MedReg

Mediterranean Energy Regulators

ConferenzaGNL 2017

SMALL SCALE TO LARGE MARKET

Strategies & Technologies towards the Mediterranean Area

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LNG INDUSTRY DYNAMICS

Prof. Valeria Termini
AEEGSI Commissioner - MEDREG Vice President

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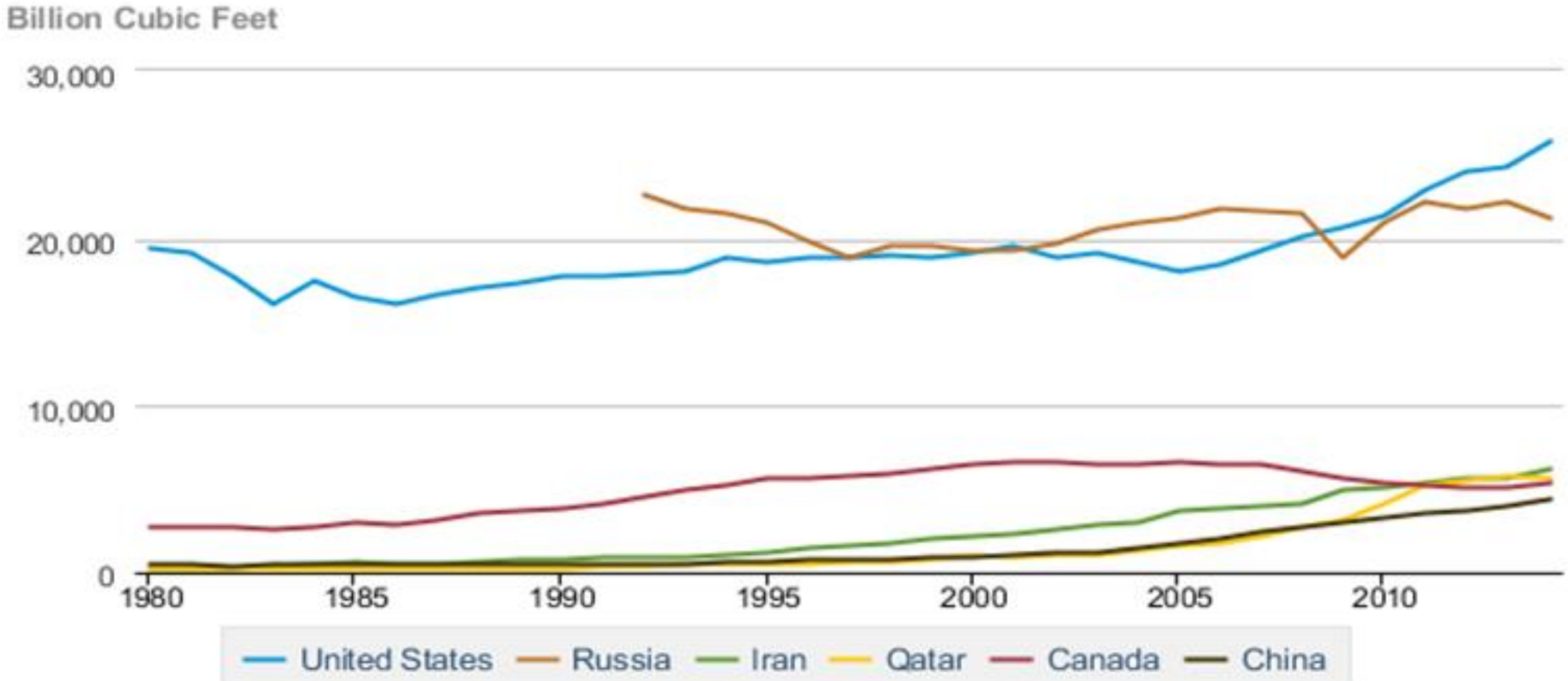
I. GLOBAL TREND: new elements

In the "energy transition" gas will remain a crucial resource for a long time

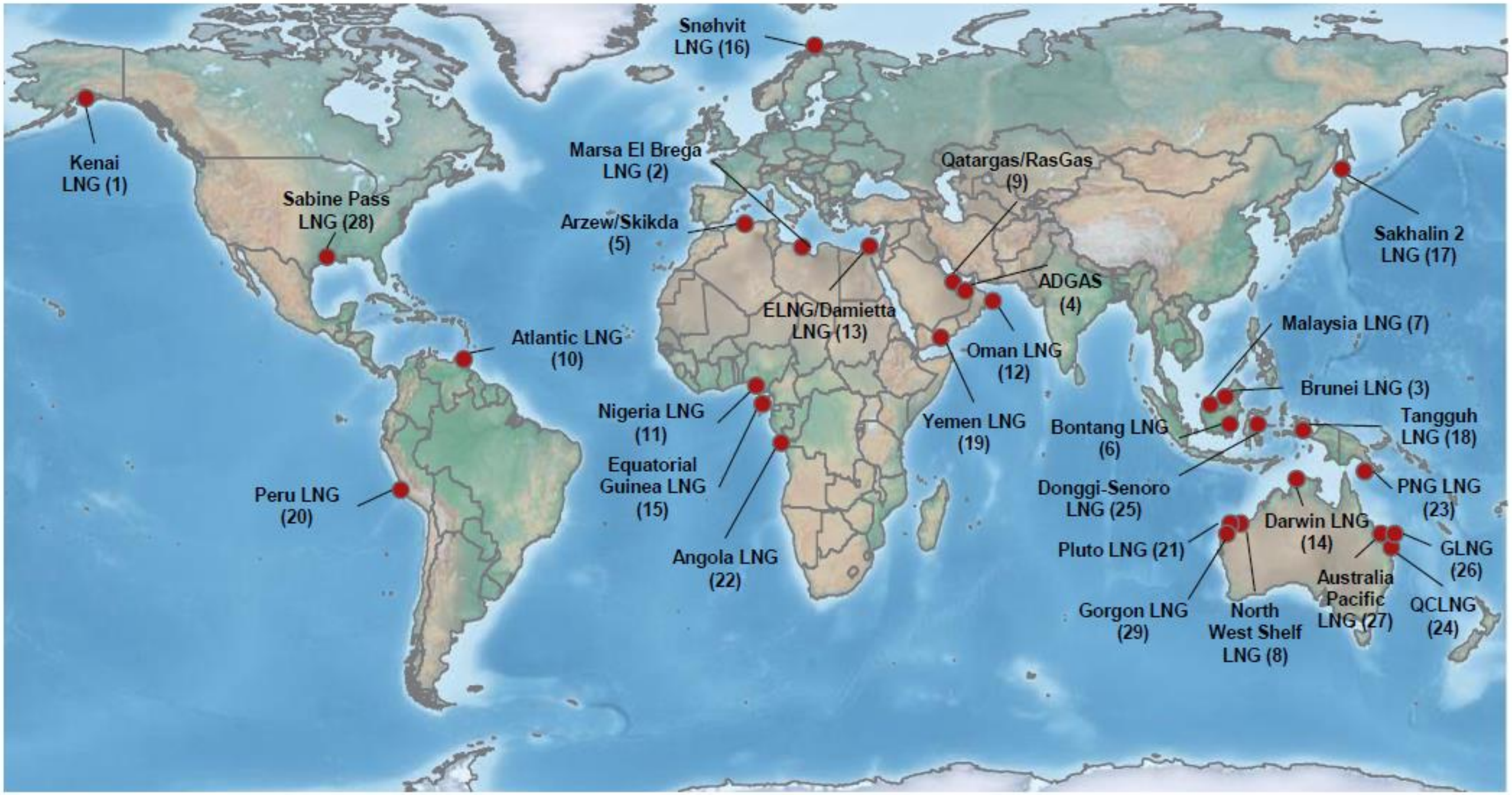
- Technology
- Shipping Vs Pipeline
- Importing Exporting Regions
- Contracts – pricing mechanisms

