



Gas LNG Europe

Lessons learnt from the February 2012 cold spell: LNG contribution to SoS

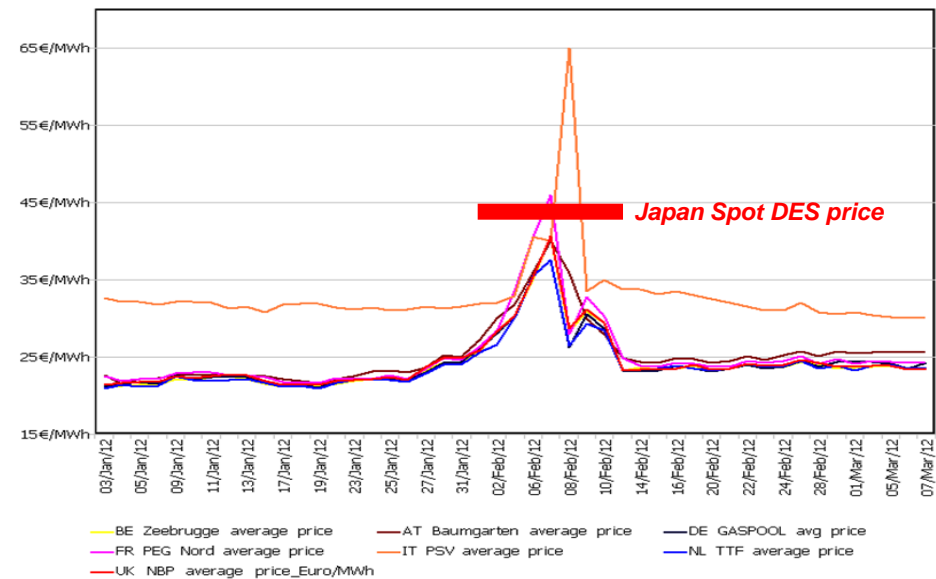
Francisco de la Flor, GLE President

Cold spell 2012



- All natural gas infrastructure (transmission pipelines, UGS and LNG Terminals) contribute to Security of Supply in a complementary way
- LNG supplies reacted in a positive way to cover the increase in demand and provide flexibility but also responding to price signals
- European Market worked properly: gas prices reacted rapidly to the growing demand
- Prices at European hubs remained however far below Japan LNG spot price (except one day), making competition for LNG difficult

European hubs daily average of day ahead gas prices

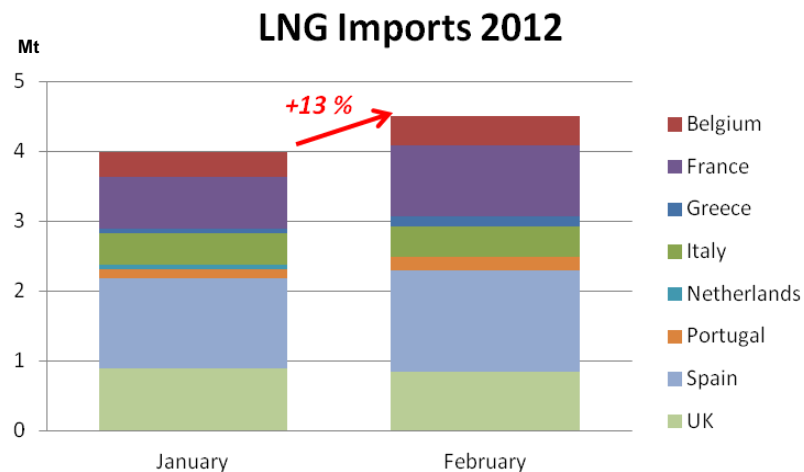


Source: Market Observatory for Energy

Cold spell 2012: LNG contribution



- LNG contribution consistent with the market needs : shippers optimized their portfolios (in particular increased UGS withdrawals), taking into account world LNG prices conditions
- Load factor in February about 40 % while high availability of capacities in LNG Terminals



SOURCE: Poten & Partners, GLE

- Under other circumstances, for example if the same cold spell arrived at the end of a harsh winter (ie with low levels of gas in UGS), LNG terminal contribution would have been essential

- As important as the magnitude of the LNG contribution to the cold snap, is the flexibility proved by LNG during this period in reaction to market needs, in particular:
 - ✓ Diversion of LNG cargoes to where they were most needed,
 - ✓ Reloading of LNG cargoes, which allowed floating transportation between LNG terminals along the European coasts,
 - ✓ Utilization of installed regasification and LNG storage capacities, also at peak level

contributing to security of supply as well as to market integration.

