



E3G

The future of European gas demand

Implications for private and public investment

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3 messages

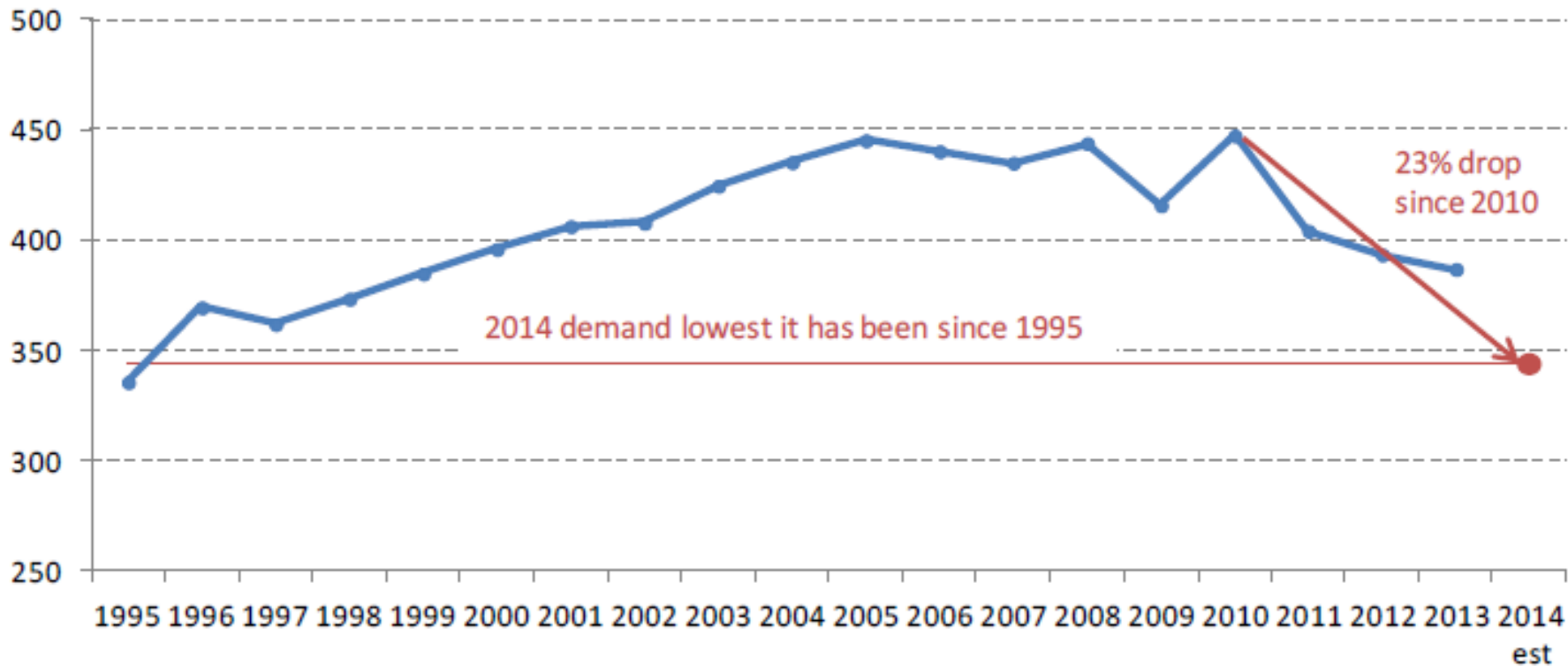
1. **EU gas demand is falling** in almost all Member States and across all sectors, and we failed to see it coming
2. Miscalculating gas demand means that gas infrastructure investment are at risk of becoming **stranded assets** and EU's energy security strategies being designed around the wrong cure
3. A **Gas Strategy for Europe** should help define role of gas in delivering EU's security and decarbonisation objectives, strengthen the evidence-base for investment and policy choices, and support most vulnerable countries

