

AEEGSI Key Priorities for 2017

Mediobanca Conference 2017

Milan, 27 June 2017

Prof. Valeria Termini

AEEGSI, Commissioner

I - A new World

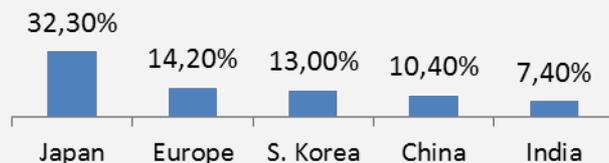
GLOBAL TREND: new elements

In the “energy transition” towards renewable sources gas will remain a crucial resource for a long time

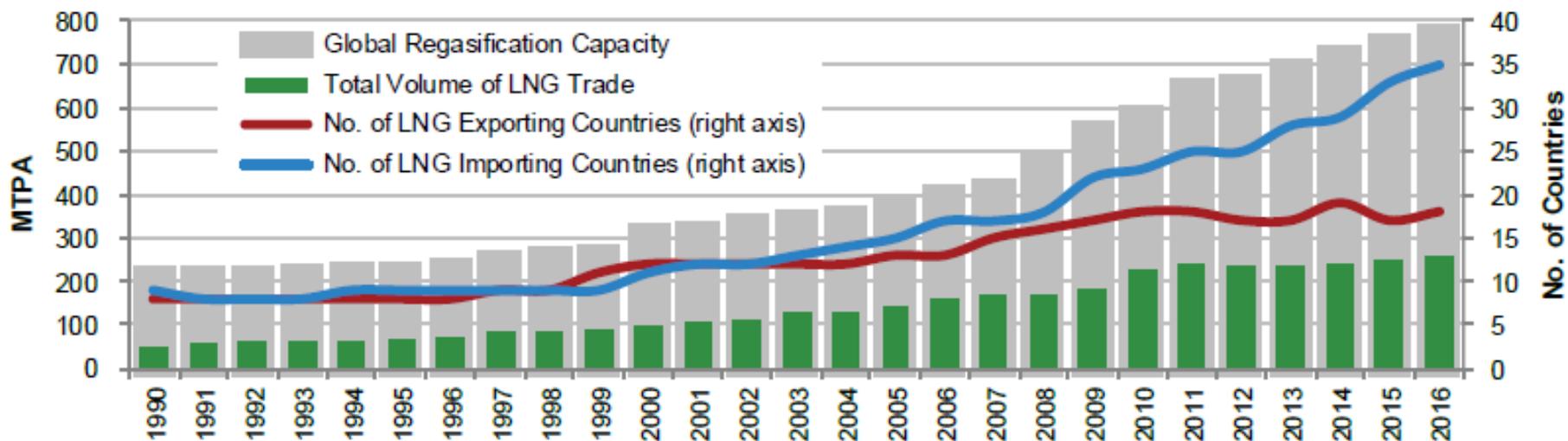
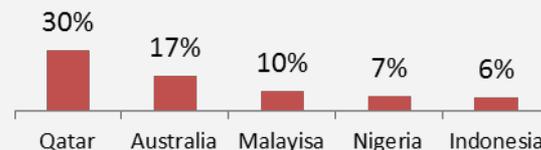
- Technology (shale gas and transports)
- Shipping Vs Pipeline (LNG)
- Changes in importing/exporting Regions
- New pricing mechanisms

LNG trade volumes (2016)

LNG Import

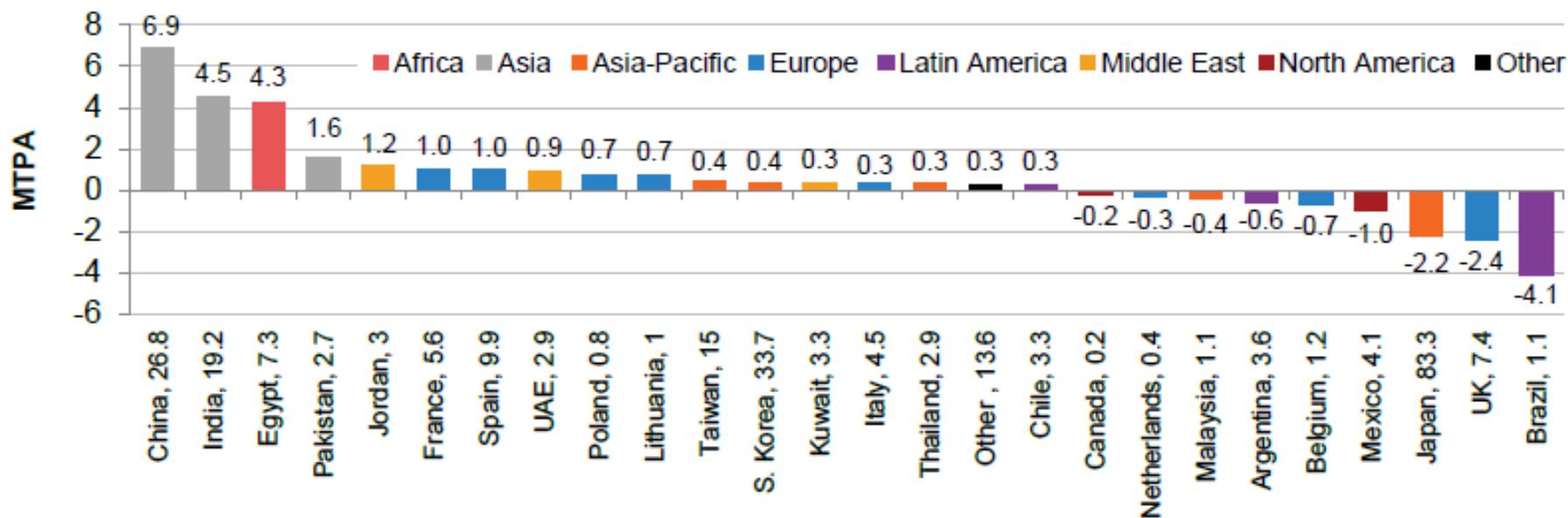


LNG Export



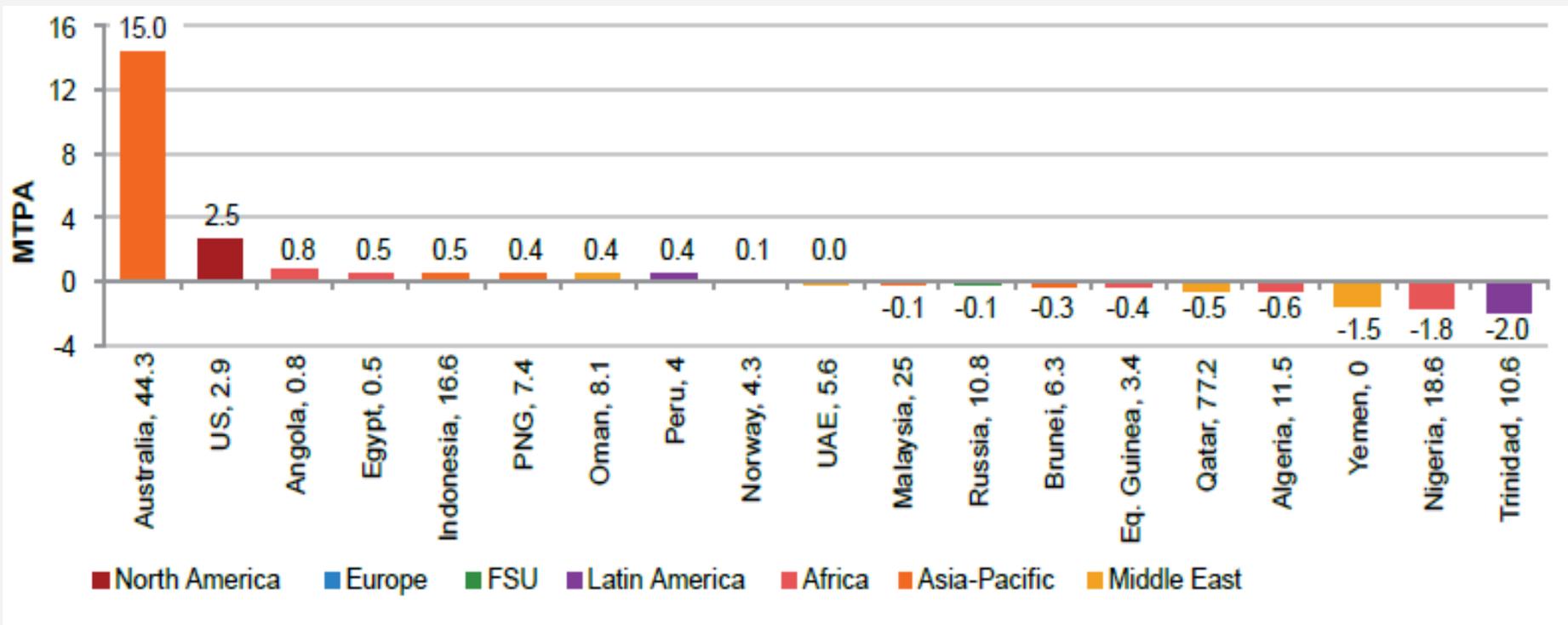
Source: IGU 2017

Changes: incremental LNG imports (2015)