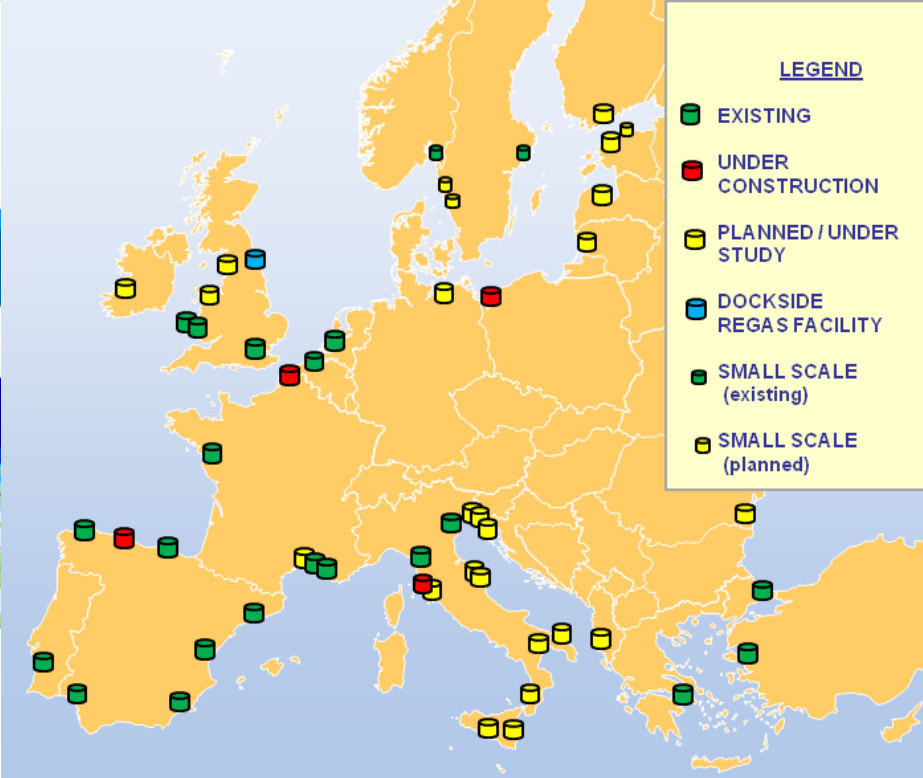
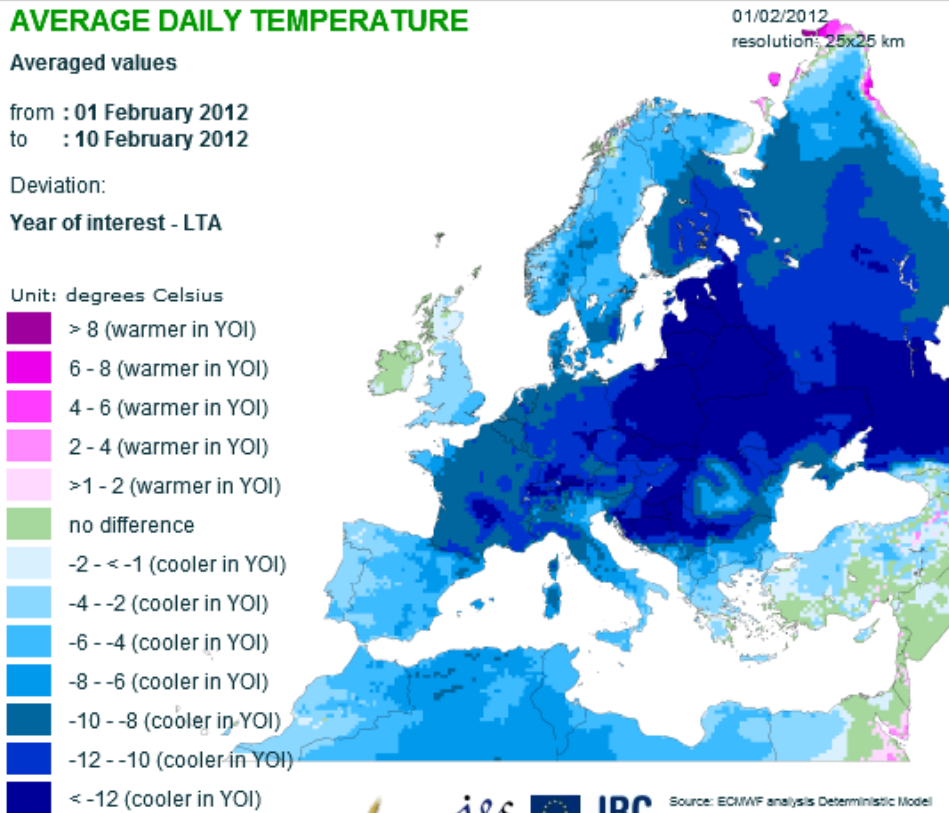
Cold spell 2012: Some examples



- **LNG cargo diversion during the cold snap*:**
 - A cargo intended for Montoir was sent by its shipper to Fos-Cavaou, helping to relieve network constraints in the South of France;
 - A cargo intended for Rovigo (Italy) was sent by its shipper to Revithoussa (Greece);
 - A cargo intended for Fos-Tonkin (France) was sent by its shipper to Panigaglia (Italy)...
- **Floating transportation during the cold snap*:**
 - Reloading at Cartagena (Spain), for an unloading at Panigaglia (Italy)
 - Reloading at Zeebrugge (Belgium), for a partial unloading at Revithoussa (Greece) ...