Gas supply: the top 5 + Australia



Source: U.S. Energy Information Administration

Global Liquefaction Plants (January 2017)



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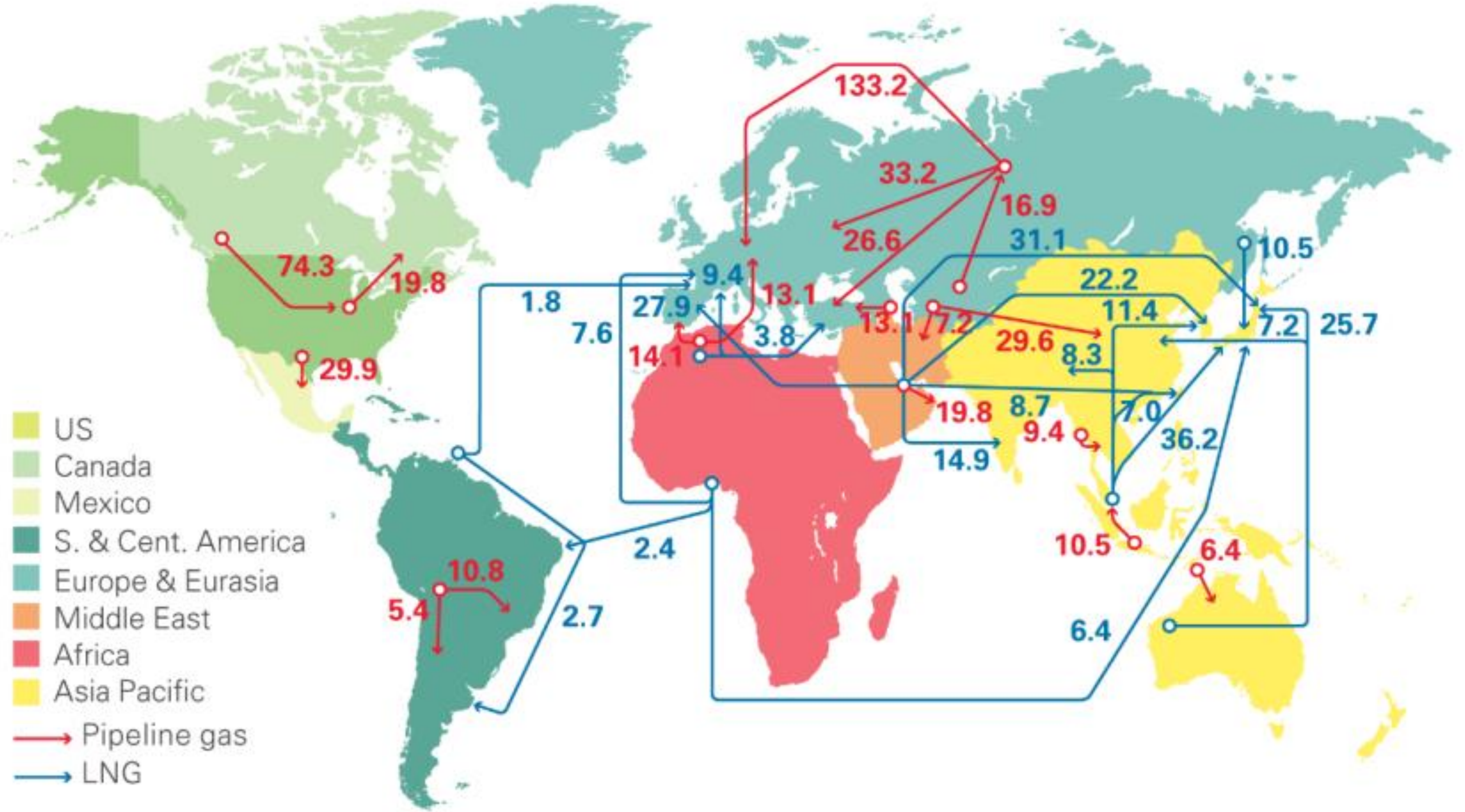
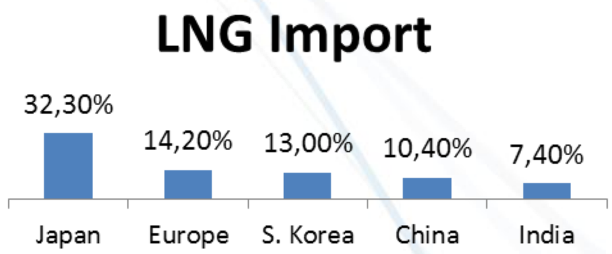
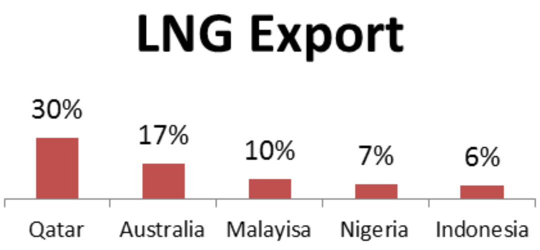
Global gas trade – shipping vs pipeline

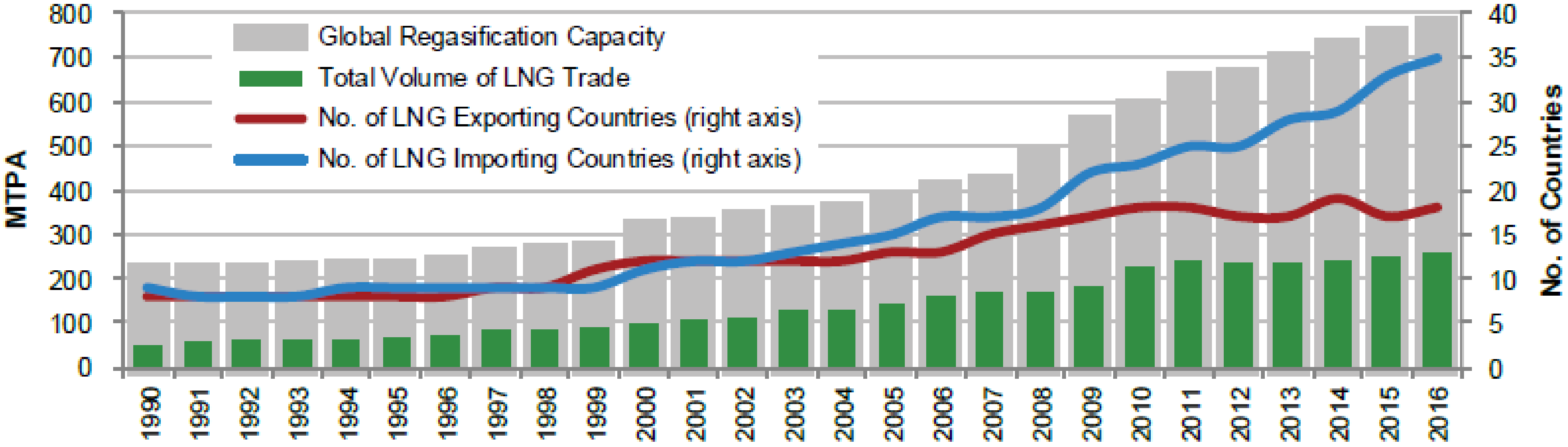


Fonte: BP Statistics 2016

LNG trade volumes (2016)