Source: IGU 2017

Changes: incremental LNG exports (2015)

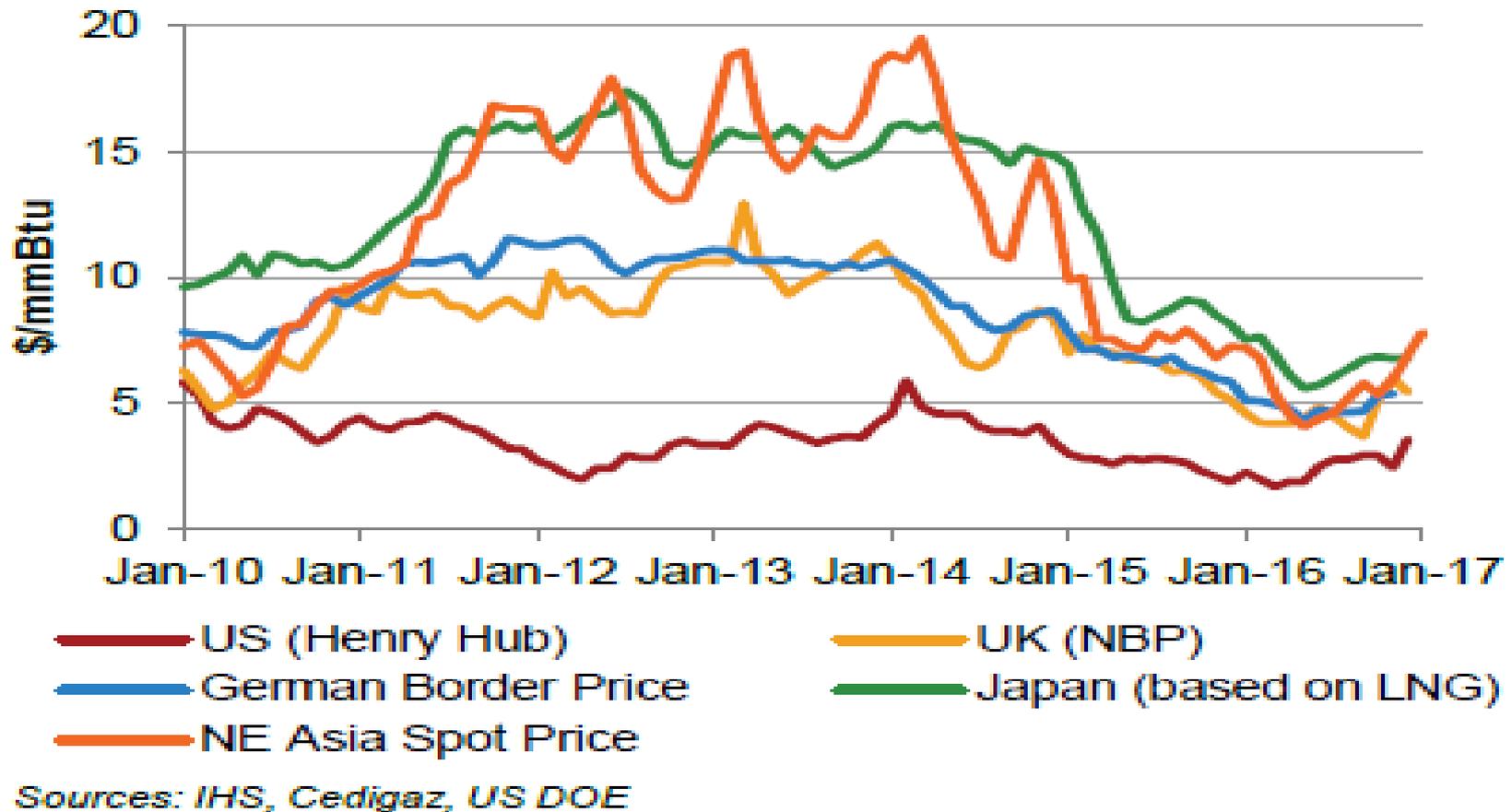


Source: IGU 2017

LNG GAME CHANGERS

- FLEXIBILITY OF SUPPLY (shipping):
 - portfolio traders
 - flexibility of destination
 - shorter terms
- EVOLUTION of PRICE FORMATION

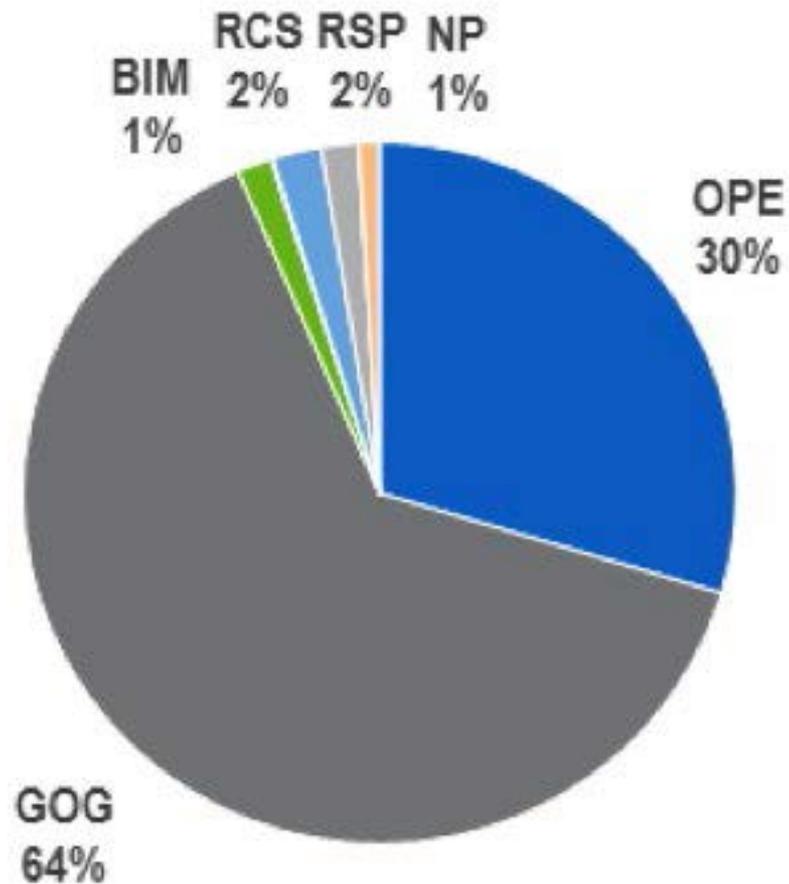
Convergence of average Regional Gas Prices



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)