About E3G



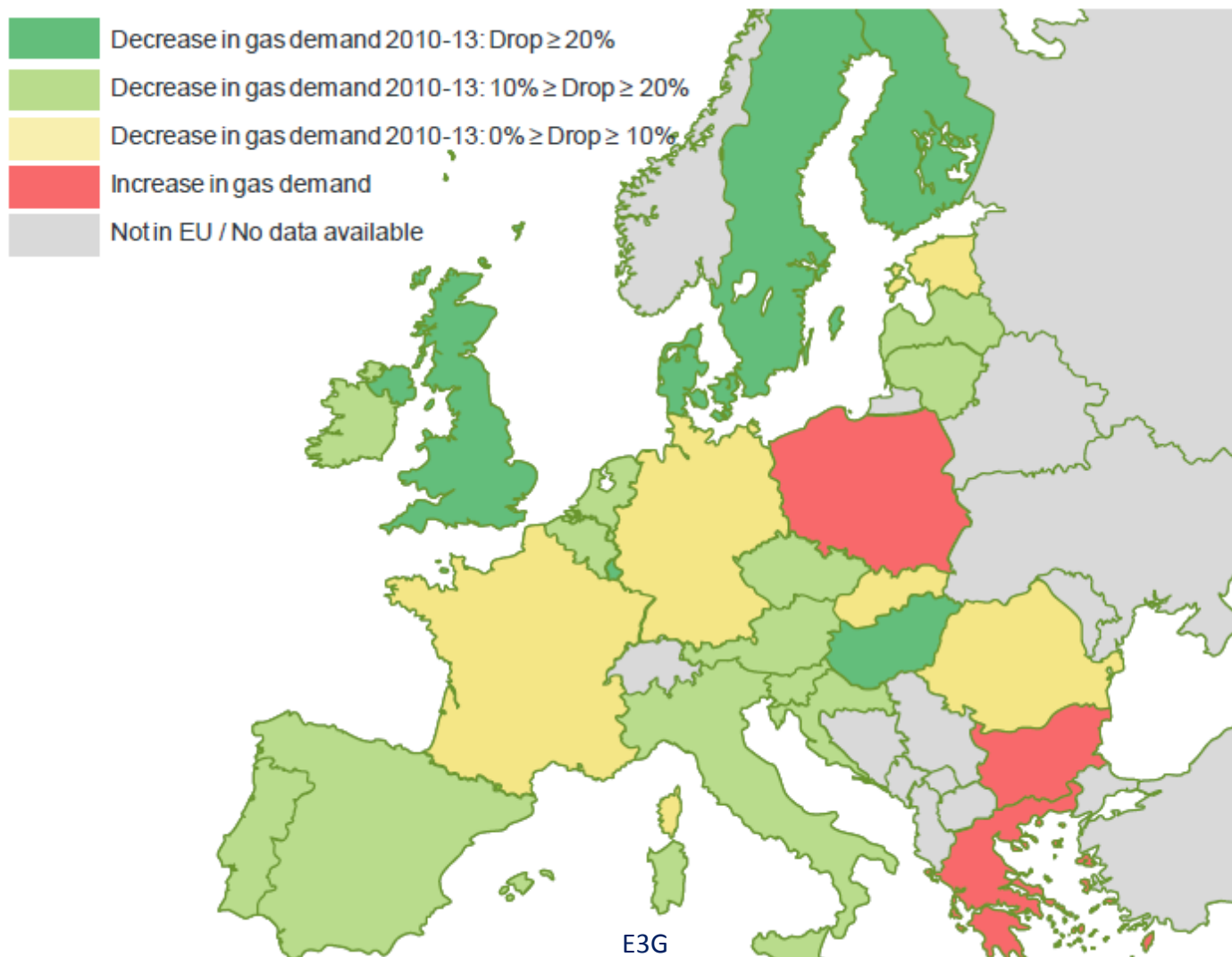
- E3G independent, non-profit organisation working to accelerate the transition to sustainable development
- Founded in 2004
- Offices in London, Brussels, Berlin and Washington DC
- Programmes in China, Columbia, Peru and South Africa
- Current Funding:
 - 80% grant funding from foundations and governments
 - 20% advisory work for foundations, governments, NGOs

