



Panel Session 3

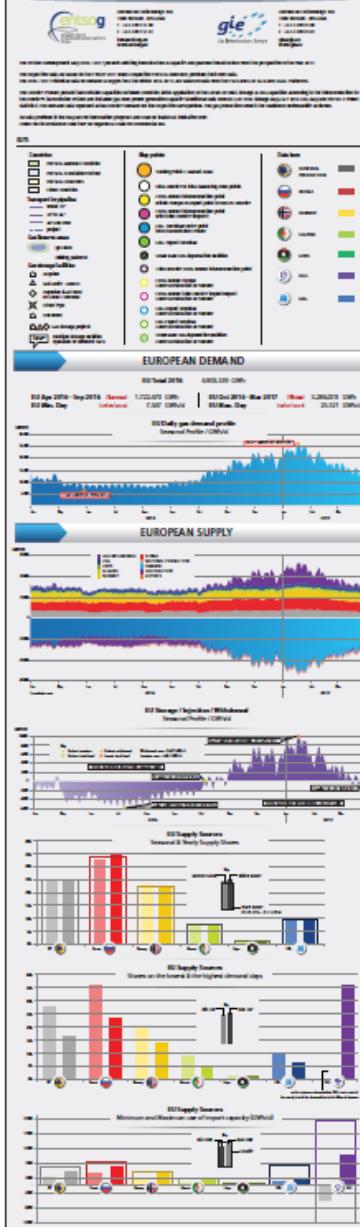
Enhancing Gas Supply Security and Diversification: New Sources and Markets