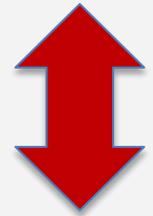
Europe Price Formation 2015



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*



II – AEEGSI: inside the black box

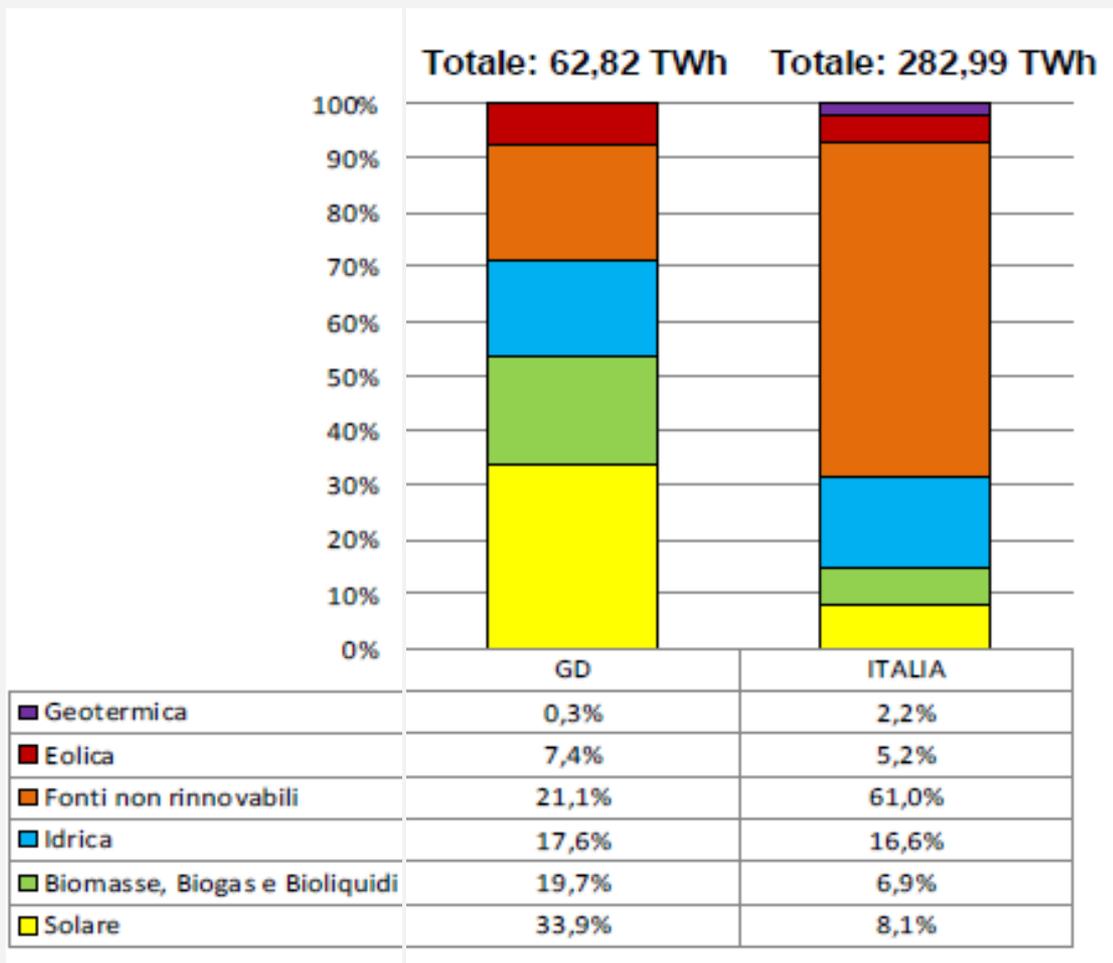
Overall context (1/2)

- **Main regulatory challenges in gas and electricity:**
 - system **flexibility**
 - better usage of **infrastructure** («smart power system»)
 - customer **empowerment**
 - **new players** in the market

Overall context (2/2)

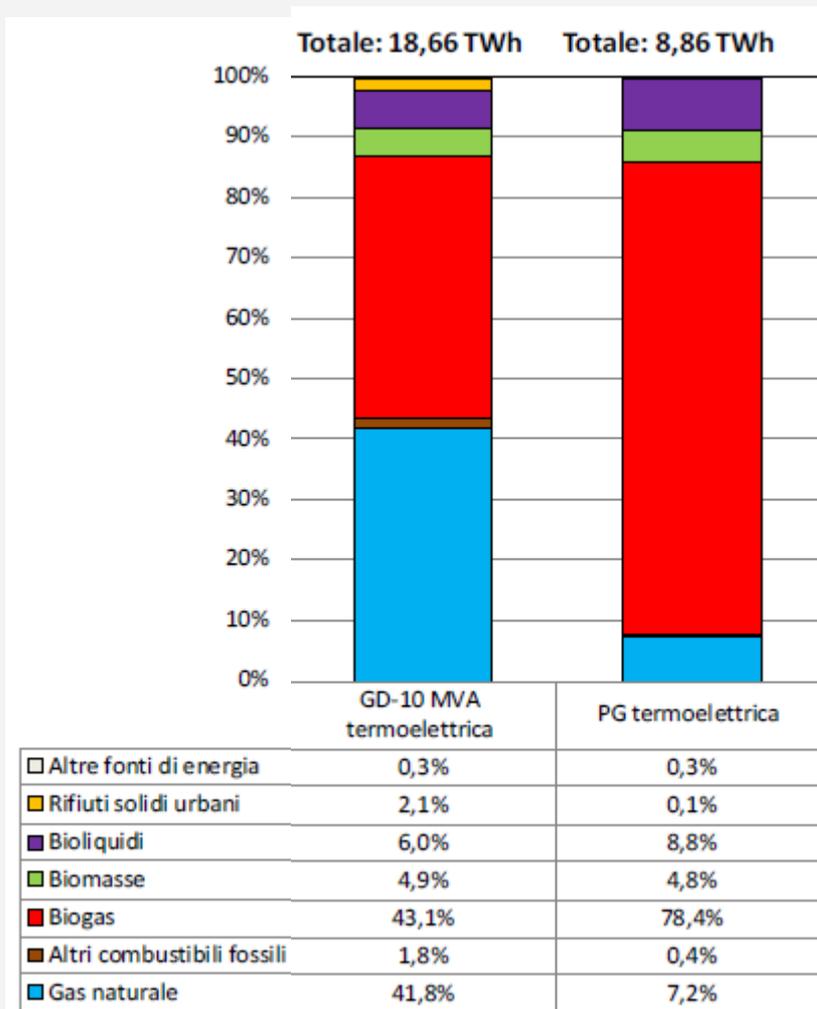
- **Italian regulatory authority mandate will expire early 2018**
 - need for stability and «bridge» with next mandate
 - need for completing reforms started up (e.g. household tariff)
- **EU network codes (NC) are completed or going to be completed**
 - need for continuity for implementing new network codes
- **EU «Clean energy package – Winter package» call for contributes**
 - AEEGSI plays a pivotal role in CEER

DG-Electricity production, sources (2015)