EU gas demand is falling



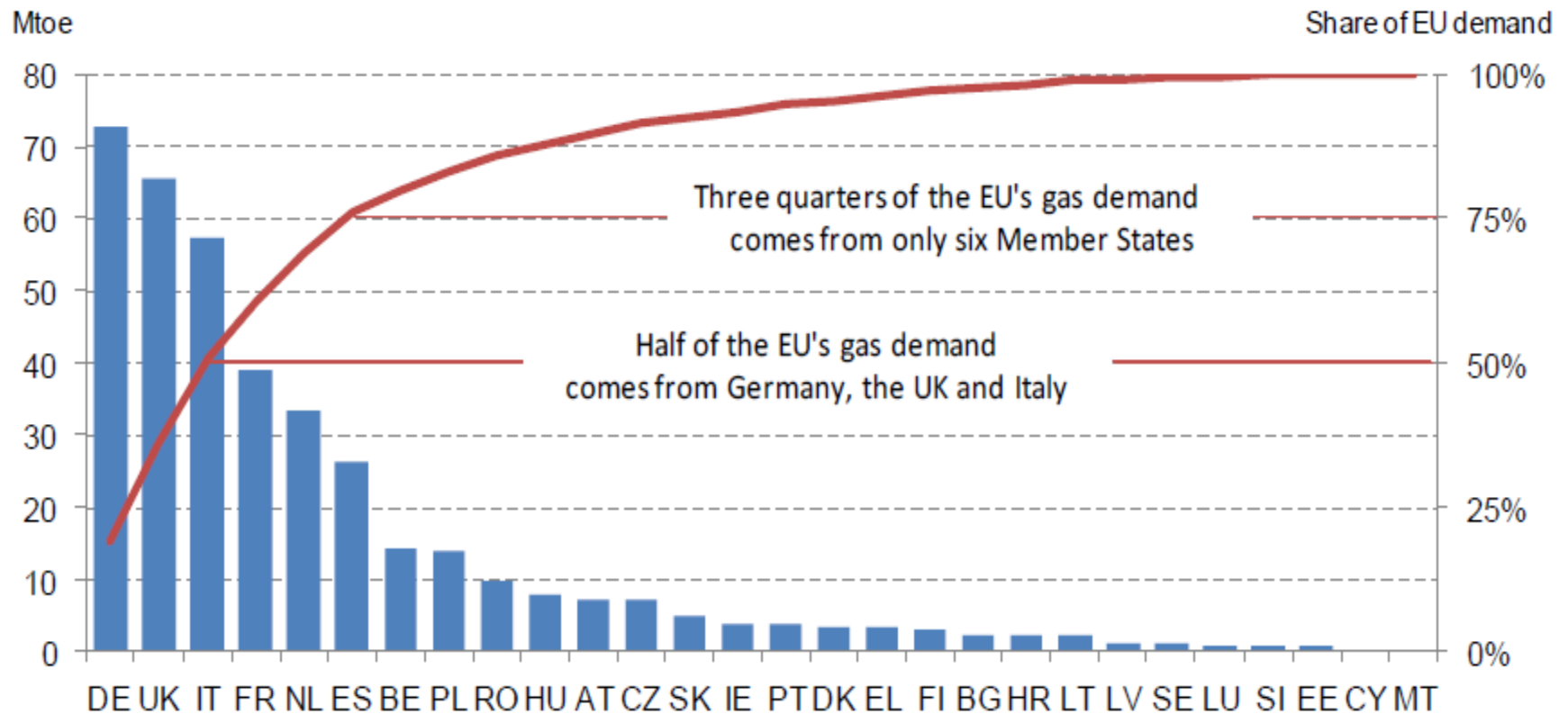
Gas demand in the EU28 (Mtoe) – Eurogas estimate on 2014 demand