*information published by Press

LNG contributed according to the impact of the cold spell



    Source: ECMWF analysis Deterministic Model
Processed by: ALTERRA Consortium
On behalf of: AGR4CAST Action - MARS Unit

SOURCE: GLE Map

Detailed information on LNG Projects is available at:
http://www.gie.eu/maps_data/index.asp

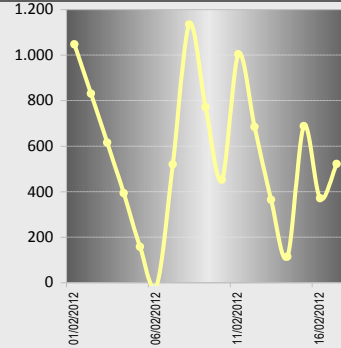
Cold spell 2012: role of LNG



FRANCE

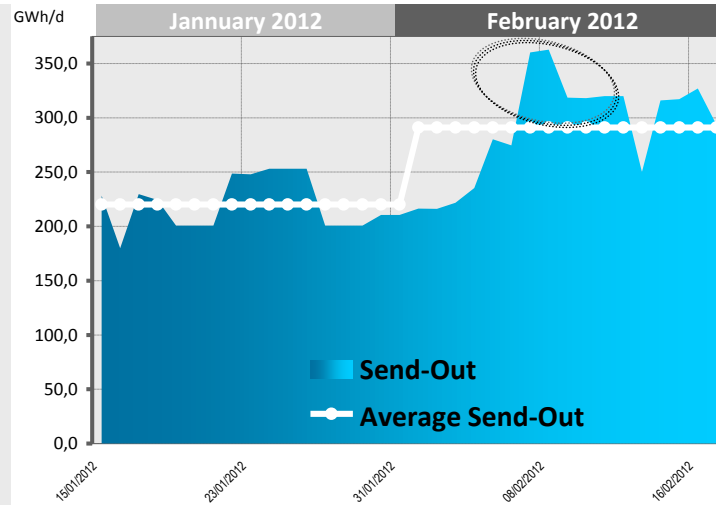
Final Stocks LNG TKs 1st Feb -17th Feb 2012

Δ stock Tks **-820 GWh**



2 days of Autonomy

Number of Days that could be maintained the maximum Send-out



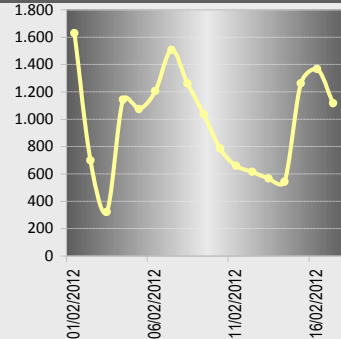
Increase of Send-out during the cold spell*: **32,19%**

*from 1st to 17th Feb over 15th to 31st Jan

BELGIUM

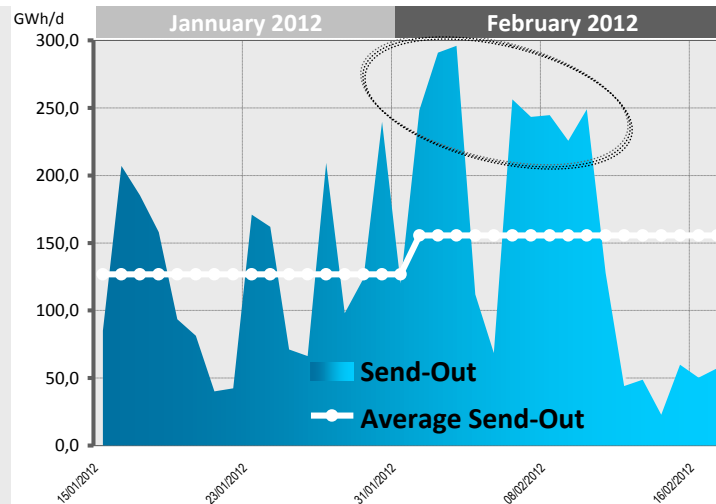
Final Stocks LNG TKs 1st Feb -17th Feb 2012