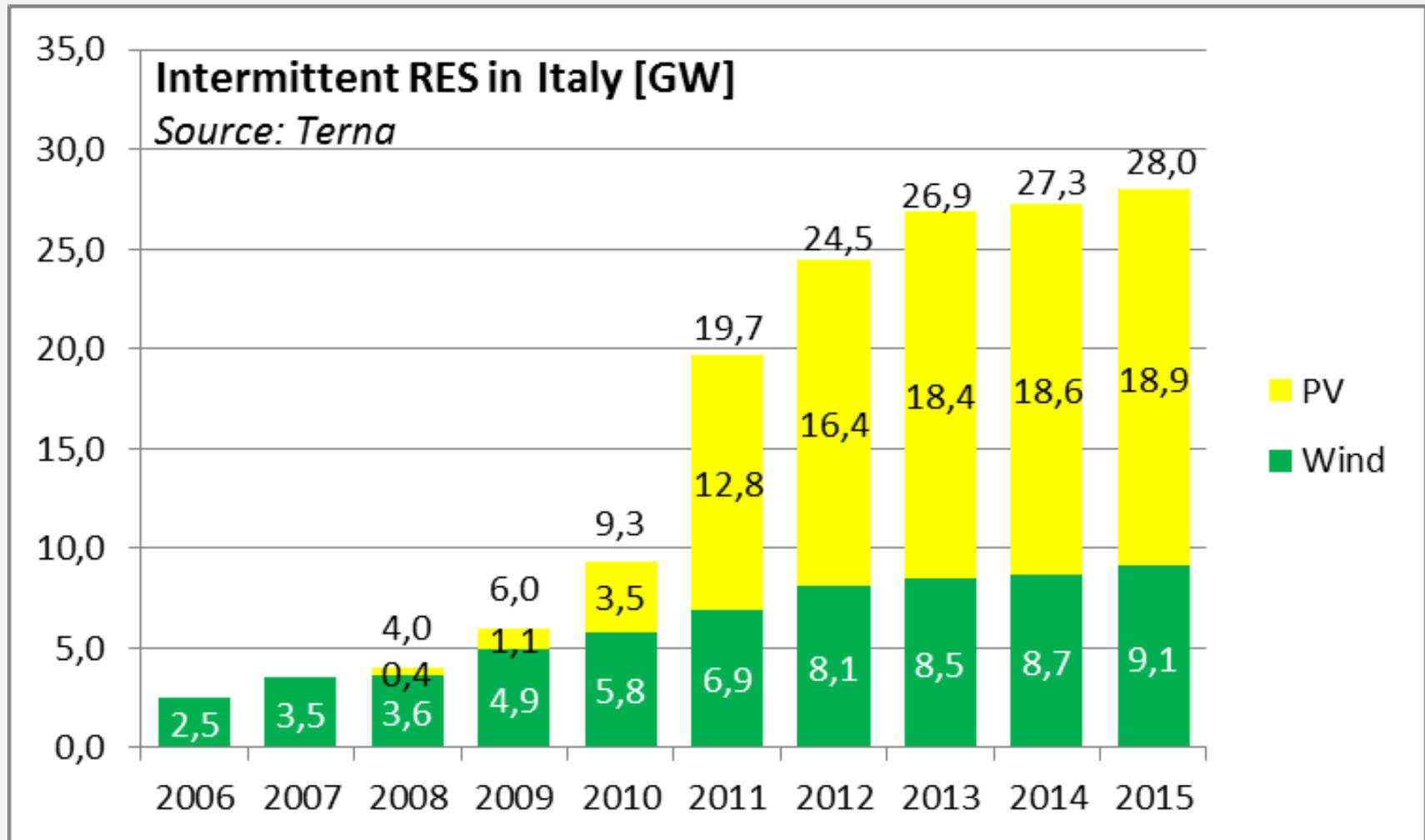
Source: AEEGSI
<http://www.autorita.energia.it/it/docs/17/278-17.htm>

DG-Electricity Production by thermal power plants, sources



Source: AEEGSI
<http://www.autorita.energia.it/it/docs/17/278-17.htm>

Italy strongly impacted by system transformation



Main aim of regulation

In particular, **aims of regulators** in the transition include:

- ✓ to ensure **neutrality** among different technologies (incl. storage)
- ✓ to favor the **decisions** taken by consumers and companies; grid companies are to be accountable to network users and market players
- ✓ to foster **innovation** in the system (esp. infrastructures)
- ✓ to guarantee **transparency, stability** and stakeholders **engagement**

AEEGSI's **strategy** and **accountability**

- **The Italian Regulator gives high importance to accountability of its strategic action**
 - 4-year **strategy** with a set of priorities approved in January 2015 after wide consultation and public hearings
 - articulated in strategic lines, objectives and priorities for all sectors: energy and water
 - Yearly reporting for **accountability** of progress (report 358/2017 recently published updated April 17)
 - Public hearings are held with stakeholders to report on activities. Next hearings on 11 and 12 July
 - «Osservatorio della Regolazione»: a new forum with all stakeholders launched in 2015

AEEGSI Regulatory strategic objectives – electricity and gas

OS.1 – More secure, efficient and flexible electricity market ■

OS.2 – More integrated electricity market ■

OS.3 – Review of gas tariff structure, of capacity allocation mechanisms and management of related services ■

OS.4 – Increase flexibility and efficiency of the gas balancing system ■

OS.5 – Europeization of cross-border infrastructure regulation ■

OS.6 – Implementation of a selective regulation for infrastructure investments ■

OS.7 – non-discriminatory access to consumption data and further evolution of metering systems ■

OS.8 – supply of energy services: roles and responsibilities of the different market players and operators involved ■

OS.9 – Elimination of tariff-related obstacles for energy efficiency and demand-side management ■

OS.10 – Increase competition on the retail market ■

OS.11 – Responsibilization of the DSO and supplier for bad payers and arrears ■

AEEGSI Regulatory strategic objectives – example timeline

- **Yearly report for accountability gives the status of strategic activities** and provides stakeholders with reasons of delay and rescheduling where needed
- **Example**

OS.7 Non-discriminatory access to consumption data and evolution of metering systems	2015		2016		2017		2018		Status and reasons for rescheduling
	H1	H2	H1	H2	H1	H2	H1	H2	
Access to consumption data [7.a]	Green	Green	Green	Green	Red	Red			Rescheduled for coordination with 7.b
Deployment gas smart metering gas e new functional requirements for 2nd generation of electricity smart metering systems [7.b]	Green	Green	Green	Green	Light Red	Light Red	Light Red		Completed on-time for electricity; in progress for gas
Fatturazione sulla base di consumi effettivi o delle autoletture [7.c]	Green	Green	Light Red						Completed with small delay

Source: Accountability Report 358/2017

	Original timeline in Strategic Plan
	Rescheduling in Accountability Rep.16
	Rescheduling in Accountability Rep.17

Key priorities for 2017 - electricity

Electricity

- OS.1)** Flexibility: dispatching reform
- OS.2)** Market coupling
- OS.6)** Selectivity in infrastructure investments
- OS.7)** Smart metering 2G
- OS.8)** New market players for energy services
- OS.9)** Household tariffs reform
- OS.10)** Customer empowerment

OS.1 Flexibility: dispatching reform and balancing

- Need for ensuring consistency with EU framework for dispatching and balancing (approved on 16 march 2017, implementation still pending)
- The ultimate objective is transition towards nodal prices reflecting the value of energy in real-time
- Allow for **broader participation and responsabilization of resources**, especially RES (so far excluded from qualified units for balancing)
- First voluntary participation of demand and RES through recently approved pilot project (decision 300/17)
- Introduced aggregation for demand (UVAC) and generation (UVAP) and in perspective for both (UVAM)

OS.2 - Market coupling

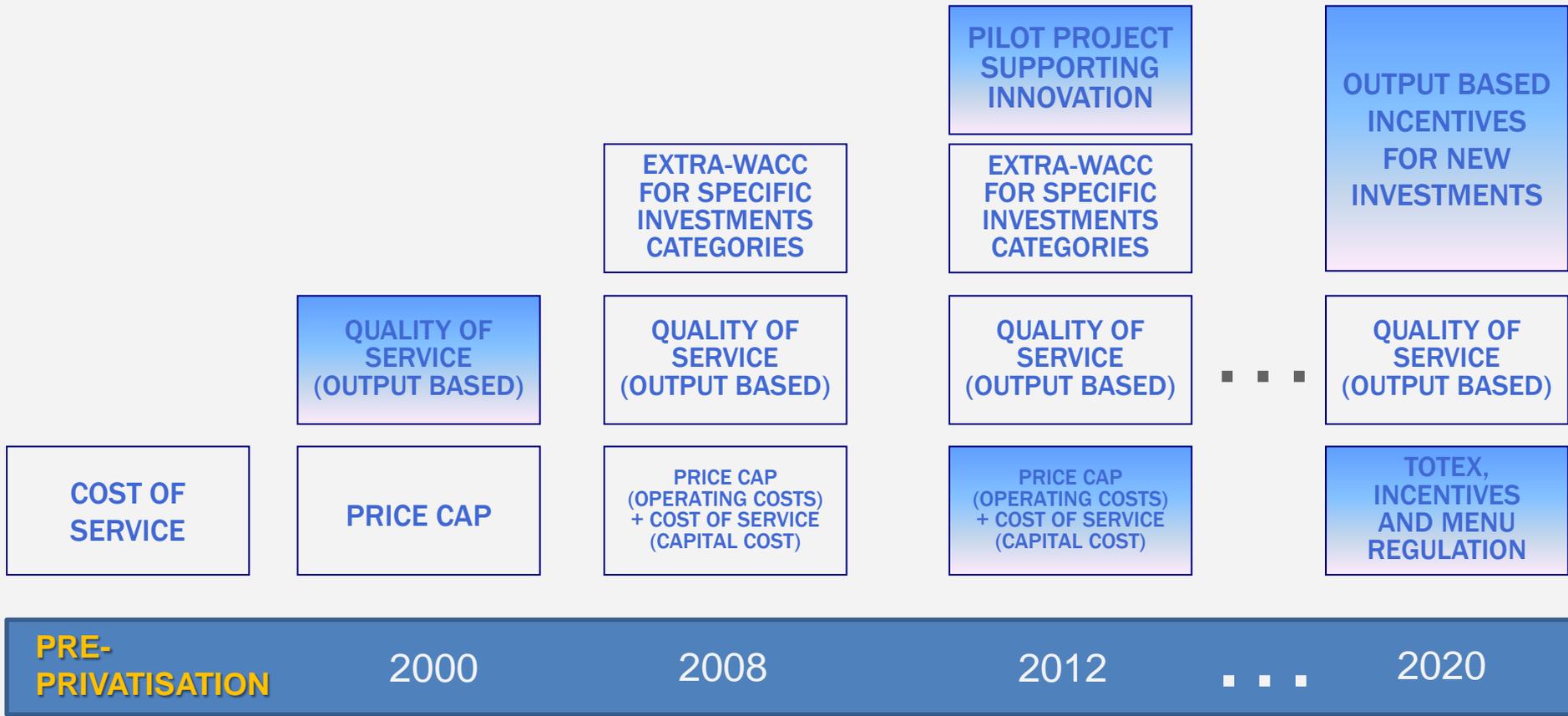
- February 2015: Italy completed market coupling of day-ahead markets on French, Austrian and Slovenian borders ahead of CACM regulation deadlines
- Need to introduce new payment deadlines, coherent with EU timing; transitional liquidity problem solved
- Still pending on Greek and Swiss borders (due to exogenous reasons)
- Pilot project for intraday market on Slovenian border