Across all of Europe

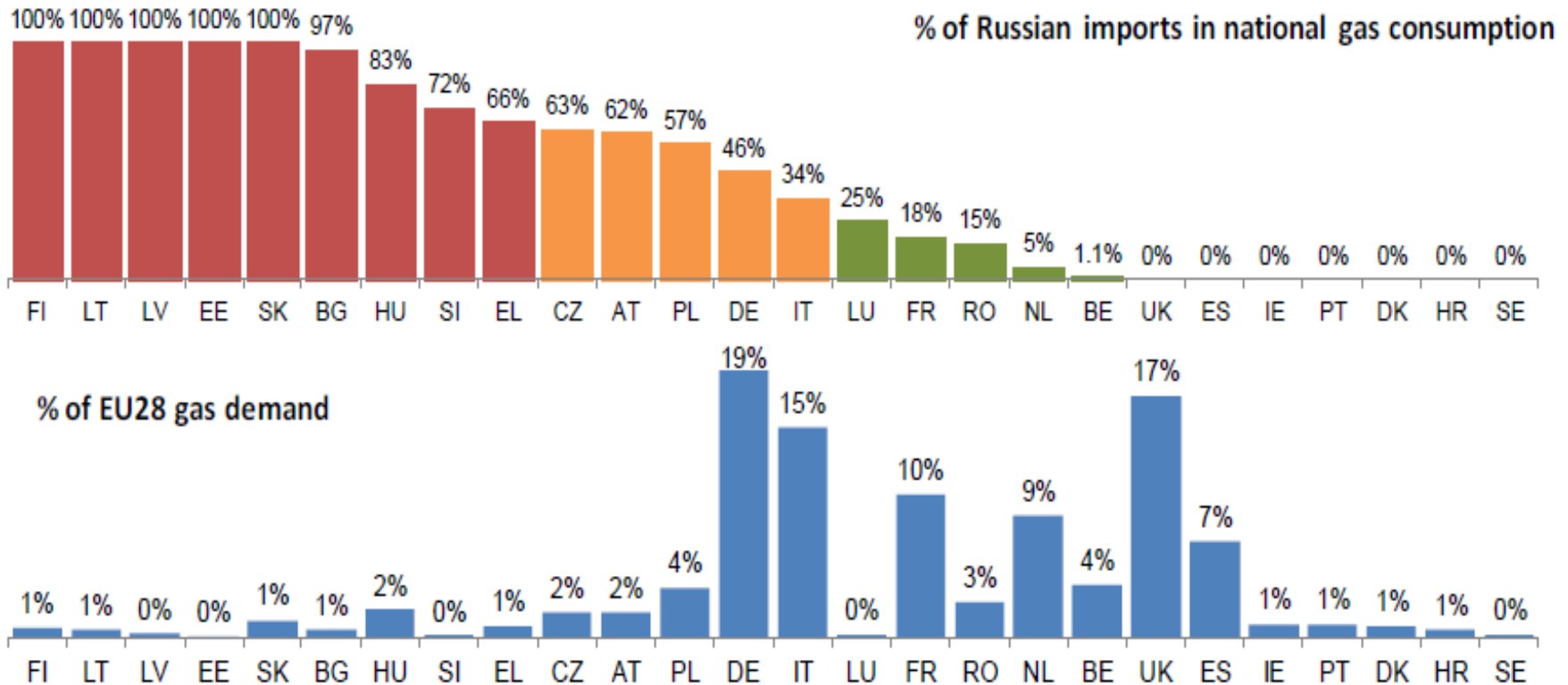


75% of demand comes from only six Western European countries

- Only 12% of gas demand comes from seven Central and Eastern European countries

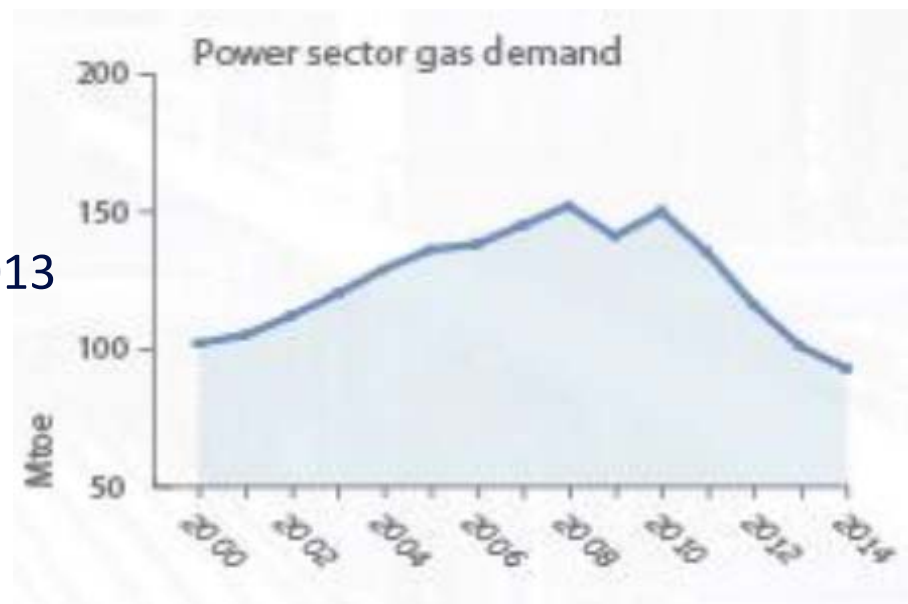


Member States most dependent on Russia represent 7% of total demand



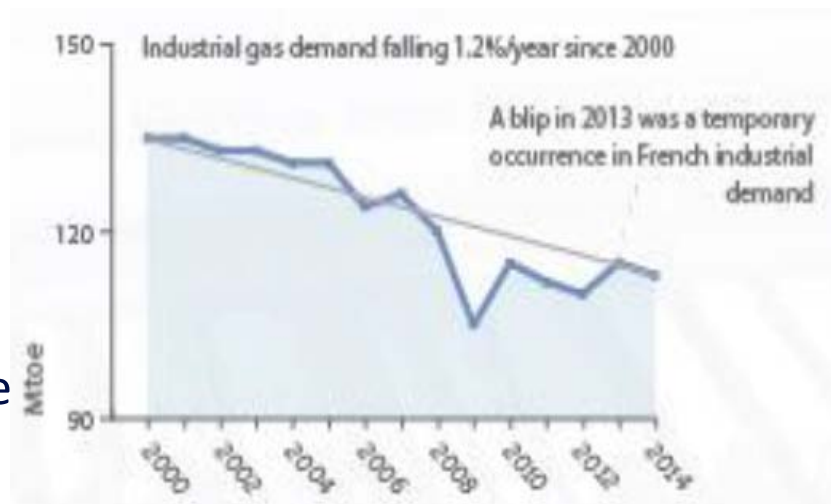
Gas demand is falling across all sectors

- **Power sector** gas demand accounted for 26% of all EU gas demand in 2013
- A 48% increase from 2000 to 2008 was fully offset between 2010 and 2013, bring down demand below 2000 levels in 2014
- The main drivers include:
 - falling electricity demand
-> -0.8%/yr on average during 2010-2013
 - increasing renewable generation
-> 67% from 249TWh in 2010 to 418TWh in 2013
 - and gas-to-coal switching in the merit order
-> gas-fired generation more expensive than coal generation almost every day in 2012 and 2013



