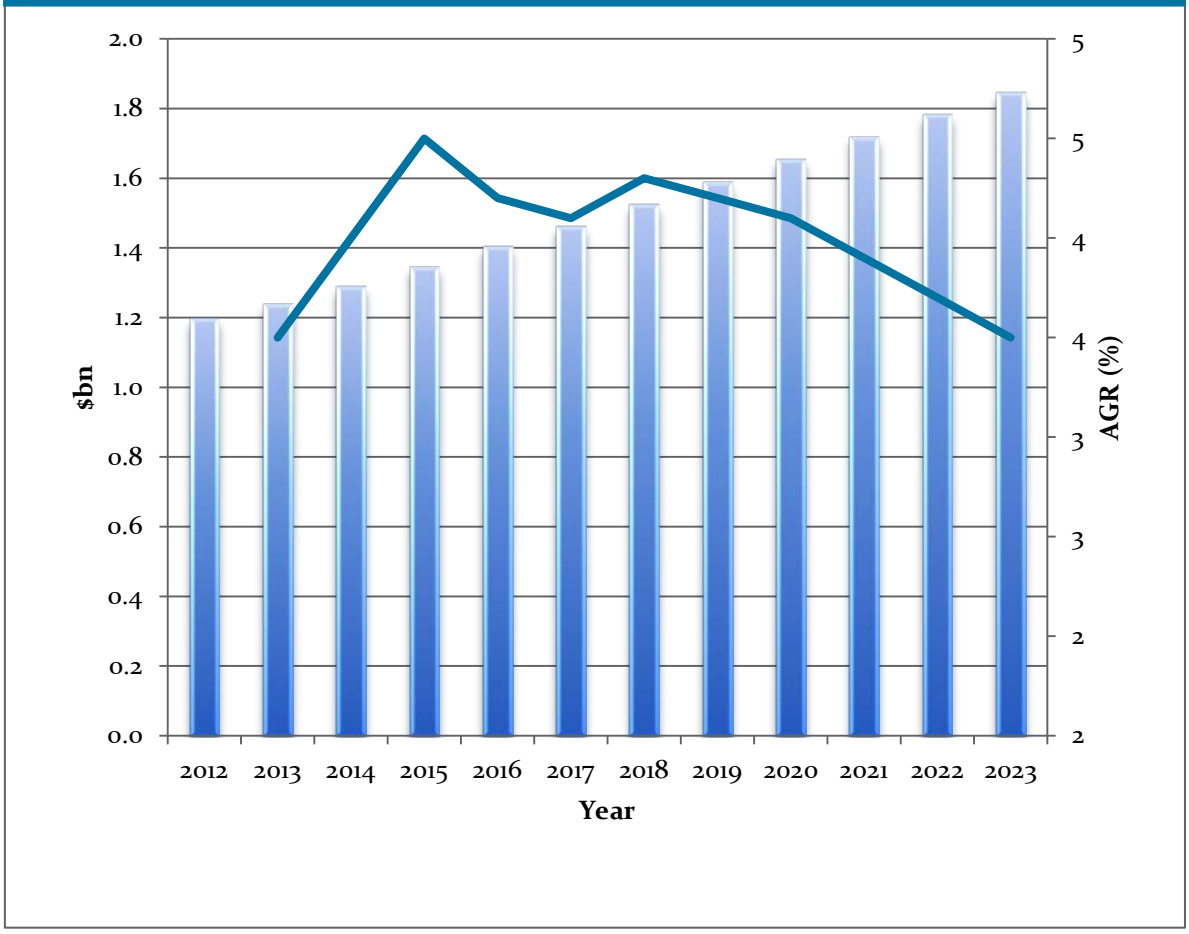
5.5 Eurasian Onshore Liquefied Natural Gas (LNG) Infrastructure Market Forecast 2013-2023

Table 5.19 Eurasian Onshore Liquefied Natural Gas (LNG) Infrastructure Market Forecast 2013-2023 ($bn, AGR %, CAGR %, Cumulative)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2013-23
$bn	**1.20**	**1.24**	**1.29**	**1.35**	**1.41**	**1.46**	**1.53**	**1.59**	**1.66**	**1.72**	**1.78**	**1.85**	**16.90**
AGR (%)		3.5	4.0	4.5	4.2	4.1	4.3	4.2	4.1	3.9	3.7	3.5	
CAGR (%) 2013-18				**4.2**			2018-23			**3.9**			
CAGR (%) 2013-23							**4.0**						

Source: *Visiongain 2013*

Figure 5.18 Eurasian Onshore Liquefied Natural Gas (LNG) Infrastructure Market Forecast 2013-2023 ($bn, AGR %)



Source: *Visiongain 2013*

5.6.2 European Onshore Liquefied Natural Gas (LNG) Infrastructure Projects

Table 5.24 European LNG Import/Regasification Terminals Proposed & Under Construction (Location, Operator/Owner, Capacity, Construction Cost & Construction Period)