OS.6 Selectivity in infrastructure investments

- Moving from «input-based» incentives for TSO and DSO to «output-based» incentives, i.e. related to performance
- Moving from «building block» approach (CAPEX and OPEX treated separately) to «TOTEX» approach
- Completed for distribution
- Key priority for transmission
 - first consultation already done - started phase-out of extra-WACC
 - second consultation coming soon (summer 2017) for final decision
- See Focus #1

FOCUS #1: Infrastructure regulation

(1/4)



FOCUS #1: Infrastructure regulation

(2/4)

UNIFIED WACC REGULATION

- AEEGSI intended to unify the WACC parameters, except β and gearing, for **all the regulated activities of electricity and gas sectors**.
- Unified WACC parameters are set by AEEGSI for a period of time, called **WACC regulatory period** (*PWACC*).
- The length of the 'WACC regulatory period' is **six years**. The *PWACC* consists of **two sub-periods**, each one lasting three years.
- In the middle of the *PWACC* (2018) the following parameters will be reviewed (interim review):
 - risk-free rate;
 - Country Risk Premium;
 - inflation rate;
 - fiscal parameters.

FOCUS #1: Infrastructure regulation

(3/4)

	2016	2017	2018	2019	2020	2021	2022	2023	
PWACC			Interim review			Review			
Electricity transmission						Review			
Electricity distribution and metering						Review			
Storage			Review						
LNG			Review						
Gas transport			Review						
Gas distribution and metering				Review					

On the occasion of each specific tariff regulation revision, the asset beta (systematic risk of each activity) and gearing are reviewed.

FOCUS #1: Infrastructure regulation

(4/4)

- AEEGSI will apply the new paradigm, based on the TOTEX approach, output-based incentive schemes, in the **second sub-period** 2020–23. The focus for network operators will be towards the value of new investments in terms of outputs (e.g. quality) and services for network users.
- The length of the regulatory period was extended to eight years (2016–23) and divided into two four-years ‘sub-periods’,.
- The regulatory scheme for the first sub-period (2016–19) is similar to the previous regime, with a hybrid approach combining price-cap (applied to OPEX) and cost-of-service regulation (applied to CAPEX).

OS.7 Smart metering systems (electricity) 2nd generation

- Functional requirements established early 2016 taking into account performances of first generation meters
- Roll-out decision left to DSOs
 - DSOs must present their draft roll-out plan for 2G smart metering
 - DSOs must consult stakeholders on their draft roll-out plan
 - AEEGSI approves each plan, taking into account stakeholders observations
- New method of cost recovery that considers implementation obligations
- Implementation control and penalties in case of delay
- See Focus #2

FOCUS #2: Smart metering 2G

(1/4)

Italy has been the first Country with full roll-out of smart metering:

- More than **35 million customers with smart meter**
- More than **100 distribution companies** operating their own smart metering systems (even the smallest ones)
- More than **10 million operations per year** for remote customer management
- More than **15 years of experience** in smart metering

FOCUS #2: Smart metering 2G

(2/4)

OBJECTIVES	NEW FUNCTIONALITIES (decision 87/2016)
Increase efficiency of remote reading and remote control	2 channels for DSO to reach more customers (currently 96%)
Increase data granularity through remote reading	Consumption data recorded every 15 minutes collected every day (currently: every month, per band)
Validated measures available to supplier in 24 hrs	15' energy curves recorded daily validated by DSO and sent to supplier via SII
Deliver data to client in real time	1 channel for client with in-home device (instantaneous data not validated)
Allow meter to spontaneously forward messages	Spontaneous messages on events Useful for advanced contracts (e.g. pre-payment)

New processes and services thanks to the speedy availability of validated data to supplier (and other in supply chain) and instant not-validated data to client

FOCUS #2: Smart metering 2G

(3/4)



E-distribuzione roll-out plan has been approved (decision 222/2017) with some conditionalities on «chain 2» performance, customer protection and accounting separation from OF activities

Milioni
2G meters



FOCUS #2: Smart metering 2G

(4/4)

IQI matrix introduced for the first time: DSO are incentivised to save costs as they gain hearings from savings (difference between expected expenditure and actual expenditure; incentive to tell truth)

Tabella 2 – Matrice IQI – Valore degli incentivi ogni 100 euro di spesa prevista dall'Autorità

Rapporto previsione impresa/previsione dell'Autorità	0,75	0,8	0,85	0,9	0,95	1	1,05	0	1,15	1,2	1,25
Previsione di spesa ammissibile (con peso 75% per la previsione dell'Autorità e peso 25% per la previsione dell'impresa)	93,75	95	96,25	97,5	98,75	100	101,25	102,5	103,75	105	106,25
Incentivo all'efficienza da applicare alla differenza tra spesa ammissibile e spesa effettiva	26,3%	25,0%	23,8%	22,5%	21,3%	20,0%	18,8%	17,5%	16,3%	15,0%	13,8%
Incentivo a presentare dichiarazioni accurate (ogni 100 euro di spesa prevista dal regolatore)	0,86	0,75	0,61	0,44	0,23	0,00	-0,27	-0,56	-0,89	-1,25	-1,64
	Incentivi ogni 100 euro di spesa prevista dal regolatore										
Spesa effettiva	Spesa prevista dall'impresa, assunta pari a 100 la previsione di spesa del regolatore										
	75	80	85	90	95	100	105	110	115	120	125
75	5,78	5,75	5,66	5,50	5,28	5,00	4,66	4,25	3,78	3,25	2,66
80	4,47	4,50	4,47	4,38	4,22	4,00	3,72	3,38	2,97	2,50	1,97
85	3,16	3,25	3,28	3,25	3,16	3,00	2,78	2,50	2,16	1,75	1,28
90	1,84	2,00	2,09	2,13	2,09	2,00	1,84	1,63	1,34	1,00	0,59
95	0,53	0,75	0,91	1,00	1,03	1,00	0,91	0,75	0,53	0,25	- 0,09
100	- 0,78	- 0,50	- 0,28	- 0,13	- 0,03	-	- 0,03	- 0,13	- 0,28	- 0,50	- 0,78
105	- 2,09	- 1,75	- 1,47	- 1,25	- 1,09	- 1,00	- 0,97	- 1,00	- 1,09	- 1,25	- 1,47
110	- 3,41	- 3,00	- 2,66	- 2,38	- 2,16	- 2,00	- 1,91	- 1,88	- 1,91	- 2,00	- 2,16
115	- 4,72	- 4,25	- 3,84	- 3,50	- 3,22	- 3,00	- 2,84	- 2,75	- 2,72	- 2,75	- 2,84
120	- 6,03	- 5,50	- 5,03	- 4,63	- 4,28	- 4,00	- 3,78	- 3,63	- 3,53	- 3,50	- 3,53
125	- 7,34	- 6,75	- 6,22	- 5,75	- 5,34	- 5,00	- 4,72	- 4,50	- 4,34	- 4,25	- 4,22