6th IEF-IGU Ministerial Gas Forum

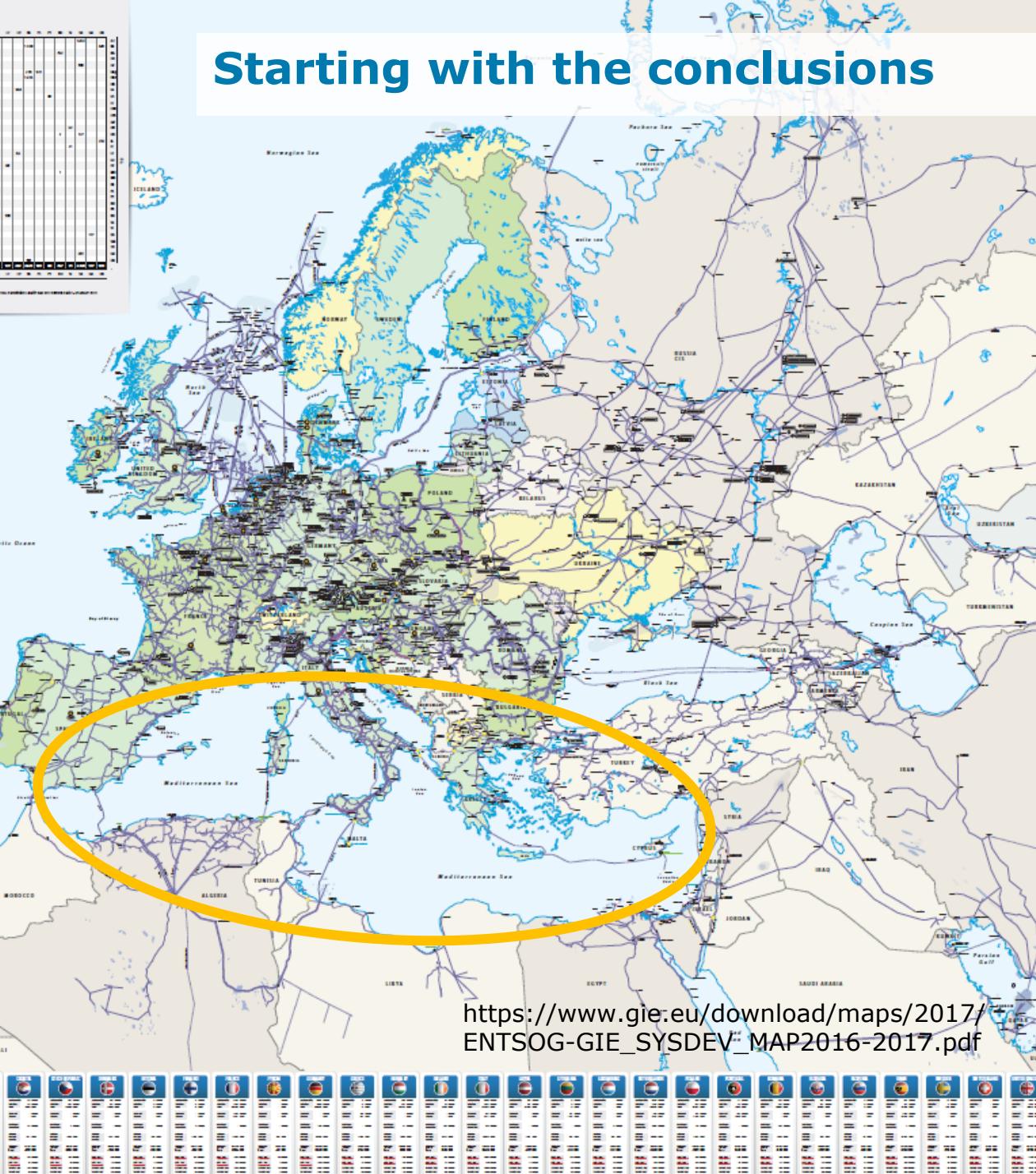
Francisco de la Flor

Barcelona, 22nd November 2018

SYSTEM DEVELOPMENT MAP 2016 / 2017



Starting with the conclusions



[https://www.gie.eu/download/maps/2017/
ENTSOG-GIE_SYSDEV_MAP2016-2017.pdf](https://www.gie.eu/download/maps/2017/ENTSOG-GIE_SYSDEV_MAP2016-2017.pdf)

Enagás: Who and where we are



Spain

- 11,000 km of gas pipelines
- 6 LNG terminals (+1 in planning*)
- 3 underground storage facilities
- 19 compressor stations
- 6 international connections

Mexico

TLA Altamira LNG Terminal
Soto La Marina Compressor Station
Morelos Gas Pipeline



Peru

Transportadora de Gas del Perú (TgP)
Compañía Operadora de Gas del Amazonas (Coga)



Chile

GNL Quintero LNG Terminal



Greece

Consortium awarded the tender for the acquisition of 66% DESFA

Greece, Albania and Italy

Trans Adriatic Pipeline (TAP)