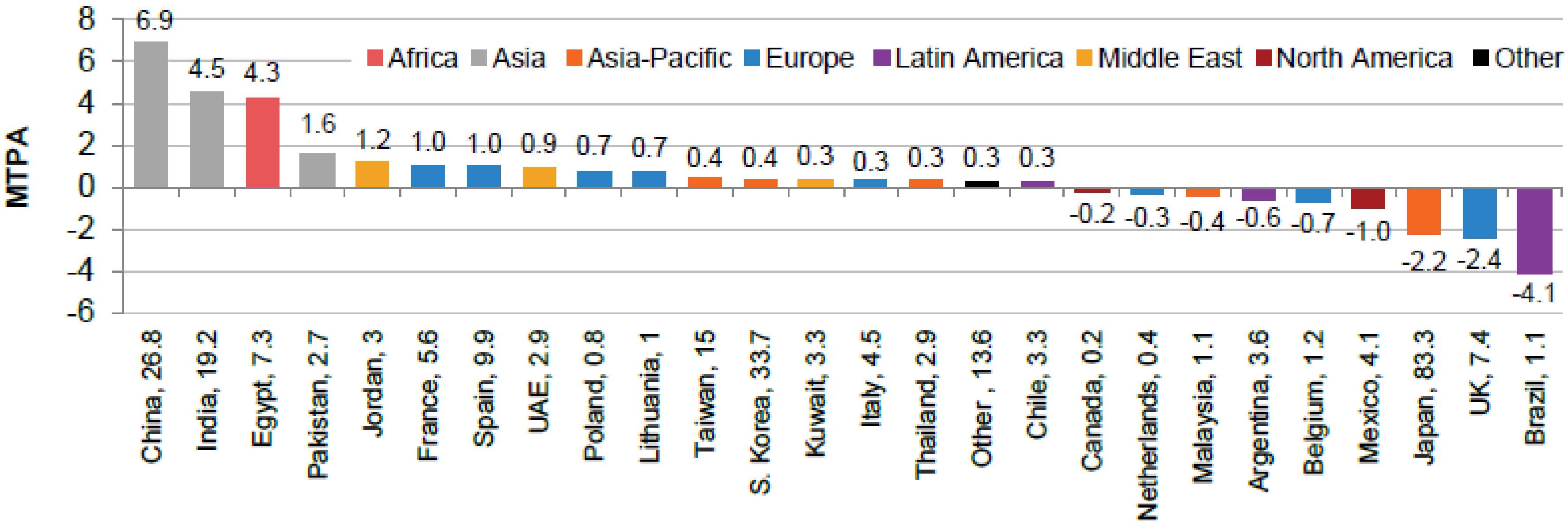






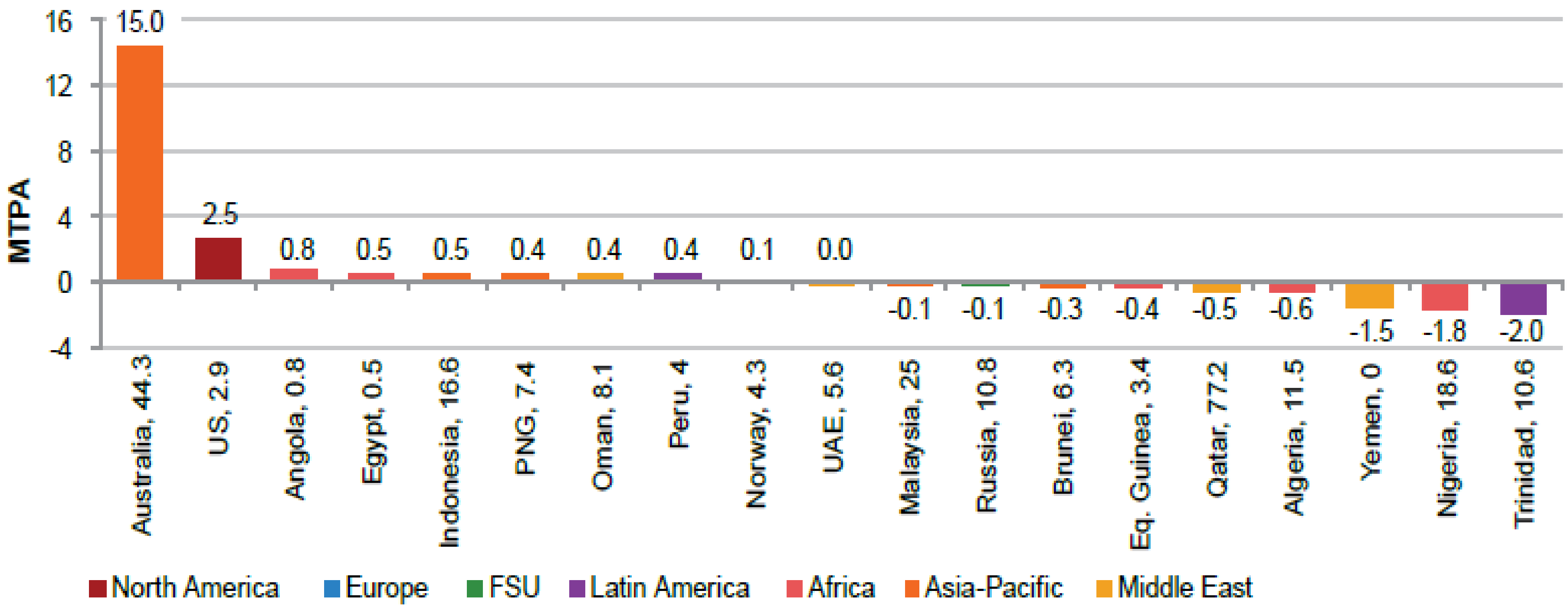
Source: IGU 2017

Changes: incremental LNG imports (2015)



Source: IGU 2017

Changes: incremental LNG exports (2015)



Source: IGU 2017

II. LNG GAME CHANGERS

- **FLEXIBILITY OF SUPPLY (shipping):**
  - **portfolio traders**
  - **flexibility of destination**
  - **shorter terms**

- **EVOLUTION of PRICE FORMATION**

Types of Price Formation Mechanisms (PFM)

- Oil Price Escalation (**OPE**)
- **Gas-on-Gas Competition (GOG)**

- Bilateral Monopoly (BIM)
- Netback from Final Product (NET)
- Regulation: Cost of Service (RCS)
- Regulation: Social and Political (RSP)
- Regulation: Below Cost (RBC)