OS.8 New market players for energy services

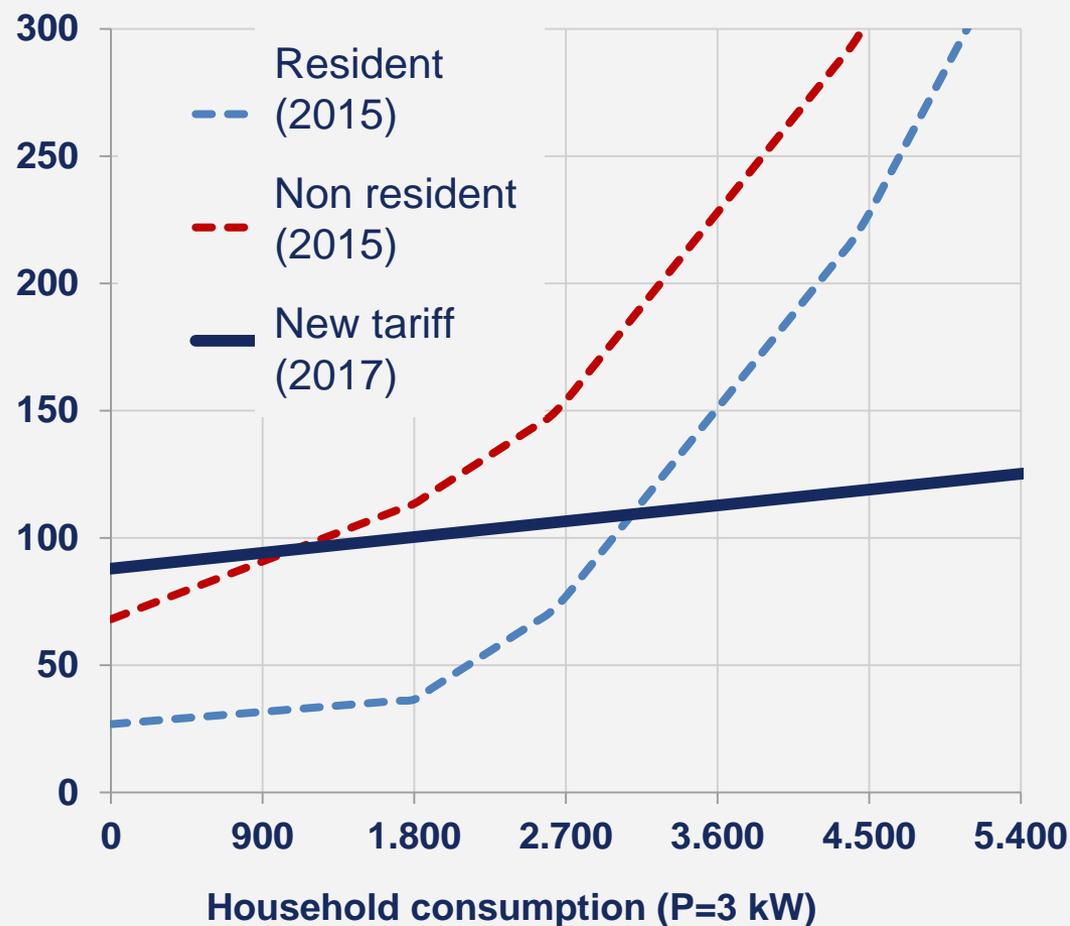
- Thanks to 10-year experience with «tradable white certificates», energy service companies are already active in Italy, for both household and business sector, especially for promoting:
 - photovoltaics, cogeneration and self-consumption
 - efficient electrotechnologies (f.i. heat pumps)
 - efficiency in industrial and service processes (f.i. heating/cooling)
- Some of the key priority will affect the development of new services for energy service companies, especially:
 - demand aggregation and demand response (see OS.1)*
 - customer awareness and home automation (see OS.7)

(*) In particular, decision 300/2017 introduces a new actor: balancing service provider (BSP) separated by balancing responsible party (BRP)

OS.9 Household tariffs reform

- In Italy a non-linear, progressive tariff for household was introduced in '70s for energy efficiency
- The progressive tariff proved to be a barrier for electro-efficient new technologies
- AEEGSI launched a reform for a new cost-reflective tariff for household
- New network tariff has been fully introduced from 1.1.17
- Transition to non-progressive tariffs will be completed by 1.1.2018 (system charges)

Yearly expenditure for network tariff [€]



OS.10 Customer empowerment

- In Italy, full retail liberalisation has been introduced in 2007, together with Universal Supply Regime (*Servizio di Maggiore Tutela*) for both household and small business customers
- Universal Supply Regime is intended to be transitional and proportionate to retail market maturity – i.e. empowered customer
- Italian Parliament is debating the conditions for terminating the Universal Supply Regime (possibly from July 2019)
- AEEGSI launched a consultation on the market conditions, proposing a standard offer that all retail suppliers shall have to offer («PLACET»):
 1. Structure defined by the regulator, price level set by each supplier
 2. Contractual conditions set by the regulator
 3. Two options: fixed-price or variable-price (in this case, price level variation has to be indexed to wholesale gas price)
 4. No joint offer (electricity+gas), no other services/bonus included

Key priorities for 2017 - gas

Gas

OS.3 Tariff structure for gas transport

OS.4 New EU gas balancing regime

OS.6 Gas distribution tenders

OS.10 Customer empowerment*

* Same proposal for electricity retail market

OS.3 Tariff structure for gas transport

- Started in 2016 a pilot to test capacity allocation for gas-based electricity generation units:
tariff charges for single day (exit points for electricity generation)
- Target: to enlarge the pilot from Oct-17:
tariff charges for month and quarter (exit points for elec.gen.)
- Perspective: to enlarge to all gas delivery points
- Update of transport charges: according to Regulation (UE) 406/2017 (gas tariff network code)

OS.4 New EU gas balancing regime

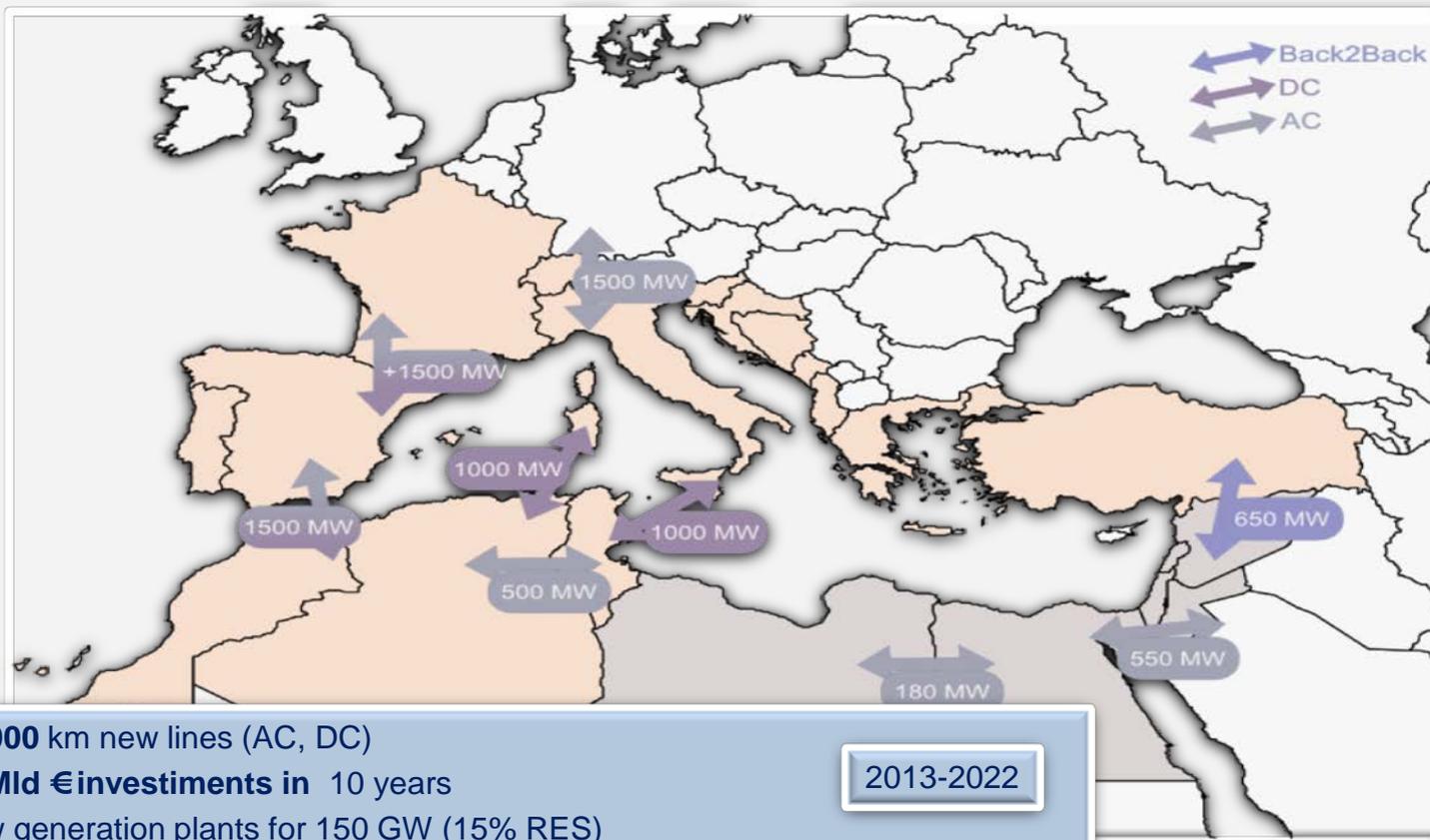
- In 2016 AEEGSI defined all aspects for gas balancing in compliance with Regulation (EU) 312/2014
- In particular, on one side gas balancing parties have the right incentives for self-balancing and on other side the gas system operator is subject to a regulatory framework for quality and timeliness of data provided to market players (decision 312/2016)
- The activity for gas balancing is positively concluded