What we do



Storage



LNG



Transmission



Evolution of natural gas infrastructures in Spain

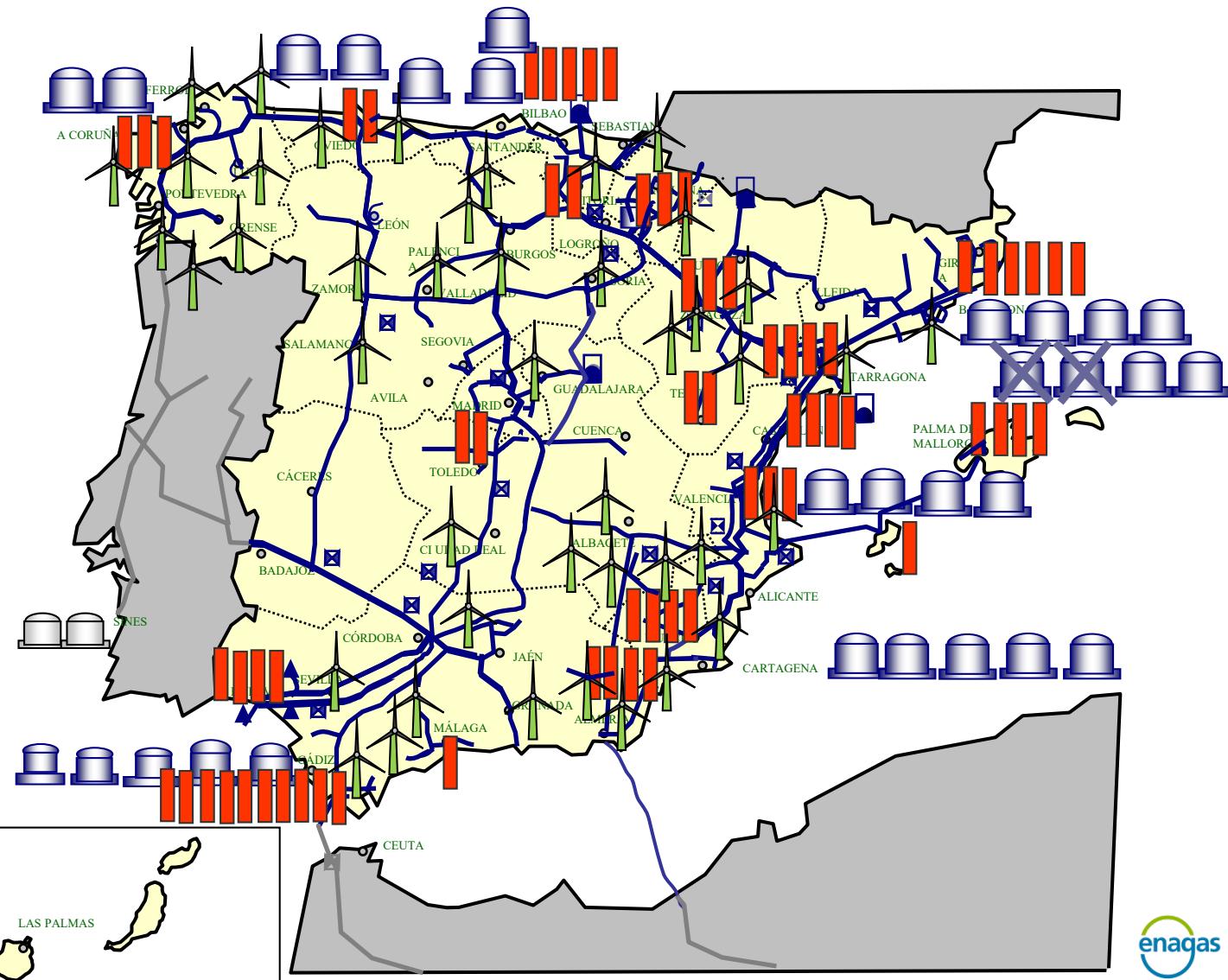
2018

Basic gas infrastructures

- LNG terminals
- Compressor stations
- UGS
- Fields
- In operation
- CCGT

CCGTs 27 GW

Wind Power
23 GW



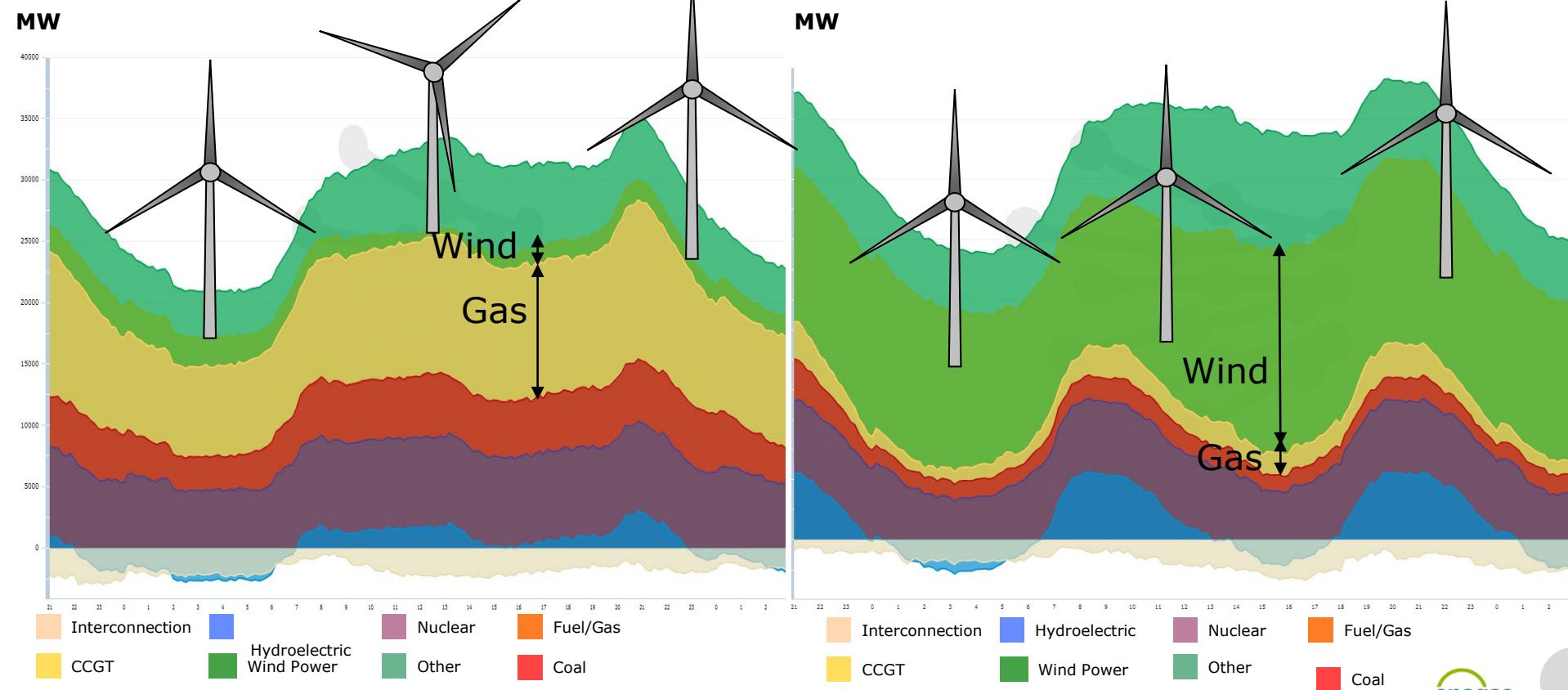
Enabling the integration of RES

30-september-2010

6-Februray-2013

Wind 1%
17:45h

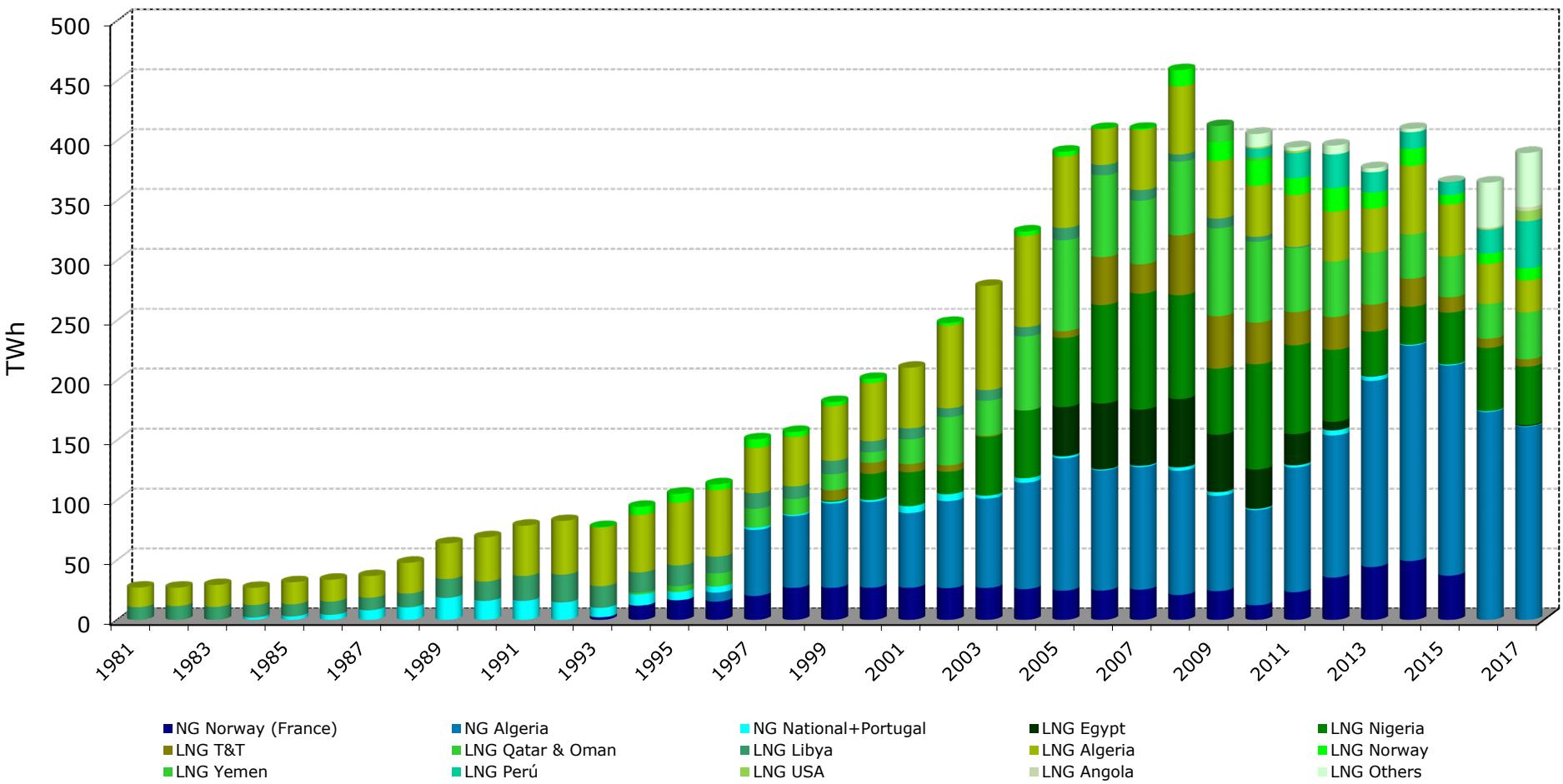
Wind 66.5%
15:50h



Source: REE, Enagás



Gas supplies in Spain



- NG Norway (France)
- LNG T&T
- LNG Yemén

- NG Algeria
- LNG Qatar & Oman
- LNG Perú

- NG National+Portugal
- LNG Libya
- LNG USA

- LNG Egypt
- LNG Algeria
- LNG Angola

- LNG Nigeria
- LNG Norway
- LNG Others

Investment Climate