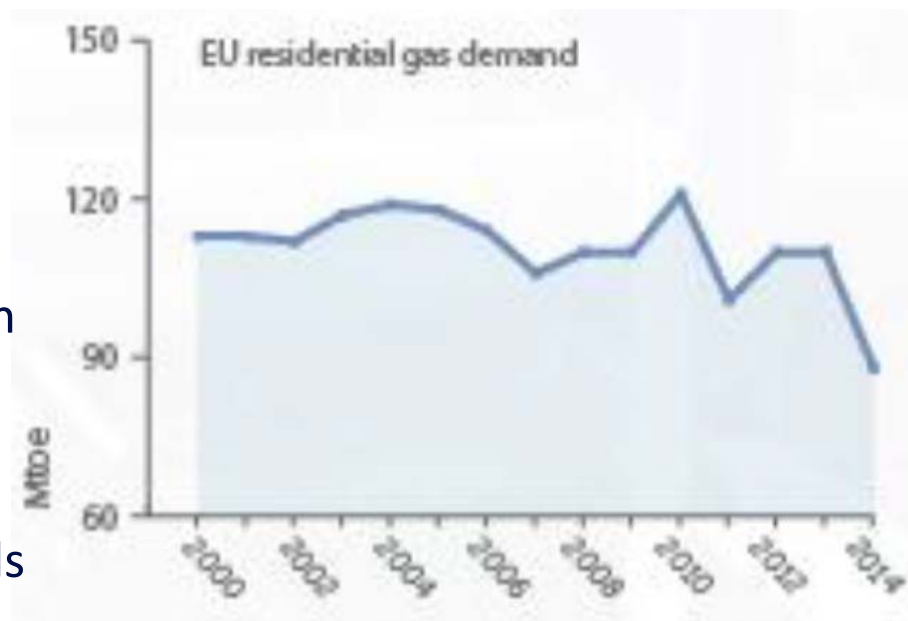
Gas demand is falling across all sectors

- **Industrial gas demand** accounted for 30% of all EU gas demand in 2013
- Industrial gas demand peaked in 2000, and fell by 15% from 2000 to 2013 while industrial production rose by of 2% throughout that period
- The main drivers include:
 - Energy efficiency
 - > gas prices which have increased by 76% from 2005 to 2013, technological advancements and roll-out of best practice
 - Production shifted to less gas-intensive sectors/ fell substantially in high gas-consuming sub-sectors
 - > oil and gas extraction (-58%), iron and steel (-8%), and paper (-9%)



Gas demand is falling across all sectors

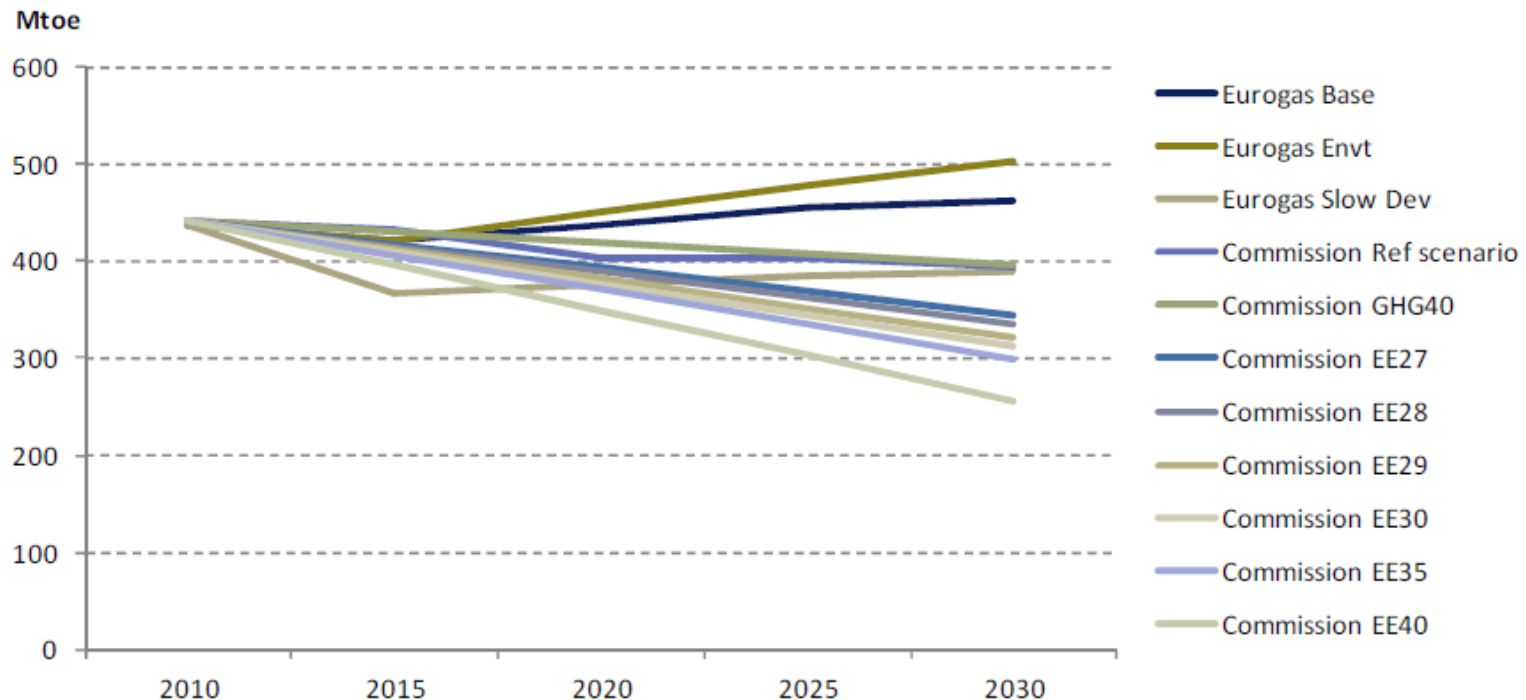
- **Residential gas demand** accounted for 29% of all EU gas demand in 2013
- Peaked in 2010 and fell by 9% from 2010 to 2013, despite 2013 being colder than normal
- The main drivers include:
 - Energy efficiency improvements
-> Especially in Germany and UK which alone account for 45% of residential demand
 - Gas prices for medium-size households increased by 62% from 2005 to 2013