Δ stock Tks **-1.005 GWh**



4 days of Autonomy

Number of Days that could be maintained the maximum Send-out



Increase of Send-out during the cold spell*: **22,80%**

*from 1st to 17th Feb over 15th to 31st Jan

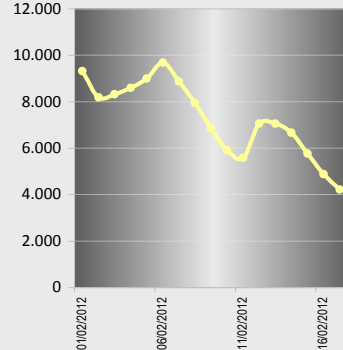
Cold spell 2012: role of LNG



SPAIN

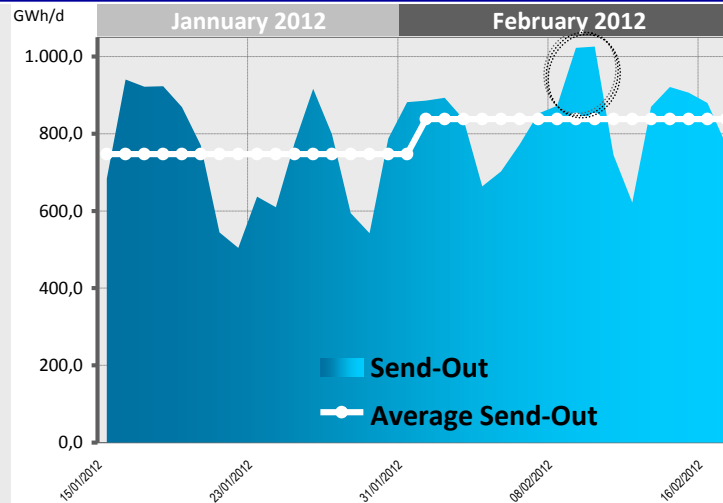
Final Stocks LNG TKs
1st Feb -17th Feb 2012

Δ stock TKs -4.429 GWh



7 days of Autonomy

Number of Days that could be maintained the maximum Send-out



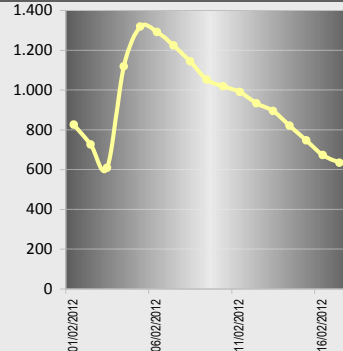
Increase of Send-out during the cold spell*: 12,14%

*from 1st to 17th Feb over 15th to 31st Jan

PORTUGAL

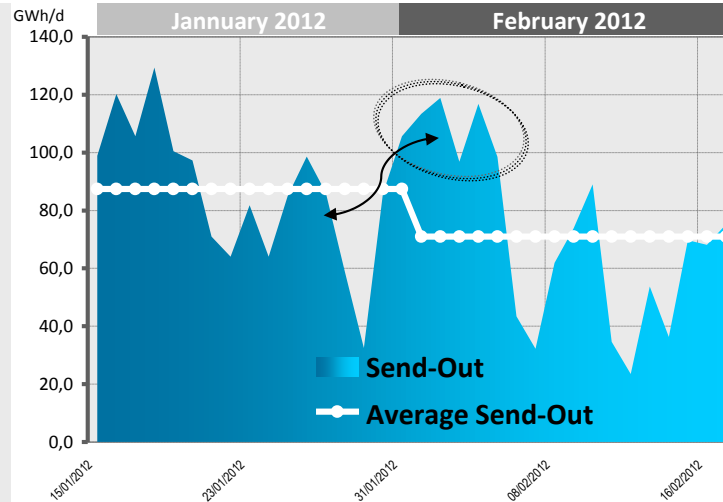
Final Stocks LNG TKs
1st Feb -17th Feb 2012

Δ stock TKs -314 GWh



8 days of Autonomy

Number of Days that could be maintained the maximum Send-out



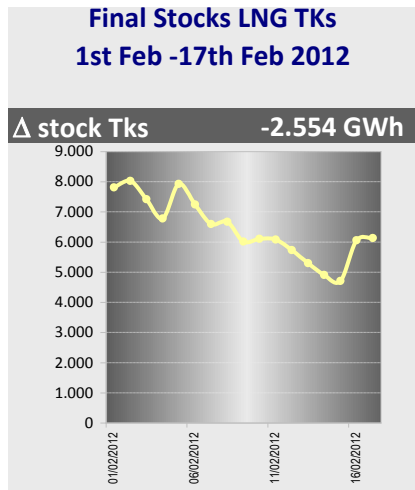
Increase of Send-out during the cold spell*: -18,81%