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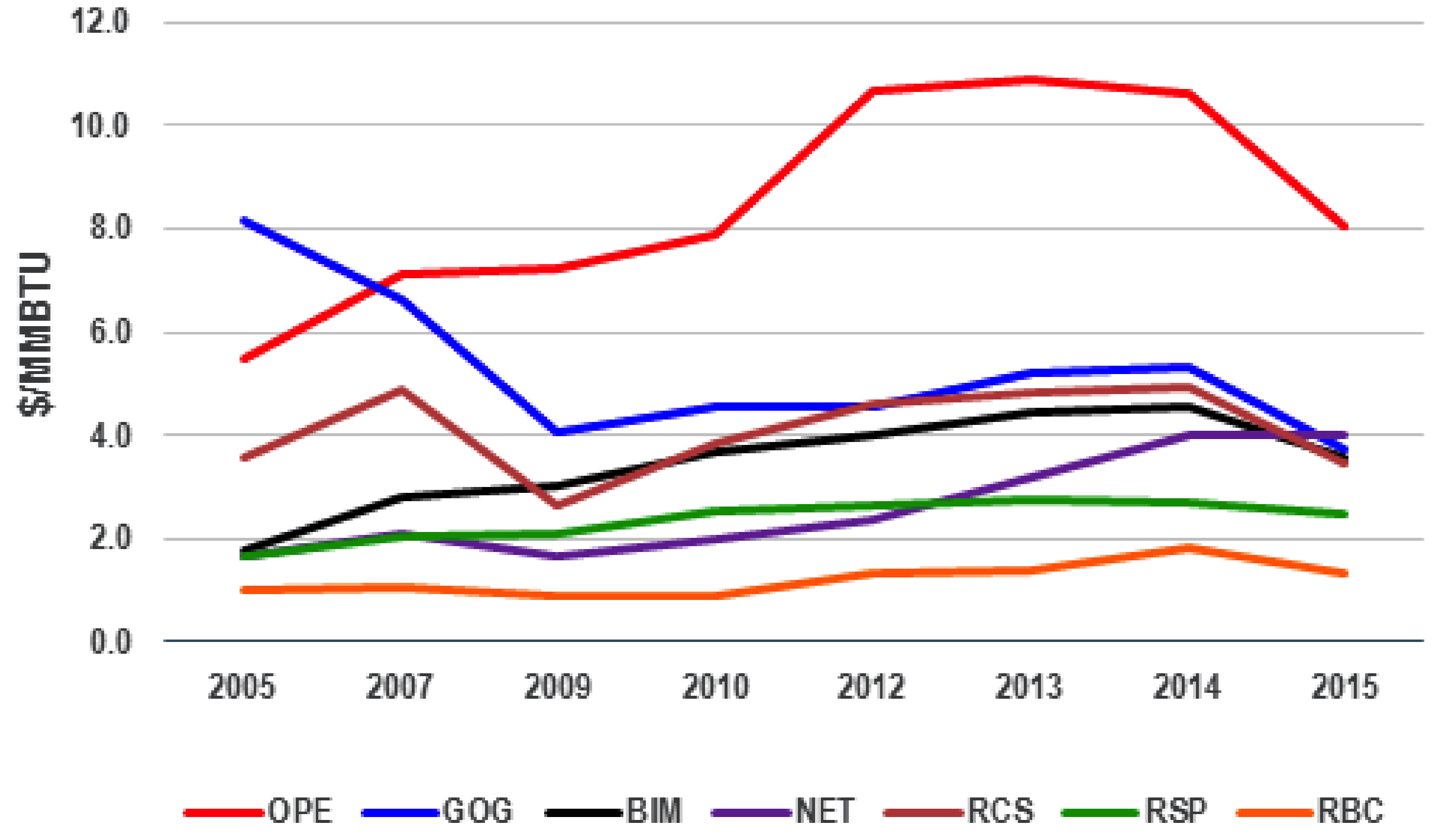
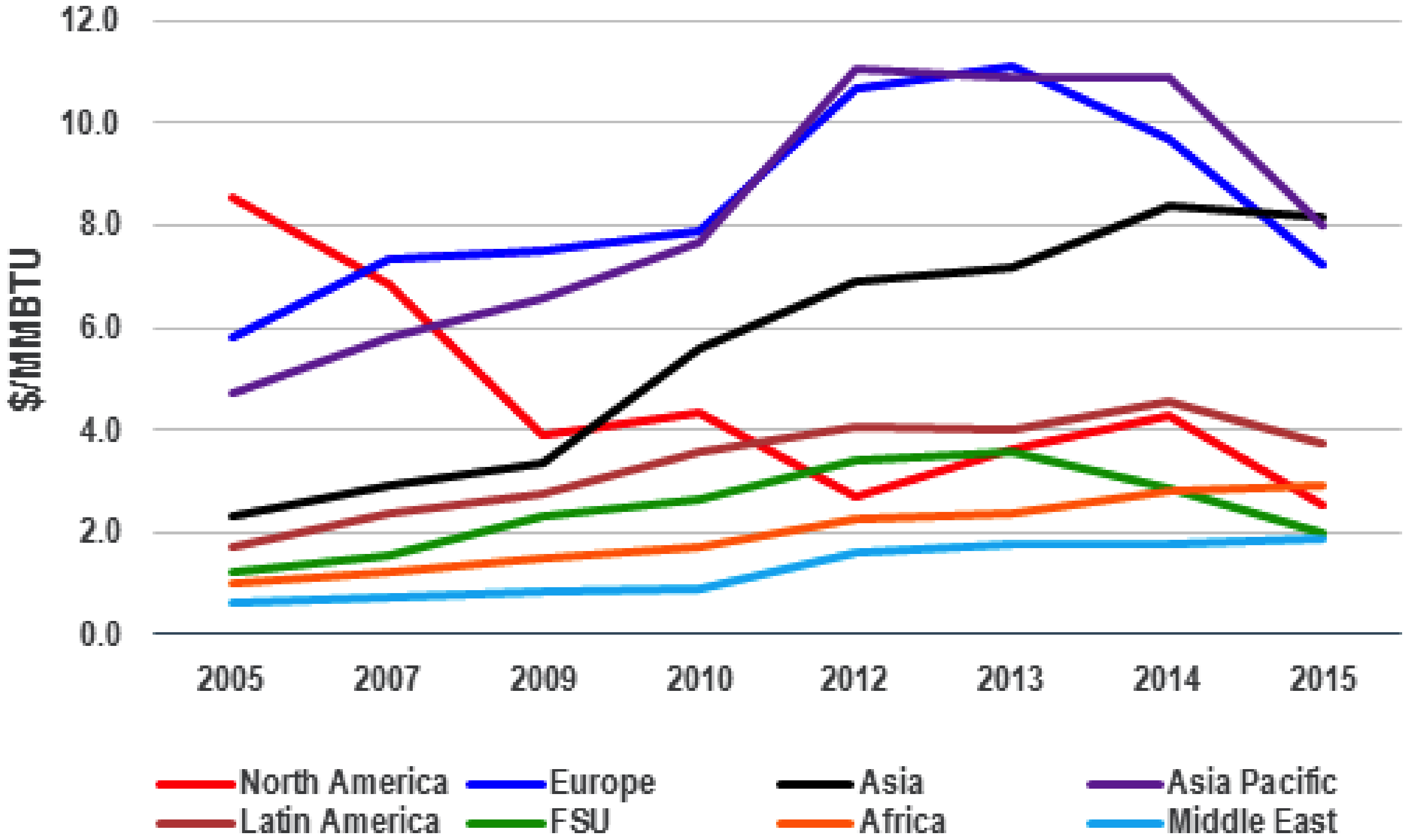
Wholesale Price Levels 2005 to 2015 by Price Formation Mechanism



