



Best Practice Policy Guidelines for Small Scale LNG; Truck Loading

Group of Experts on Gas

Program Focus

1. New Uses of LNG, including small scale:
 - **Bringing gas to remote areas (remote gas services)**
 - Use of LNG as a transport fuel.
2. Regulatory needs:
 - Implement regulation to facilitate the use of natural gas and LNG.
 - Norms and standards for LNG
3. Advantages of gas and LNG in mitigating climate change.

Advantages of Natural Gas

1. Environmental benefits of natural gas

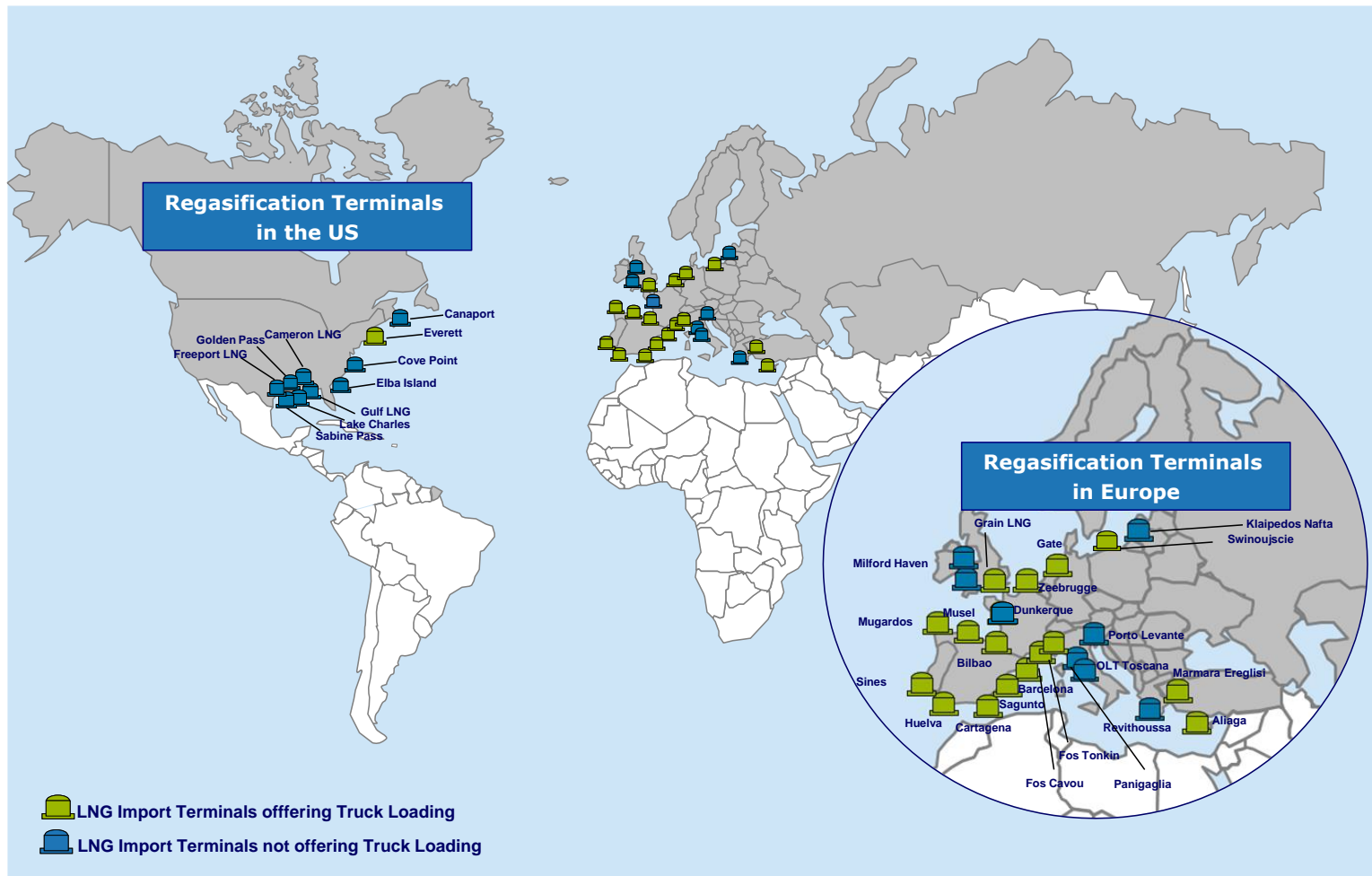
- Reducing emissions (CO_2 , NO_x , SO_x)
- Reduce local pollution, air quality for citizens
- Considered by EU as alternative fuel

2. Truckloading Services

- I. Distribution market – Remote areas not being connected to gas grid for both industrial and domestic usage;
- II. Transport sector – Parties considering using LNG
- III. Power generation & Industrial customers- small power plants used for peak shaving where these are still supplied with fuel oil or industrial customers who may consider this a more feasible option.