*from 1st to 17th Feb over 15th to 31st Jan

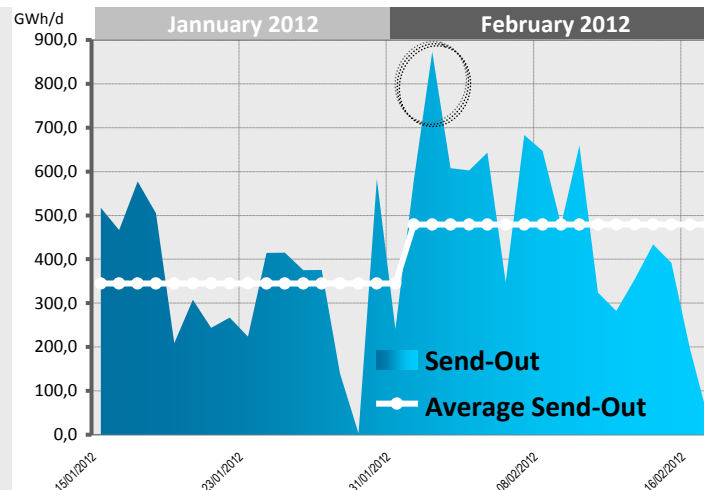
Cold spell 2012: role of LNG



UK

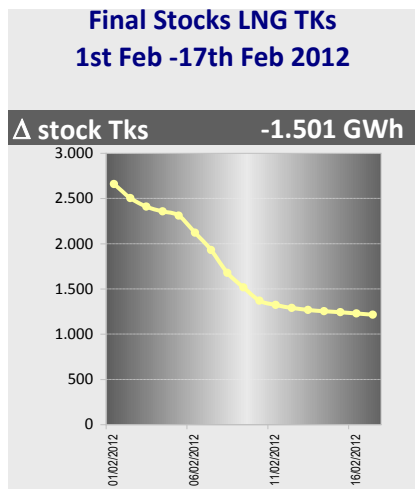


8 days of Autonomy
Number of Days that could be maintained the maximum Send-out

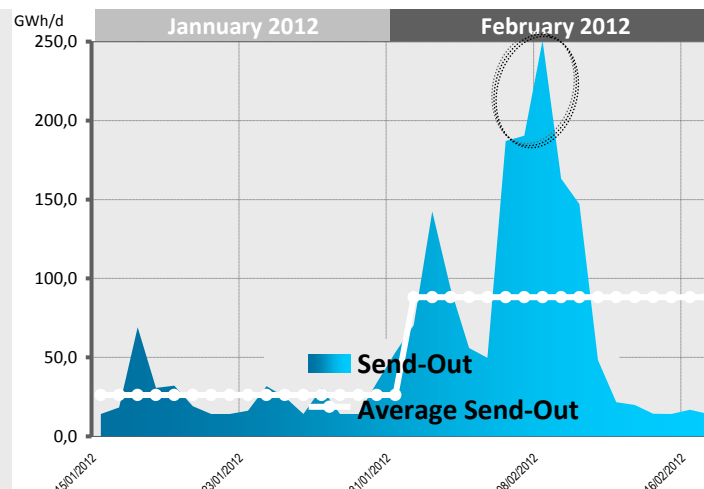


Increase of Send-out during the cold spell*: 38,84%
*from 1st to 17th Feb over 15th to 31st Jan

NETHERLANDS



7 days of Autonomy
Number of Days that could be maintained the maximum Send-out



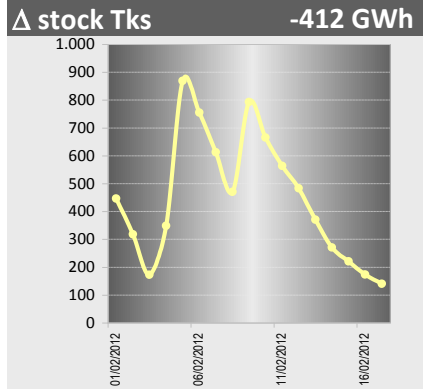
Increase of Send-out during the cold spell*: 237,13%
*from 1st to 17th Feb over 15th to 31st Jan