Location	Operator/Owner	Capacity	Construction Cost	Construction Period
France, Dunkirk LNG	Dunkirk LNG (subsidiary of EDF Energy), Total, Fluxys	7.2-9.4mtpa (10-13bcm/a)	$1,016.4m	2013-2015
Antifer LNG project, Le Havre, France	Gaz de Normandie (Poweo 73%, Compagnie Industrielle Maritime 27%)	7.0mtpa	$672m	2010-2013
Porto Empedocle Agrigento, Sicily, Italy	Enel Nuove Energie SpA,	5.8mtpa	$1,200m	2012-2015
Gioia Tauro, Calabria, Italy	LNG MedGas & Sorgenia	8.6mtpa (11.8bcm/a)	$1.3bn	2014
Rosignano Marittimo, Italy	-	5.8mtpa (8.0bcm/a)	-	Awaiting FID
Trieste, Italy	E.ON	6.0mtpa (8.3bcm/a)	-	Awaiting FID
Falconara Marittima	Api Nova Energia	2.9mtpa (4bcm/a)		Awaiting FID
Shannon LNG, Ireland	Hess Corporation	3.0mtpa-5.0mtpa	$780m	Under Planning
Swinoujscie LNG, Poland/German border	Gaz de France (GDF), Polskie Gornictwo Naftowe i Gazownictwo (PGNiG),	7.5mtpa (10.3bcm/a)	$1,254m	March 2011 – June 2014
Adria LNG,Krk, Croatia	E.ON Ruhrgas AG (31.15%), Total (25.58%), OMV Gas (25.58%), RWE AG (16.69%) and Geoplin d.o.o. Ljubljana (1%)	7.0mtpa (10bcm/a)	$1.5bn	FID 2013 to be commissioned by 2016
Port Meridian, United Kingdom	West Face Capital, & Höegh LNG	3.9mtpa (5.4bcm/a)	-	2015
El Musel, Gijon, Spain	Enagas	5.8mtpa	$480m	2010-2012
Odessa, Black Sea, Ukraine	Naftohaz Ukrainy	7.25mtpa (10bcm/a)	$1.1bn	FID to be made when finances are available

Source: *Visiongain 2013*

7. Expert Opinion

7.1Höegh LNG

Höegh LNG is based in Norway, with more than 30 years of experience in the LNG industry, the company has nine LNG carrier vessels and operates a number of FSRU units across the globe and is considering investment in an FLNG unit. Arild Jæger is the Head of Investor Relations at Höegh LNG. Visiongain would like to thank Arild Jæger for his comments.

7.1.1 Höegh LNG in the Liquefied Natural Gas Market

Visiongain: What are the major LNG projects or developments in which Höegh LNG is involved?

Höegh LNG will provide a floating storage and regasification unit (FSRU) to Indonesia's Perusahaan Gas Negara on a 20+5+5 year contract to act as a floating LNG import terminal in south Sumatra, where it will connect to the pipelines supplying gas to the Jakarta region. Operations are planned to commence in June 2014.

Höegh LNG also has a 10 year agreement with Klaipedos Nafta to provide an FSRU to be moored in the Port of Klaipeda and act as a floating LNG import terminal for Lithuania. This terminal is planned to commence operations in the second half of 2014.Höegh LNG has also been selected the preferred bidder for a new floating LNG import terminal in Quintero Bay, near Santiago in Chile. One of Höegh LNG's existing FSRUs on a long-term time charter with GDF Suez is scheduled to go to the port of Tianjin in China to act as a floating LNG import terminal later in 2013. In addition, Höegh LNG is bidding for new projects for its fourth new FSRU.

7.1.2 FLNG Facilities Comparison with Onshore LNG Terminals

Visiongain: What are the advantage and disadvantages of onshore LNG export and import infrastructure as opposed to offshore (Floating) infrastructure?

Arild Jæger: The advantages of floating LNG export and import facilities compared to onshore facilities are the shorter time of implementation and the lower cost of building the facility in the controlled environment of a large shipyard, as well as the flexibility to move the facility to another location in the event that market requirements change.

8.1.1 BP Company Overview

Table 8.2 BP Company Overview 2012 (Total Revenue, Global Market Share %, HQ, Ticker, Website)

	2012
Total company revenue $bn	$370.9bn
Global market share %	2.1%
Headquarters	London, UK
Ticker	BP.L
Website	www.bp.com

Source: *Visiongain 2013 & BP*

8.1.1.1 BP LNG Infrastructure Projects

Table 8.3 BP LNG Infrastructure Projects Under Construction (Location, Stakeholders, Capacity, Construction Cost & Construction Period)

Location	Stakeholders	Capacity	Construction Cost	Construction Period
Tangguh LNG Project West Papua, Indonesia	BP, CNOOC, Nippon Oil, LNG Japan	3.8mtpa	$12.0bn	2013-2019
Northern Slopes, Alaska, US	BP, ExxonMobil, ConocoPhillips, TransCanada Corporation	-	$45.0-$65.0	Conceptual stage

Source: *Visiongain 2013 & BP*

Table 8.4 BP Existing Liquefaction Terminals (Location, Project Name, Gross Capacity (mtpa), % Equity, Net Capacity (mtpa) & Market Served

Country	Project/train	Gross capacity (mtpa)	BP %equity	BP net capacity (mtpa)	Markets served
Trinidad & Tobago	Atlantic LNG Train 1	3.3	34.0	1.1	US, Spain
	Atlantic LNG Trains 2-3	6.7	42.5	2.8	US, Spain
	Atlantic LNG Train 4	5.2	37.8	2.0	US, Dominican Republic
Australia	North West Shelf Trains 1-5	16.3	16.7	2.7	Japan, China, Korea
Abu Dhabi	ADGAS Trains 1-3	6.0	10.0	0.6	Japan
Indonesia	Tangguh Trains 1-2	7.6	37.2	2.8	Mexico, China, Korea
Total		45.1		12.0	

Source: *Visiongain 2013 & BP*