Wholesale Price Levels 2005 to 2015 by Region



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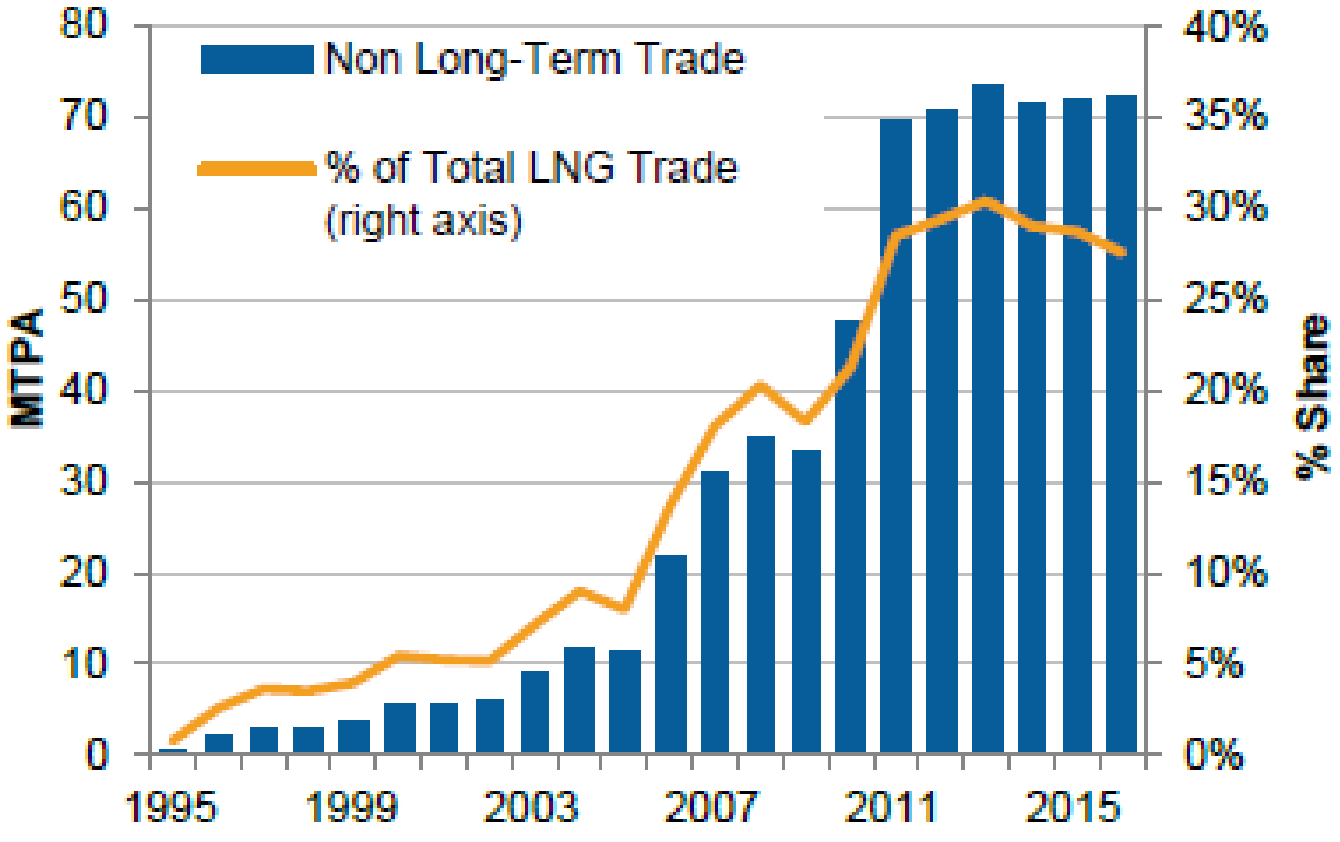
Non long term trade, 1995-2016



Sources: IHS, IGU

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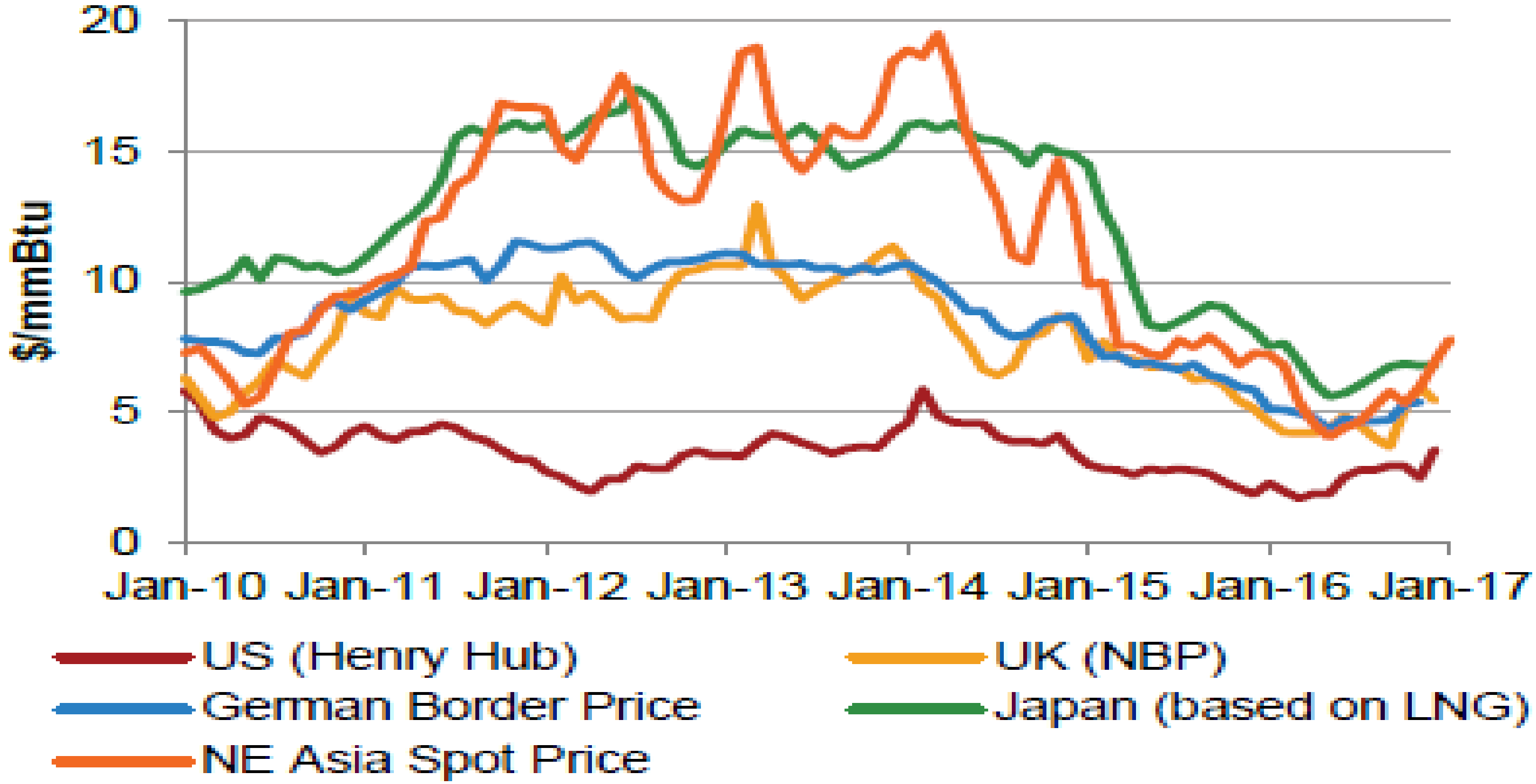
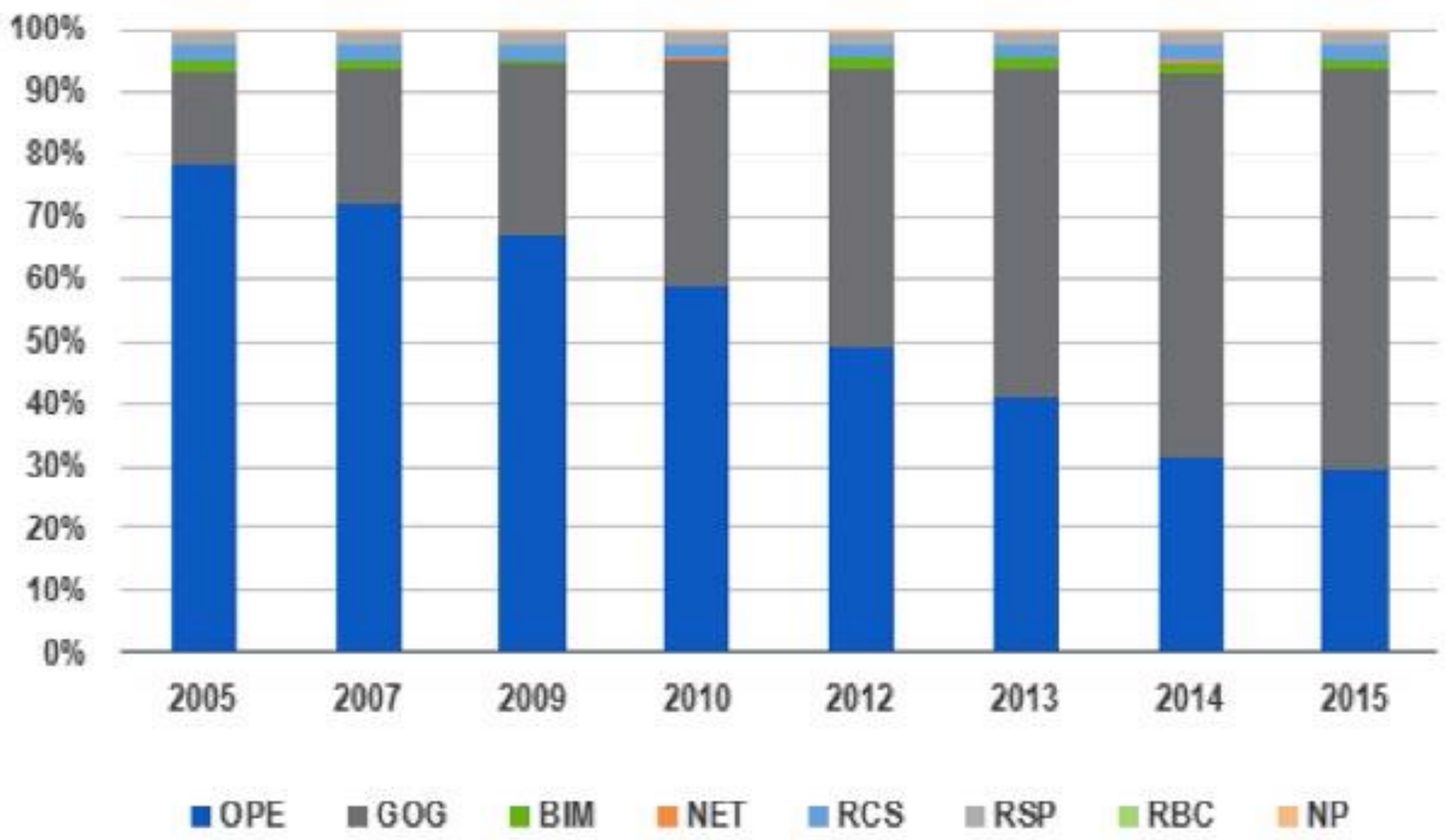
Average Regional Gas Prices