Cold spell 2012: role of LNG



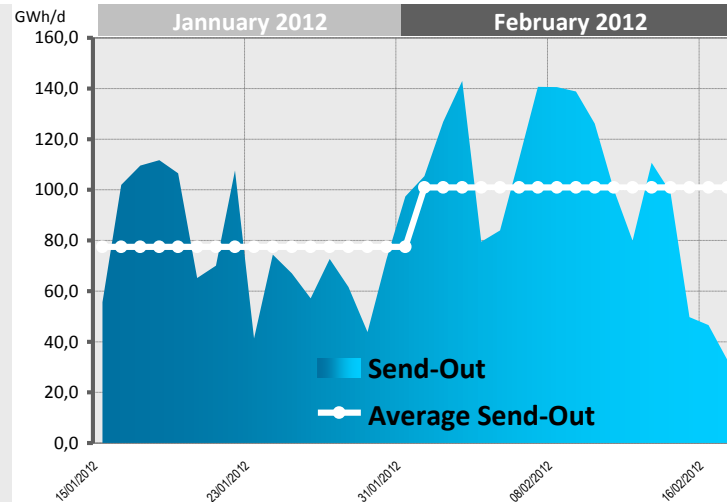
GREECE

**Final Stocks LNG TKs
1st Feb -17th Feb 2012**



3 days of Autonomy

Number of Days that could be maintained the maximum Send-out



Increase of Send-out during the cold spell*: 30,38%

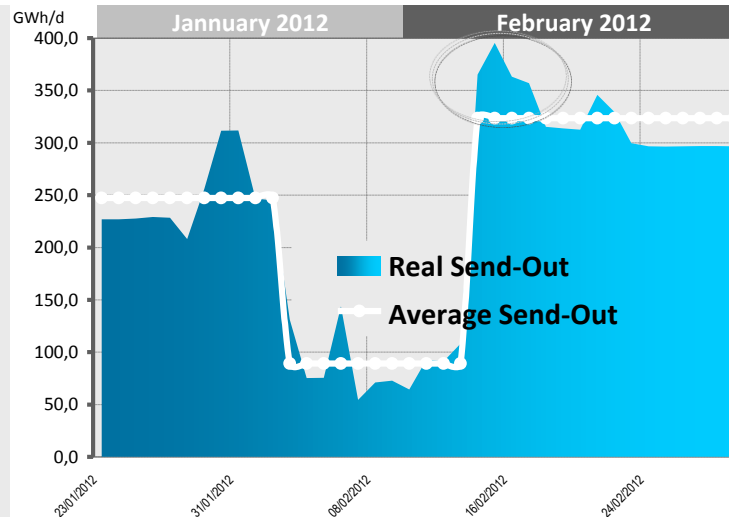
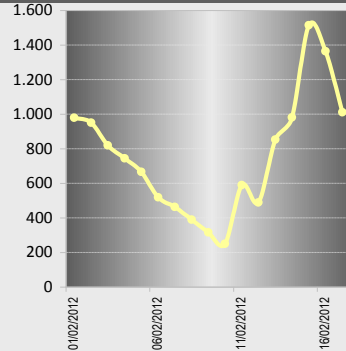
*from 1st to 17th Feb over 15th to 31st Jan