OS.6 Gas distribution tenders

- An important season of new tender for gas distribution licensing (concession) has been launched in Italy
- So far the process is still lagging behind: as for today, only 9 districts (ATEM) for new concessions out of 172 have requested AEEGSI to check their cost-benefit assessment for new developments in gas distribution networks
- Transparency is ensured through publication on the regulator's website of a storyboard that is continuously updated («cruscotto gare gas»)

III – Italy, EU and Mediterranean

Energy in the Mediterranean – electricity infrastructures

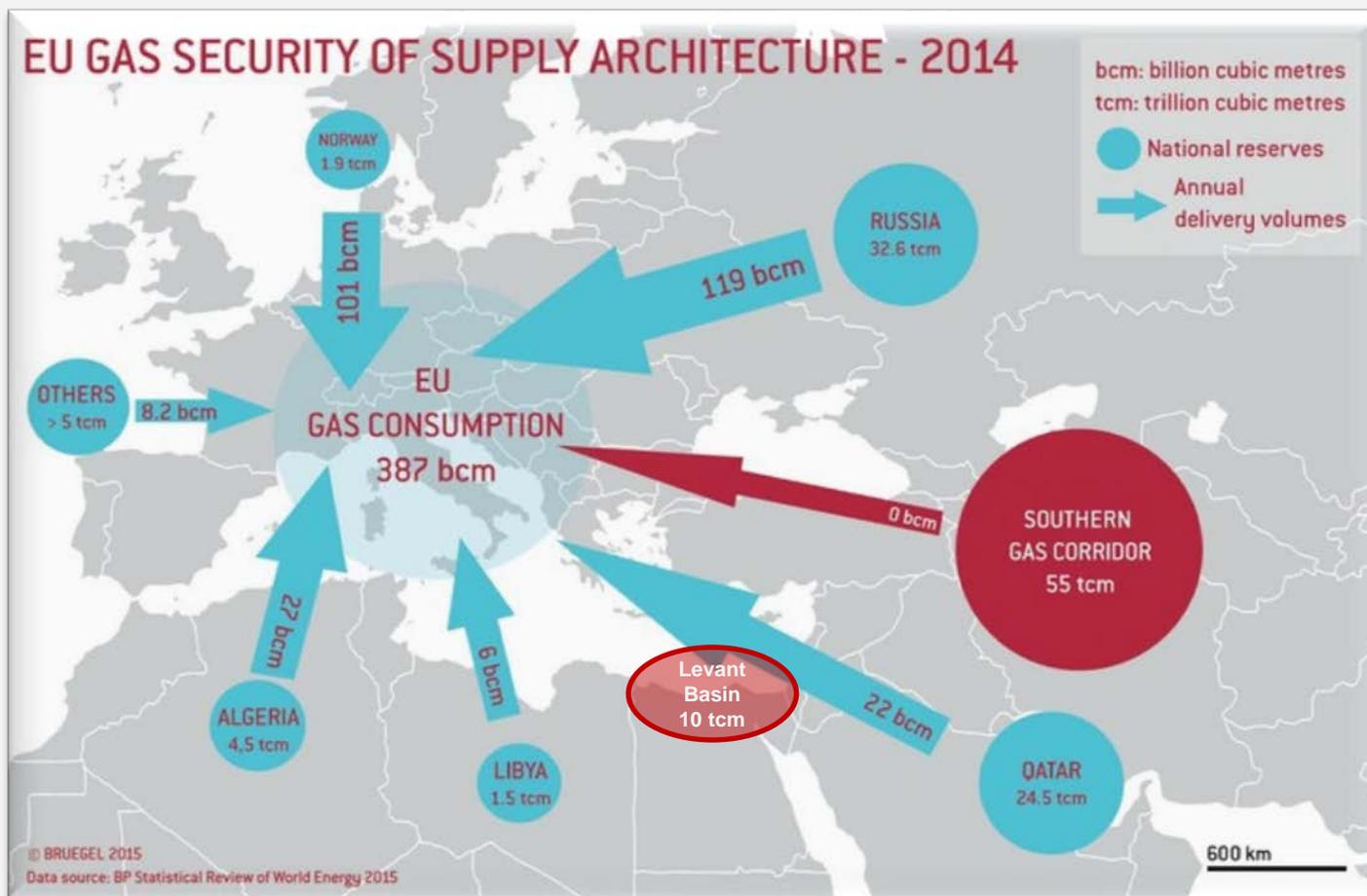


- **33,000 km** new lines (AC, DC)
- **30 Mld €** investments in 10 years
- New generation plants for 150 GW (15% RES)
- Investments incineration for **220-250 Mld €** in 10 years
- Priority to interconnections North-South and South-South and strengthening national grids