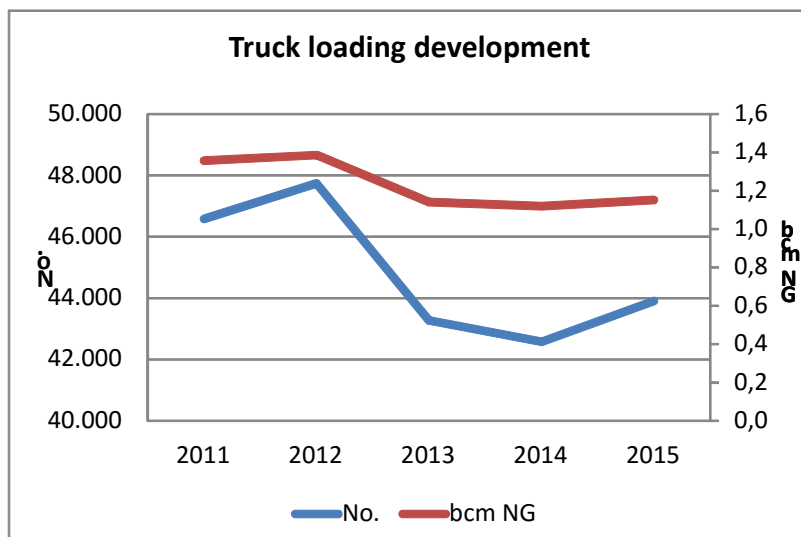
Truck Loading in the UN ECE

Truck loading Development from import terminals in the UNECE Region



Source: GIIGNL Annual Report, 2016 Edition¹

Truck loading in the EU + Turkey



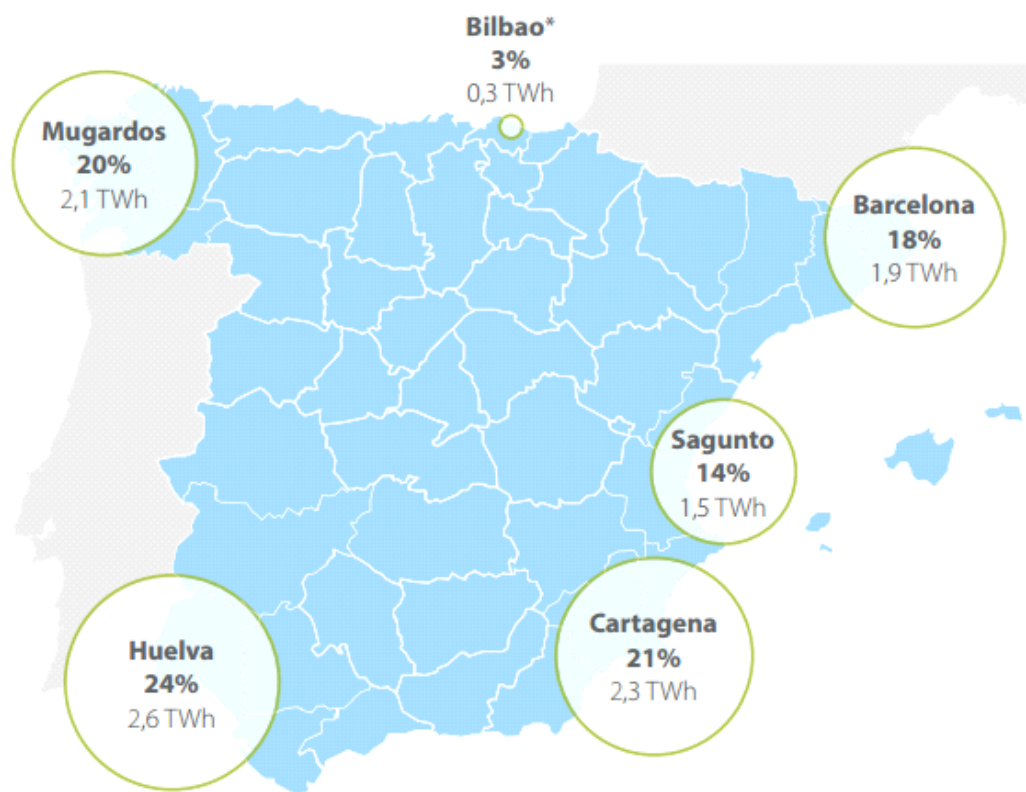
Source: GLE New LNG Services Inventory¹

Country	Belgium	France	France	France	France	Greece	Italy	Italy	Italy	Lithuania	Netherlands	Poland	Portugal
Company	Fluxys	Dunkerque LNG	Elengy	Elengy	Fosmax LNG	DESFA	ADRIATIC LNG	GNL Italia	OLT Offshore LNG Toscana	Klaipėdos Nafta	Gasunie	GAZ-SYSTEM	REN Atlantico
Facility	Zeebrugge	Dunkerque LNG	Montoir de Bretagne	Fos Tonkin	Fos Cavaou	Revithoussa	Porto Levante	Panigaglia		Independence	Gate terminal	Swinoujście	Sines
Truck loading	yes	no	yes	yes	yes	no	no	no	no	no	yes	yes	yes