Cold spell 2012: role of LNG

ITALY

Final Stocks LNG TKs
23rd Jan -29th Feb 2012

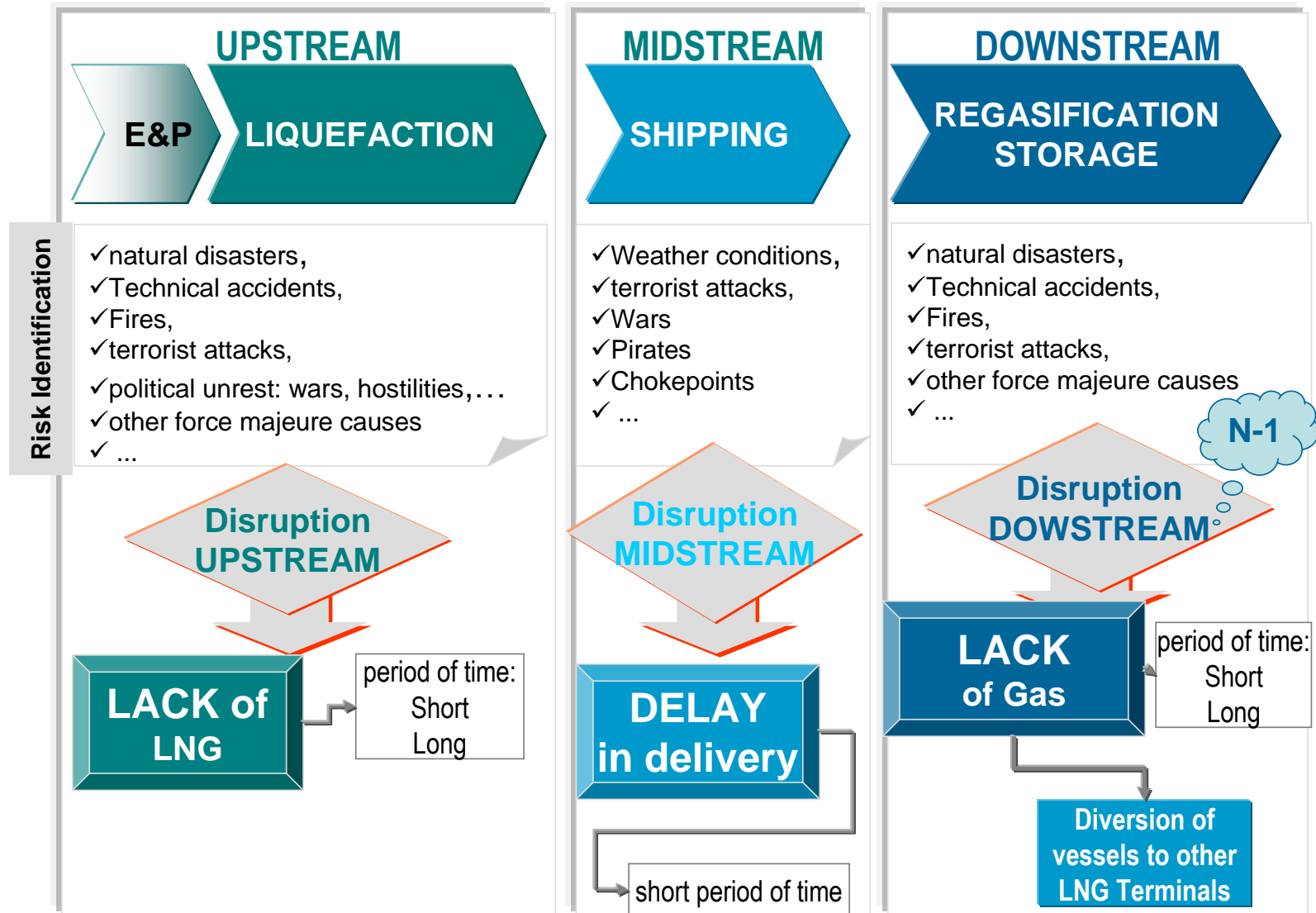
Δ stock TKs -216 GWh



Lower send-out during cold spell was offset by increased send-out rate in the second half of February

- Meteo marine condition in the whole Med were rough and extremely severe in the Northern Adriatic sea (severity estimated to be a one in one hundreds years event) putting at risk safety mooring operations both for loading and off-loading off-shore facilities.
- For the off-shore terminal, the volume expected (about 0,5 BCM) was unloaded as of mid Feb. as soon as the meteo/marine conditions improved within the safety limits as per applicable regulation
 - Promptly ramped-up on February 16th (peak at 285 GWh) giving a significant contribution to meet the increased demand

LNG Supply Disruption Study: Associated risks of the LNG Chain



Conclusions



- **LNG contribution during the cold spell was significant**
- **LNG contribution would be even greater if the same cold spell arrives at the end of a harsh winter (with low levels of gas in UGS)**
- **During the cold spell LNG proved that market is able to react:**
 - ✓ **alternative LNG sources / cargoes** can potentially be found worldwide
 - ✓ **LNG ships** can be **diverted** or **LNG cargoes reloaded** in order to **supply any other EU terminal where gas is the most needed** by responding to market needs/price signals
 - ✓ **LNG storage** in tanks can provide transitional mitigation
- **LNG Terminals INFRASTRUCTURE (regasification and LNG storage capacities) has a very important role in this case, and shall allow LNG SUPPLIES to Europe be competitive at the world level**
- **The way forward to find the right solution for security of supply is to achieve a BALANCE between the role of the market (supply) and the role of the infrastructure**



**Thank you
for your kind attention!**

Back-up

GLE Transparency developments



LNG Terminals Transparency Template

	Macro Area	Submenu
1	CONTACT	Contact
2	TERMINAL CHARACTERISTICS	Facilities main characteristics
		Service Description
		LNG Quality
3	HOW TO BECOME A CUSTOMER / USER	Main steps for applying for access
		Contract information
		TSO information
		Ship procedures
4	CAPACITIES	Primary market
		Secondary market
5	TARIFF	Regulated terminals
		Exempted terminals
6	LEGAL DOCUMENTATION	Contracts/Codes
		Regulation/Legislation
7	OPERATIONAL DATA	Historical data
		Operational data
8	MISCELLANEOUS	Projects

A new tool installed on a relevant page of each LSO's websites:

- Facilitating the access to the already existing information

What is next?