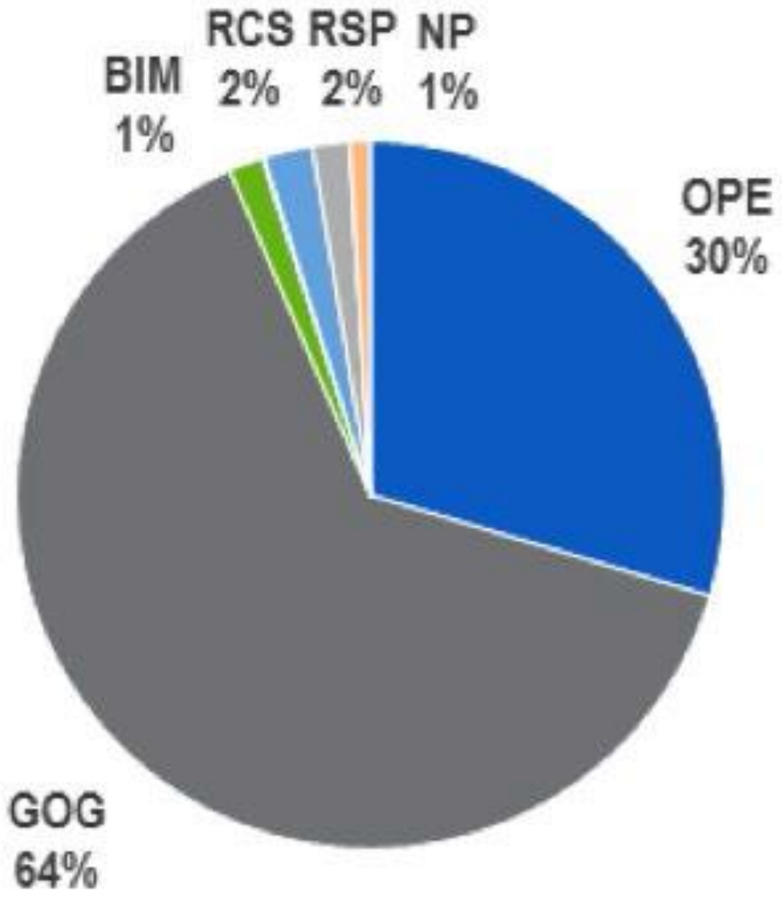


Sources: IHS, Cedigaz, US DOE

Europe Price Formation trend (2005-2015)