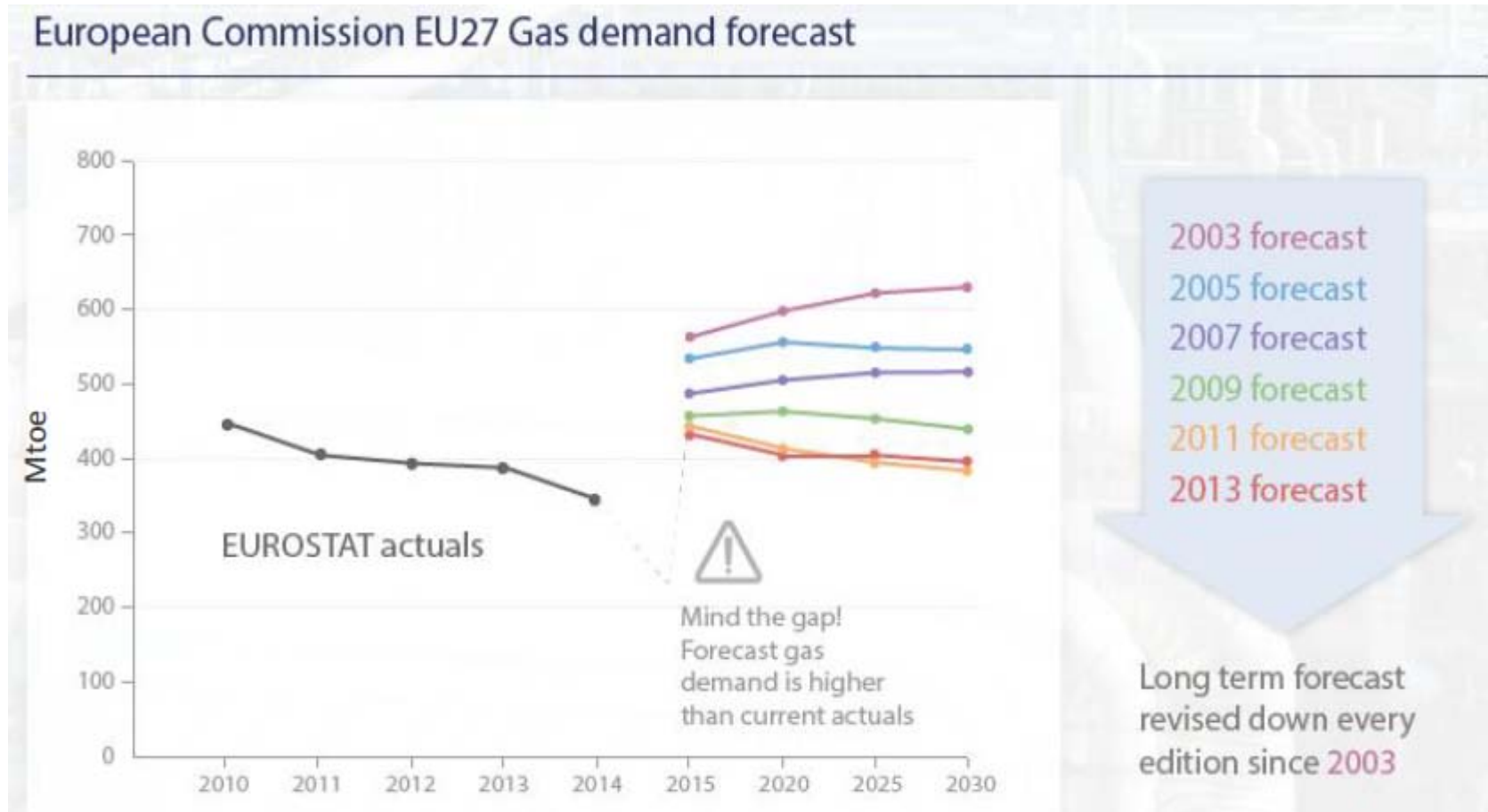


So what will the future look like?

- Our evidence-based analysis shows that **majority of Europe's gas demand occurs in countries with strong energy efficiency and renewables deployment programmes in place**, which are likely to further decrease demand in future
- Major uncertainty remains on future demand levels. Projections over the next 20 years range from a 38% increase to a 25% decline



Europe has a history of systematically overestimating gas demand



- The Commission is still forecasting 2015 gas demand to be more than 20% higher than the actual 2014 levels

Why do scenarios and models matter?



- Businesses, Governments and investors all need to plan for the future
- To the extent that investors and policy-makers believe erroneous forecasts, they can make wildly incorrect investment and policy choices
- Miscalculating future gas demand in the EU means that gas infrastructure investment are at risk of becoming stranded assets and EU's energy security strategies will be designed around the wrong cure

Risk of stranded assets and emissions “lock-in”

- Business planning based on potential misread of future demand may be risky
- If demand falls short of expectations, it will result in underutilisation of gas infrastructure (for example, utilization factor of existing LNG import facilities is only 24%), rising oversupply and weakening prices, affecting future revenues
- Public money, including the European Fund for Strategic Investment and the Connecting Europe Facility and, is at risk of being diverted to uneconomic projects as a result of unrealistic demand projections
- Overinvestment in gas infrastructure can also create ‘lock in’ to levels of GHGs that are in conflict with EU decarbonisation goals

Existing energy security strategies not fit for purpose



- Europe's approach to energy security will have to account for the rapidly changing landscape of geopolitical risks facing a number of suppliers and transit countries

Ukraine crisis: Putin will cut gas to Europe unless Russia is paid by the end of the week

Gazprom denies rumors of cancellation of Turkish Stream

Economy September 8, 2015