THE INTERNATIONAL ENERGY CHARTER: A GLOBAL INVESTMENT FRAMEWORK FOR THE NATURAL GAS INDUSTRY

During the 2015-2018 triennium, the Study Group on Best Practices in Governance and Regulation in IGU's Strategy Committee has cooperated with the Energy Charter Secretariat to look at natural gas market reforms, develop case studies on technical, commercial and regulatory changes, and review best practices to mitigate commercial and regulatory risks. Prior to a full presentation of the findings at WGC 2018, this article highlights international trends in investment protection. By Dr Ernesto Bonafé and Dr Urban Rusnák

The IEA 2017 World Energy Outlook (WEO) forecasts a growth of natural gas consumption of 45% by 2040 with most of the projected growth in demand taking place in Asian developing economies led by China and India. Also, there is a shift towards a more flexible, liquid, global market in LNG. According to the IEA 2017 Global Gas Security Review, however, security of natural gas cannot be taken for granted, as shown by the disruptions due to harsh winter temperatures in Southern Europe, the diplomatic tensions in the Gulf and the hurricanes



Dr Urban Rusnák, Energy Charter Secretary General (left) with Francisco de la Flor, Leader of the Study Group on Best Practices in Governance and Regulation in IGU's Strategy Committee.

than other fossil fuels". IGU was also

make it a source that is "available, affordable, economical, clean and sustainable". The need to reduce methane emissions and to distinguish natural gas from other fossil fuels was also stressed.