Capacity: (LNG) m ³ /h	75	but under study	1 x 100	1 x 100	-	1 x 100		Feasibility study in progress; FID expected by		but available from 2017, EPC contract is signed	1 x 100	2 (+1) x 90	2 x 50, 1 x 75
comment		3 x 100 under study	3 x 100 under study	3 x 100 under study	through Fos Tonkin	by end 2017					second under construction for 1Q2017		

Country	Spain	Spain	Spain	Spain	Spain	Spain	Spain	UK	UK	UK	Turkey	Turkey
Company	BBG	Enagas	Enagas	Enagas	Enagas	Reganosa	Saggas	Dragon LNG	Grain LNG	South Hook	Marmara Ereğlisi LNG Terminal	Aliaga Izmir LNG Terminal
Facility	Bilbao	Barcelona	Cartagena	Huelva	EL Musel	Mugardos	Sagunto	Milford Haven	Isle of Grain	Milford Haven	Marmara Ereğlisi	Aliaga
Truck loading	yes	yes	yes	yes	yes	yes	yes	no	yes	no	yes	yes
Capacity: (LNG) m ³ /h	2x27	3 x 91	3 x 91	3 x 91	3 x 91	2 x 75	2 x 70		2 x 80		3 x 75	Not found
comment												

The Spanish case

Truck Loading in Spain in 2015



10,719 GWh/y
(-1.3% vs. 2014)