Europe Price Formation 2015



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III. LNG in EUROPE

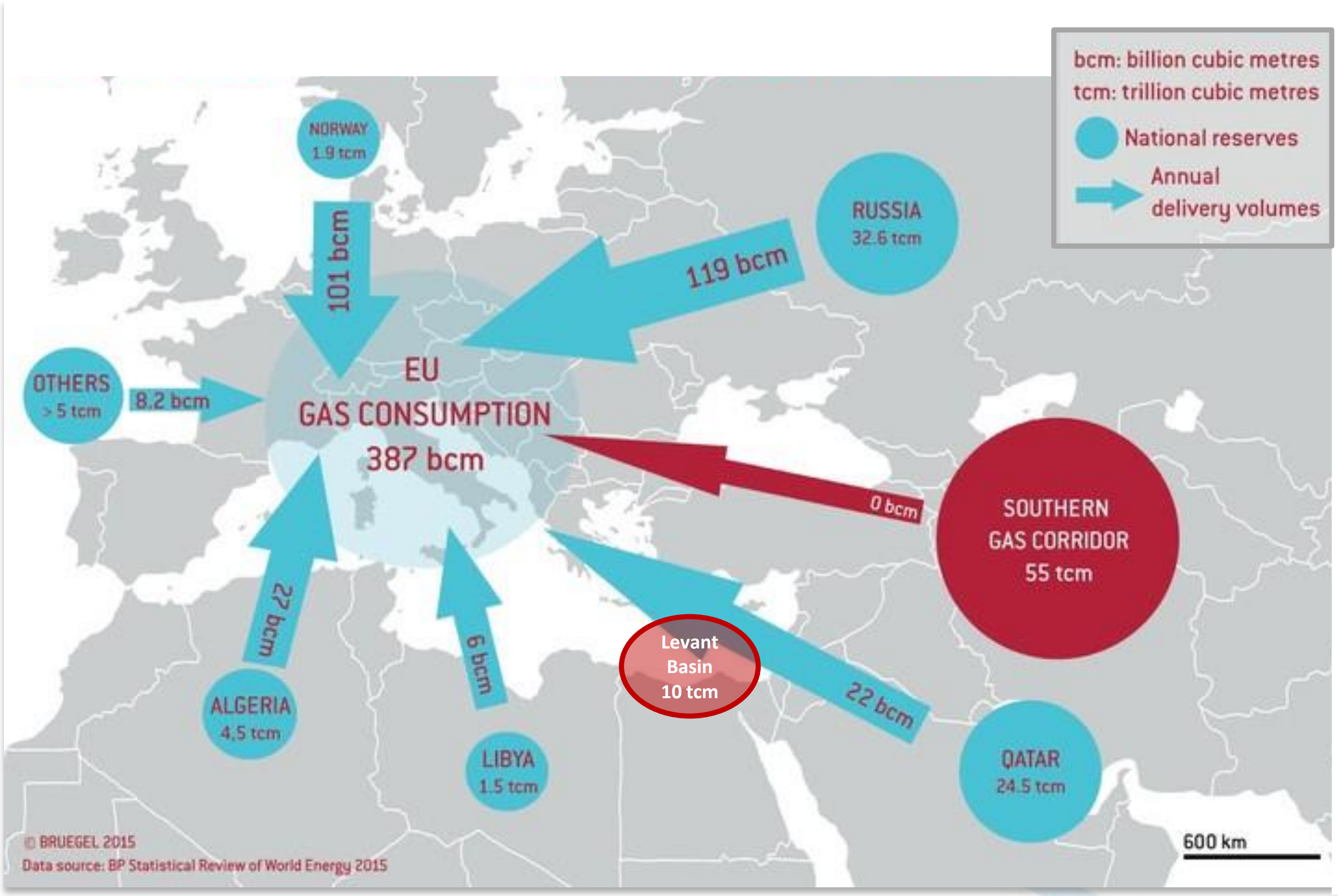
EUROPE…

…& THE MEDITERRANEAN REGION:

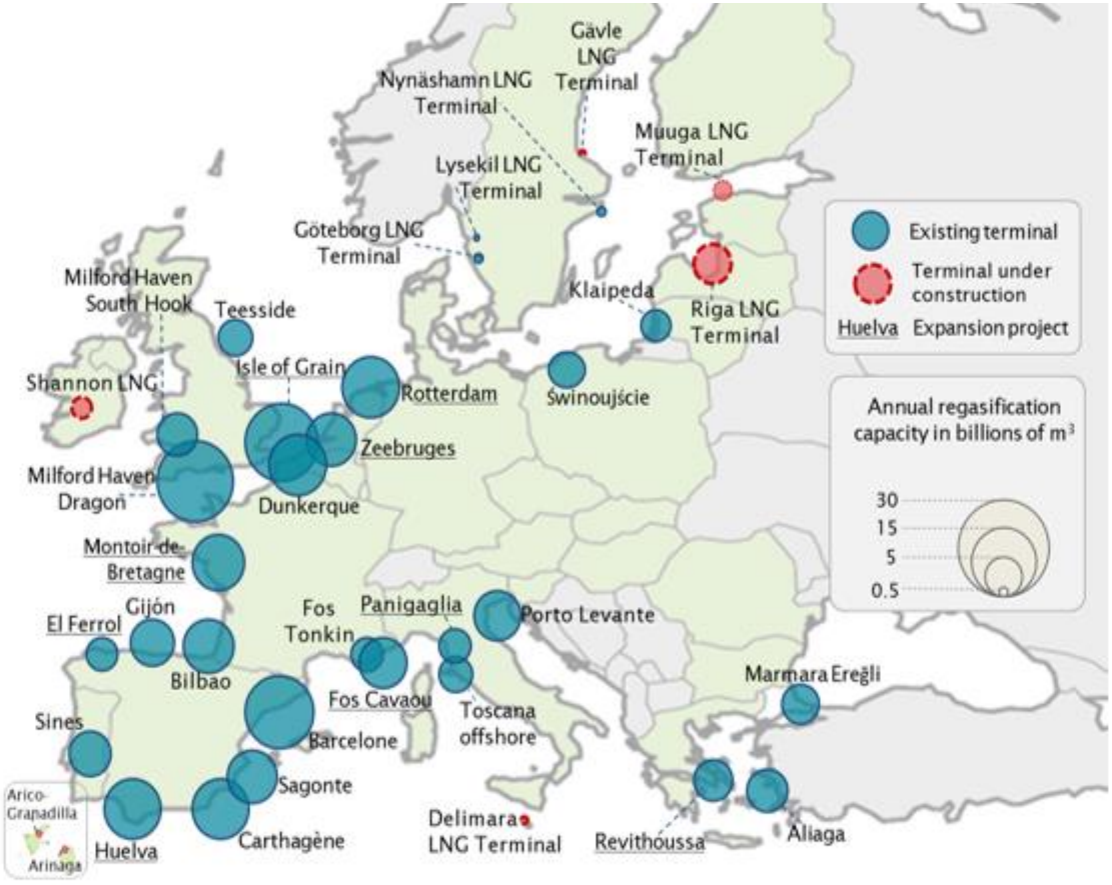
- EU policy
- EU Regulation - Medreg

EU Energy Union

Policy: diversification of sources, security of supply



Existing & Planned LNG Terminals in Europe



Source : GIIGNL (2016), GLE (2015)

EU Energy Union

Regulation

- Reverse flow projects along existing pipelines

- New infrastructure projects for North-South corridors

- EU strategy for liquefied natural gas and gas storage

  - *Competition*
  - *Increased security of supply*

Southern corridor: main Projects

IV. Mediterranean Energy Context

European Union

•Energy Demand Growth ≈ 1 %
•RES Integration
•Energy Market Integration

Turkey

•Energy Demand Growth ≈ 5,4%/y (2004-2014)
•RES objectives 30% (al 2023)
•Relevant Infrastructural Projects

North Africa

•Energy Demand Growth ≈ 5,4%/y up to 2030
•RES Objectives 30-50%
•Huge Oil & Gas Resources

Israel

- Limited Growth
- Huge Gas reserves (1Tmc)

Source: BP Statistical Review

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East Med: discoveries

Name	Country	Discovery	Size (bcm)
Gaza Mar.	Palestinian Terr.	1999	28
Mari-B	Israel	2000	28
Tamar	Israel	2009	280
Dalit	Israel	2009	14
Leviathan	Israel	2010	620
Aphrodite	Cyprus	2011	130
Tanin	Israel	2012	34
Tamar SW	Israel	2013	26
Karish	Israel	2013	51
Royee	Israel	2014	91
Zohr	Egypt	2015	850

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Barriers and challenges to energy investments