In the G20 Beijing meeting of 2016, energy ministers confirmed that "natural gas can be a less emission intensive fossil fuel, and can play an important and effective role in moving towards a low GHG emission energy future". G20 ministers also noted that natural gas is an integral part of the global energy supply and, as such,



2012-2015 Conclusions

- Recovery of long term investment in the low carbon economy and long term viability for investors
- Incentives for new investments in regulated transmission assets
- Future evolution of load factors in transmission assets

The raising of awareness of the CH₄ emissions issue of the gas industry



marcogaz
TECHNICAL ASSOCIATION
OF THE EUROPEAN NATURAL GAS
INDUSTRY



gas naturally
making a clean future real

IGP International Association of Oil & Gas Producers

IPIECA

GERG
groupe européen des recherches gazaines

IGU
INTERNATIONAL GAS UNION
UNION INTERNATIONALE DU GAZ

sGmf

SEA\LNG

OGI
OIL AND GAS CLIMATE INITIATIVE

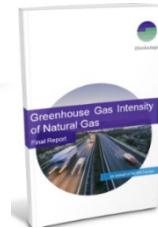
SIGTTO

UNECE

UNEP

Global Methane Initiative

CLIMATE & CLEAN AIR COALITION
TO REDUCE SHORT-LIVED
CLIMATE POLLUTANTS



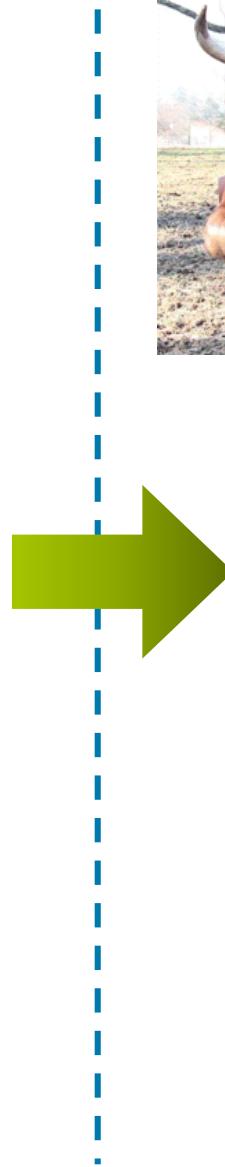
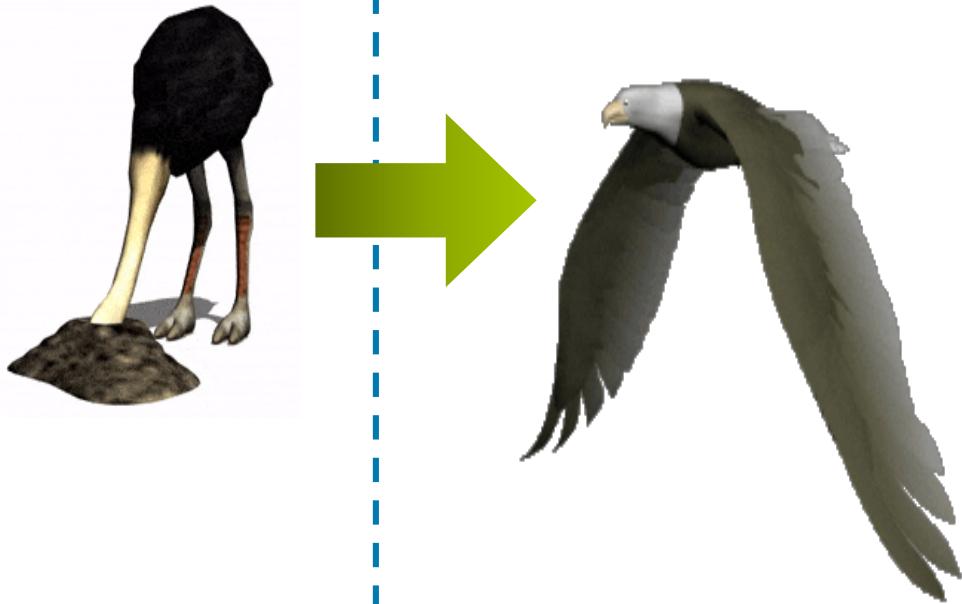
Guiding principles:

- ✓ To continually reduce CH₄ emissions;
- ✓ advance strong performance across gas value chains;
- ✓ improve accuracy of CH₄ emissions data;
- ✓ advocate sound policies and regulations on CH₄ emissions;
- ✓ and increase transparency



enagas

Methane Emissions – In Summary



Gazoduc Maghreb-Europe – TT Maroc



Thank you very much!