European Parliament slams Azerbaijan over human rights violations

Pirates Attack LNG Tanker

Explosion Hits Shah Deniz Gas Pipeline in Northeast Turkey

by Reuters | Tuesday, August 04, 2015

Secret files: British government courting Arab tyrants, fossil fuel interests

Official documents show how oil and business interests trump democracy

ALGERIA

Environmental movement blocks fracking in Algeria's remote south

Protesters fear shale industry will destroy water resources in Sahara town

MARCH 9, 2015 by: **BORZOU DARAGAH** in Cairo

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Comments (13)

A Gas Strategy for Europe



Developed by the EU Commission, it should define the role of gas in supporting Europe's energy policy objectives of security and decarbonisation

- EU consumers currently bear most of the financial risk related to overbuilding or not building enough gas infrastructure → Need a fair balance between increased flexibility of supply and avoiding wasting money
- Implement “energy efficiency first” principle to minimise gas use, manage future gas need, and maximise existing infrastructure
- A foreign energy policy strategy that delivers not only access to new fuels but also stability in energy producing countries

Strengthening Europe's evidence base



Complex decisions about the future must be supported by reliable, up to date and independent analysis

- The Commission should impose a reality check on its gas demand scenarios and ensure that the selection of projects is consistent with EU long term decarbonisation objectives
- Inform the impact on gas volume and infrastructure needs of other elements of Europe's energy system: renewable, efficiency, electrification of heat and transport, etc
- Develop a CBA for infrastructure projects taking into account their impact on a region's flexibility of gas supply options and their economic viability across their life time and under different demand scenarios
- Develop metrics to evaluate the risk to consumers and the risks to investors of specific projects

Supporting most vulnerable countries



There is no EU-scale security of supply crisis, only local concerns and a lack of solidarity and cooperation among Member States