2013-2022

Source: MEDTSO

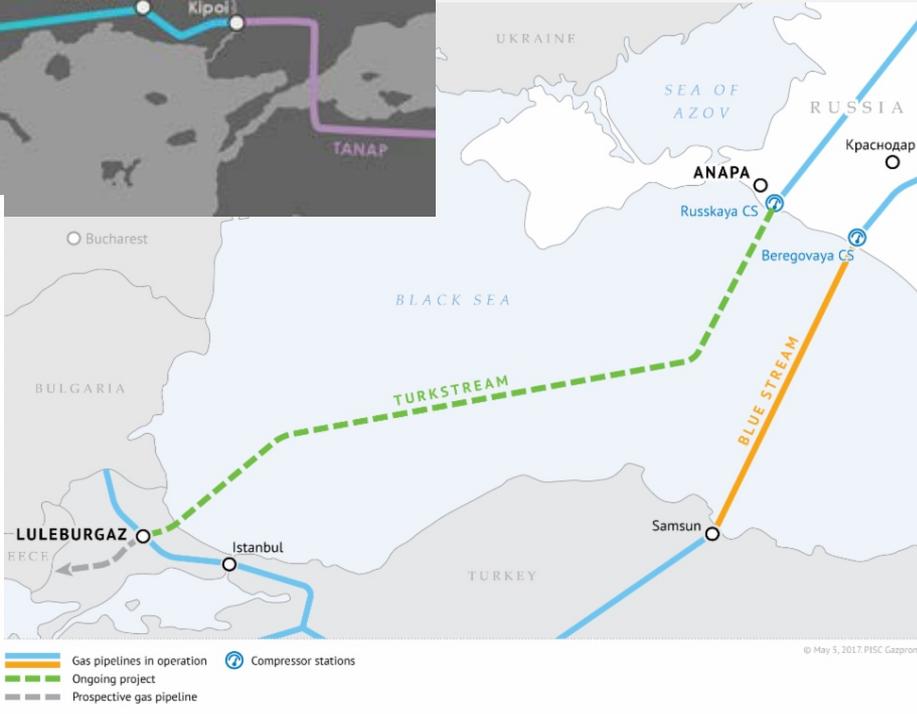
Energy in the Mediterranean – gas



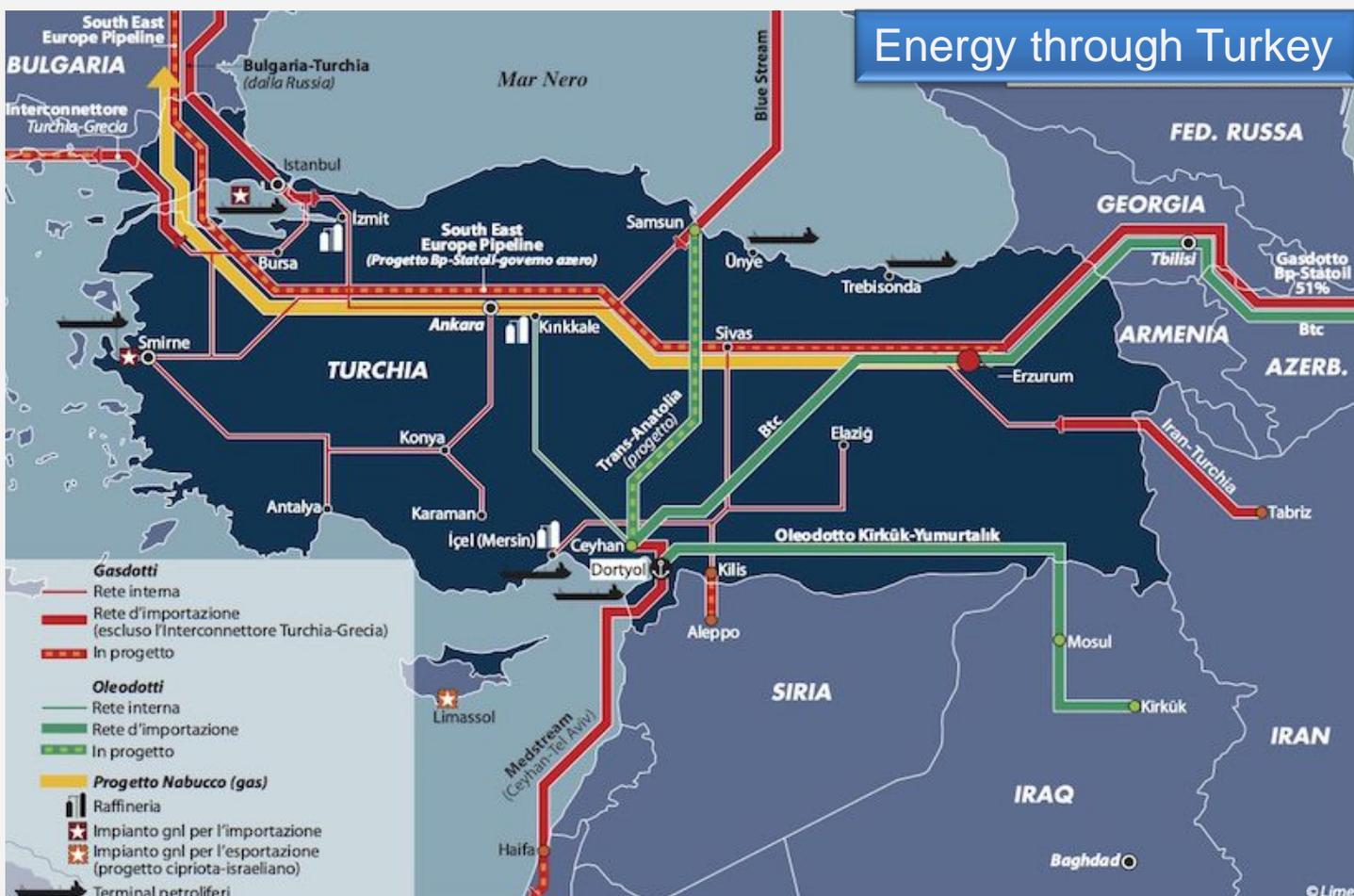
Southern corridor: main Projects



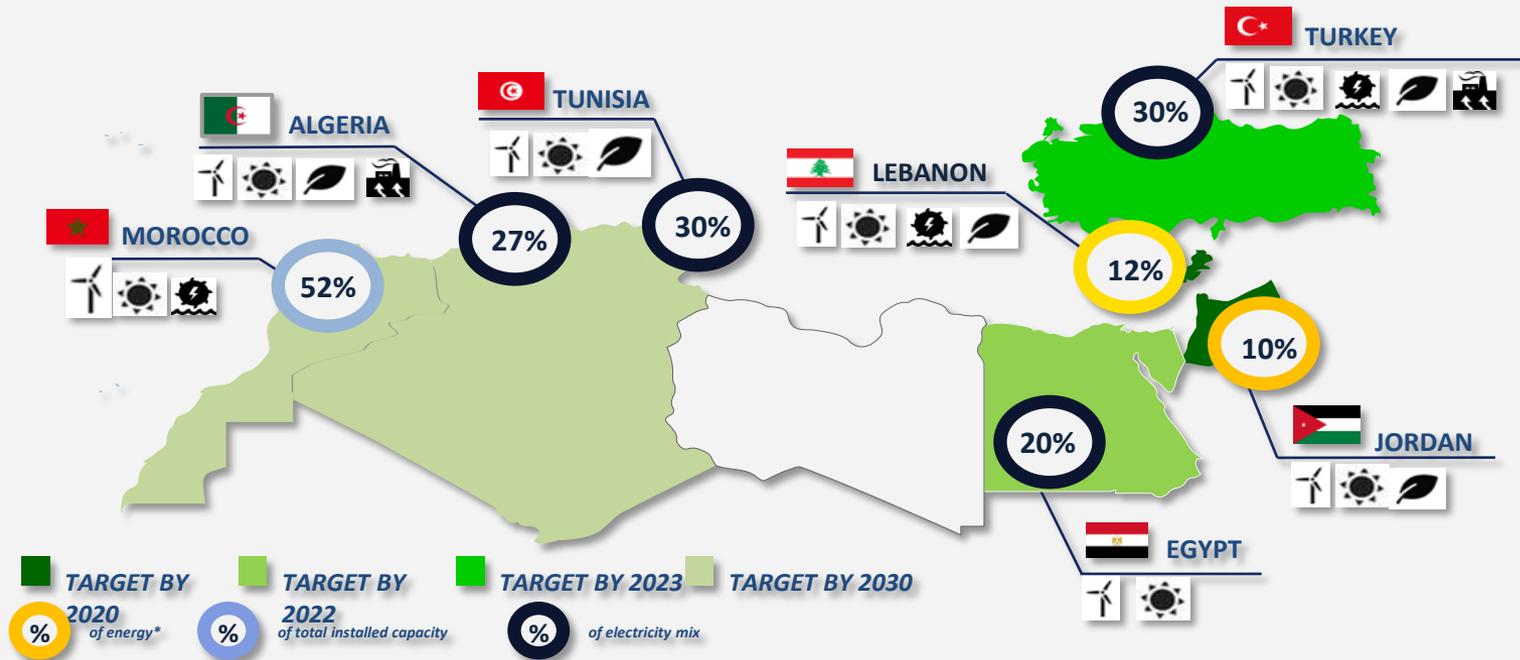
TURKISH STREAM



Energy in the Mediterranean – gas



Energy in the Mediterranean - RES



RENEWABLE ENERGY INVESTMENTS**

Cumulative public and private investments in RES power plants to reach country targets



Source: RES4MED

**Target as % of: total electricity and thermal energy (Lebanon); primary energy (Jordan), RES4MED elaboration. Investment figure for Tunisia (STEG data)