34,400 loaded
trucks



Source: Spanish Gas System Report 2015 ¹

Truck Loading Capacity per Terminal



Reganosa

- 10,5 GWh/d GNL
- 30 trucks/day



El Musel

- 8 GWh/d GNL
- 30 trucks/day



Bilbao

- 4,5 GWh/d GNL
- 15 trucks/day

**SEVERAL
HUNDRED
THOUSANDS
IN THE LAST
DECADES!!!**



Barcelona

- 15 GWh/d GNL
- 50 trucks/day

Sagunto

- 10,5 GWh/d GNL
- 35 trucks/day

Huelva

- 15 GWh/d GNL
- 50 trucks/day

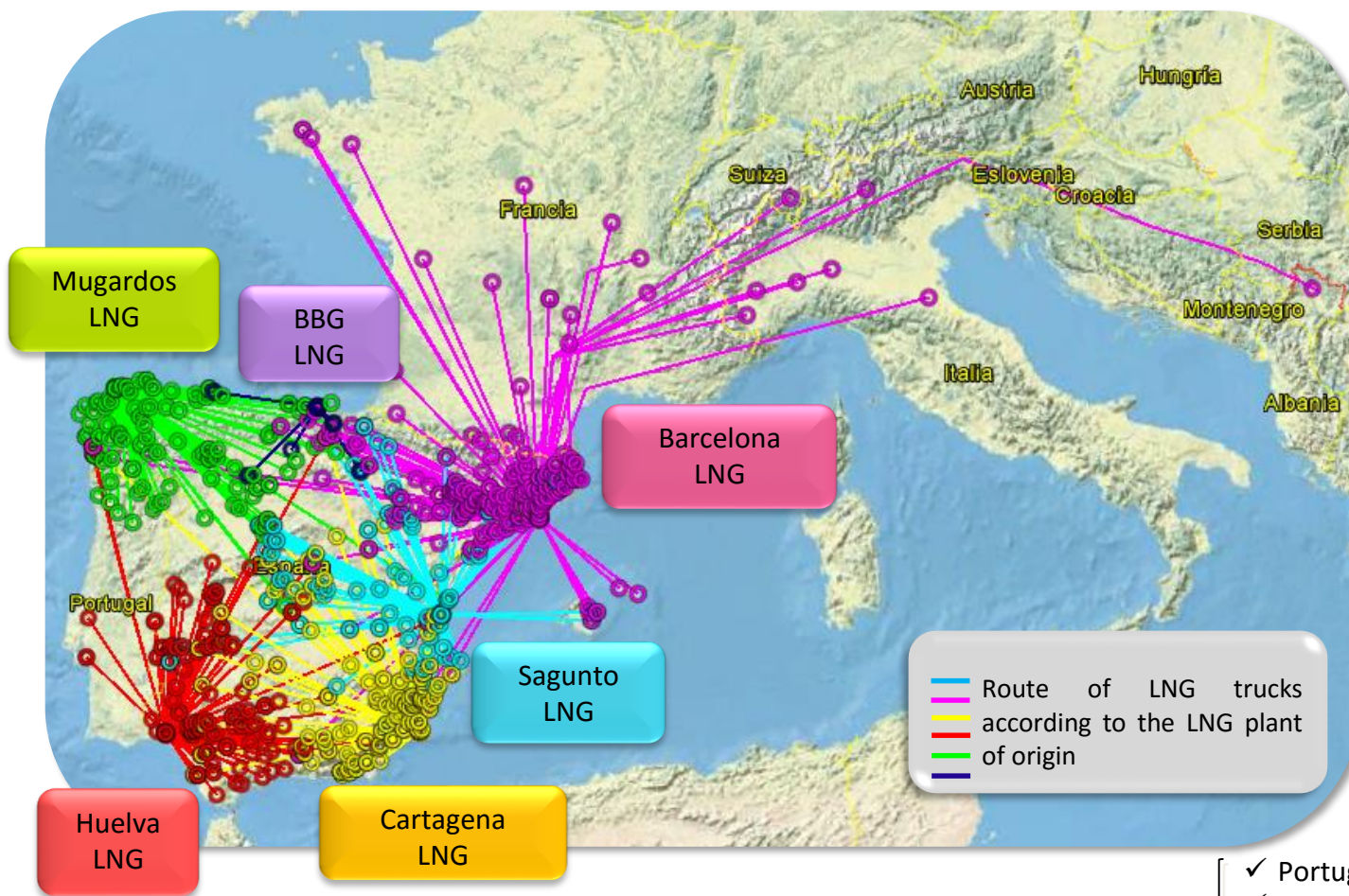
Cartagena

- 15 GWh/d GNL
- 50 trucks/day



	2008	2009	2010	2011	2012	2013	2014	2015
Yearly Truck Loading in Spain								
TOTAL	36,000	41,000	40,000	44,000	46,000	36,000	34,800	34,400

The Spanish case



n° of destinations depending on LNG facility

232 destinations from Barcelona LNG

217 destinations from Cartagena LNG

202 destinations from Huelva LNG

225 destinations from Sagunto LNG

140 destinos planta Mugardos

51 destinations from BBG LNG

Increase of 81 satellite destinations 2015 vs 2014

Increase of destinations outside Spain: 59 in 2015 and 35 in 2014,

- ✓ Portugal
- ✓ France
- ✓ Italy
- ✓ Switzerland
- ✓ **FYROM**

new

Conclusions

- There is great potential for truck loading services
 - LNG can reach long distances through truckloading services
 - Deliver LNG to remote areas through trucks and satellite plants
 - Truck loading together with satellite plants are a good opportunity to colonize areas where there is a lack of gas grid until the network reaches this place
- It is very important to highlight that only gas infrastructure allow the completion of market integration