GLE LNG DATA PLATFORM

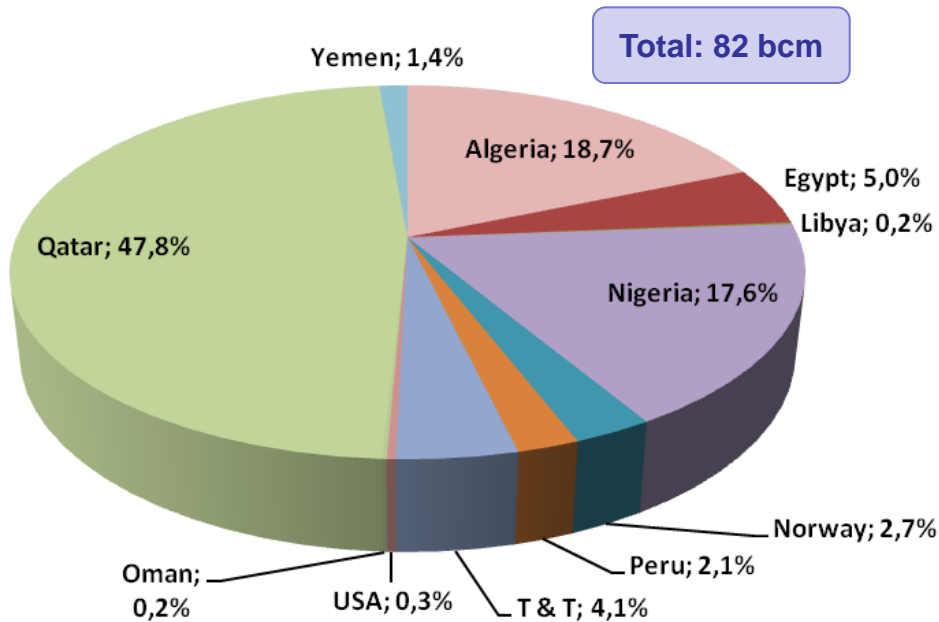
- Inflows
- Outflows
- LNG Stocks levels

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In some cases, the signature of a confidentiality agreement may be required beforehand.

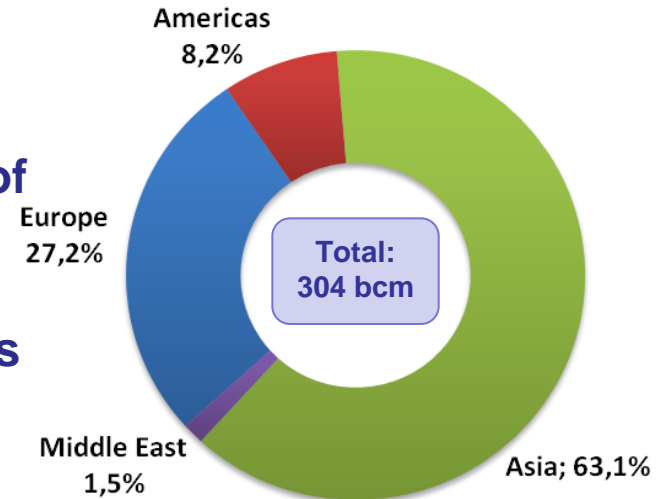
LNG = Enhancing of Security of Supply



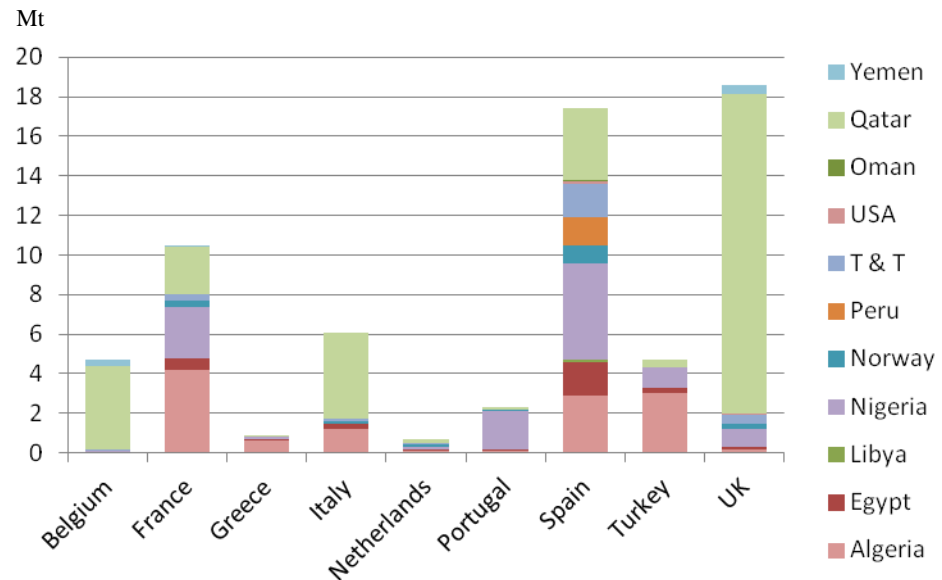
LNG Imports in Europe per Exporting country



Share of LNG World Imports



LNG Imports in Europe by source



SOURCE: GIIGNL THE LNG INDUSTRY 2011
[Europe includes EU-27 + Turkey]