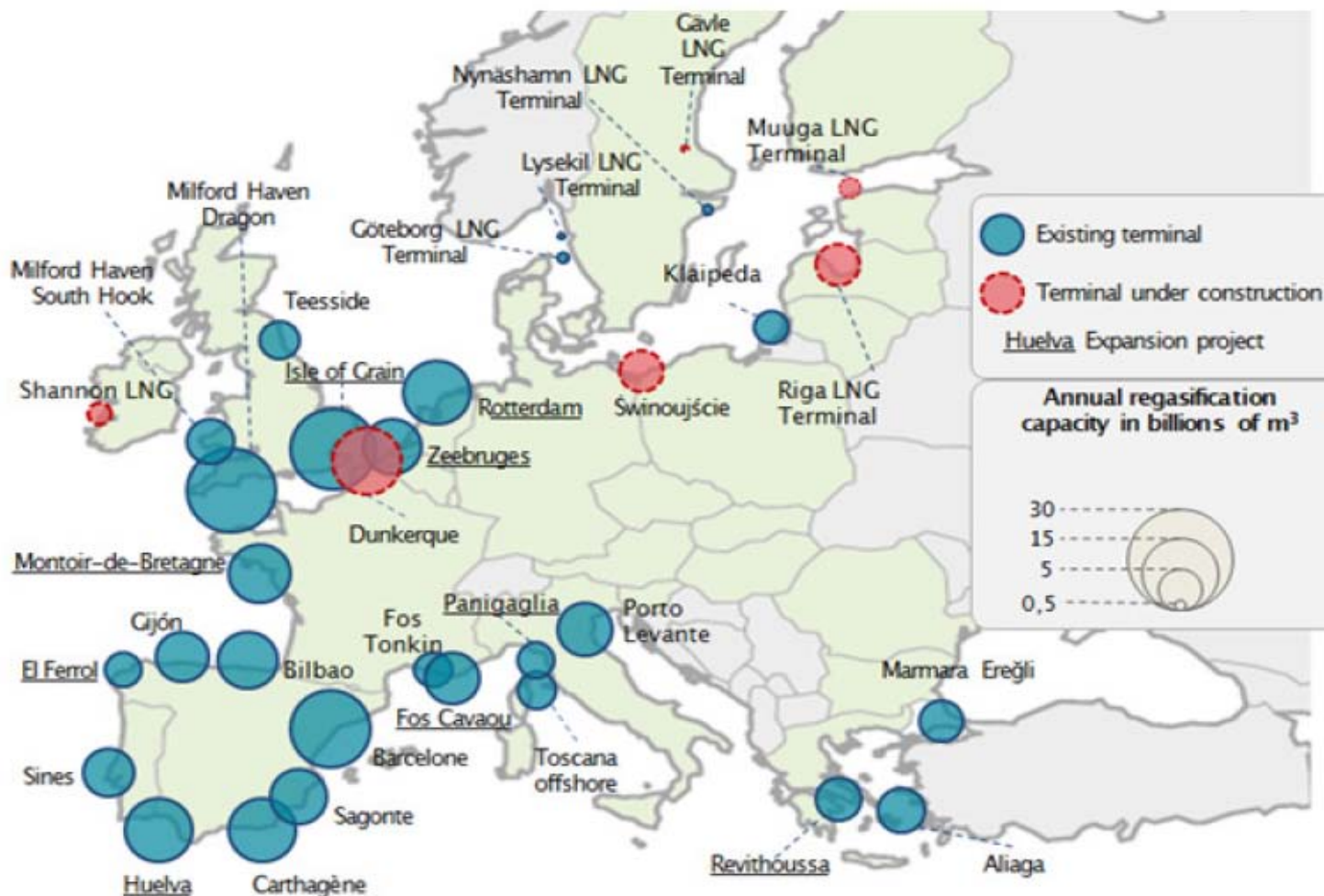
- Broker regional cooperation agreements between relevant Governments, TSOs, and regulators
- Develop credible solidarity mechanisms supporting countries in difficult times
- Identify projects of critical importance for these countries' flexibility of supply
- Unlock access to finance for such projects on condition of delivering demand reduction and increasing regional cooperation

Role for LNG and gas storage in EU strategy?



- Liquefied Natural Gas quick facts:
 - Alternative to supply in gaseous form through pipelines. LNG seen as option for greater diversification – especially as response to vulnerability to a prolonged interruption of Russian supplies.
 - Existing capacity & imports
 - 197bcm/a vs 490bcm/a of pipeline capacity (i.e. 29% of total, in theory enough to cover gas import projections to 2040).
 - Utilisation factor of only 24% - 94% existing import capacity in West (Spain, Portugal, France and UK), infrastructure bottlenecks in N/S and W/E directions, several CEE countries have no access at all to this source of supply.
 - Volume: ~7% of current European imports.
 - New capacity: LNG terminals long-lived and capital heavy
- European Commission to develop a ‘comprehensive strategy for LNG’ to be released early Jan 2016. Consultation open until 30 September.

Existing and planned LNG terminals



Thank you!



E3G

More information on www.e3g.org

or drop me an email at

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