Political Influence

Legal Framework

Subsidization

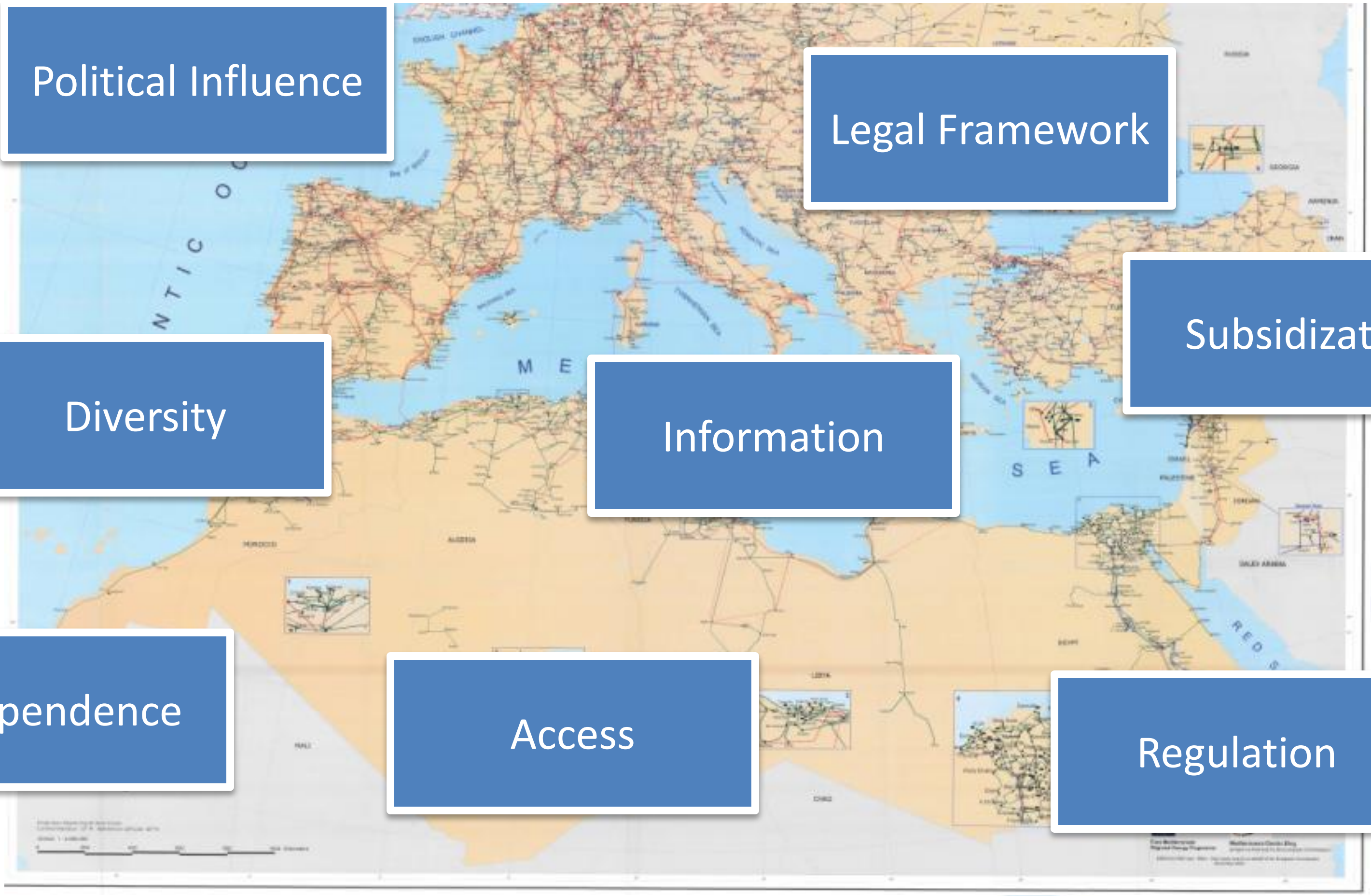
Diversity

Information

Independence

Access

Regulation



Source: MEDREG

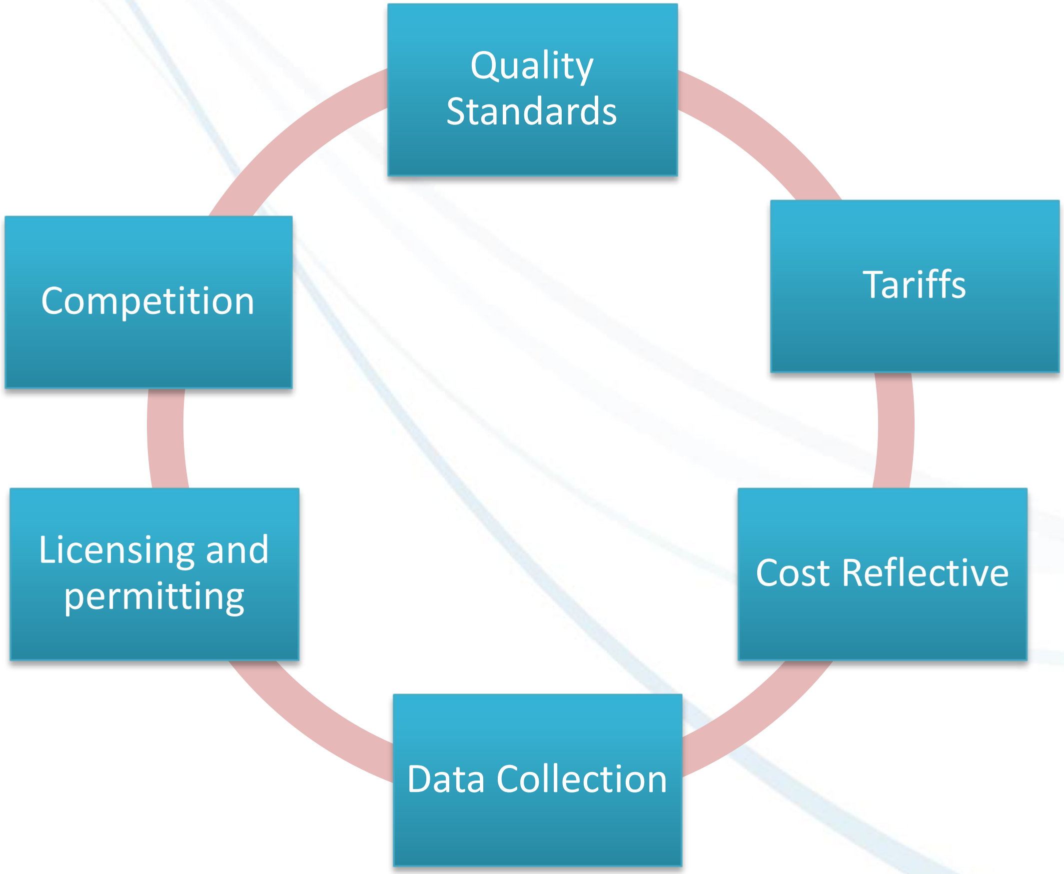
Regulatory contributions to integrate Mediterranean gas markets

- In respect of the different gas segments of the value chain, the regulatory function is substantial:
  - 1. It has to **secure an independent management of the regulated systems**;
  - 2. It has to **organize regulated or negotiated access to the networks** (Third Party Access), including a system of **access conditions and tariffs**;
  - 3. It has to **develop procedures to evaluate the need for capacity expansions** in the regulated market segments.

- To an increasing extent, **gas systems stretch out** over **different countries** and world regions, which display different traditions in terms of their institutional and structural characteristics. This begs for some **degree of coordination** between bodies regulating the gas industry, to arrive at a coherent combinations of regulatory approaches along the value chain.

The role of regulators

How regulation can incentivize investments



MEDREG - National Reforms Initiatives

Structured plan with a tailor-made approach to support national reforms and individual regulatory priorities to support and strengthen energy regulators in Southern and Eastern Shore Countries

Methodology

- **Need collection**: Questionnaires and Interviews to seek input and information on national situations and main regulatory issues
- **Planning**: joint development of individual plan for each member, including timelines, budget and tools;
- **Delivery:** deployment of MEDREG expertise (or if appropriate external experts)

Tools

- Peer-review activities and support in the drafting of secondary legislation
- Training and capacity building
- Institutional partnerships
- Ad hoc studies and benchmarking
- Support to EC twinning projects and TAIEX missions between member regulators

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MEDREG contribution on regulation

Main Output

- Guidelines on **Third Party Access**
- Interconnection **Infrastructure** Report
- Guidelines on **Transparency**

Ongoing work

- Competition and Market **Price indicators**
- **Gas Infrastructure** report
- Guidelines on **Capacity Allocation**
- Support to establish an **Independent** Gas Regulator in Egypt

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Conclusions

- **WORLD:**

In the energy transition gas will remain a crucial resource for a long time; LNG will be a main actor in the next 20 years: major changes

- **EUROPE:**

Policy & Regulation => LNG & Med-south shore to diversify gas resources & ensure security of supply

- **MEDITERRANEAN**

Potentially, a new gas hub => rules and institution building to pave the way to investment - Medreg

Tel: +39 02 65565 557/524
Fax: +39 02 65565 342
Piazza Cavour 5, Milan 20121 (Italy)
www.medreg-regulators.org
info@medreg-regulators.org

Thank you for your attention!

vtermini@autorita.energia.it
info@medreg-regulators.org

www.medreg-regulators.org

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