Gas as a "bridge" fuel: Have we crossed the bridge?

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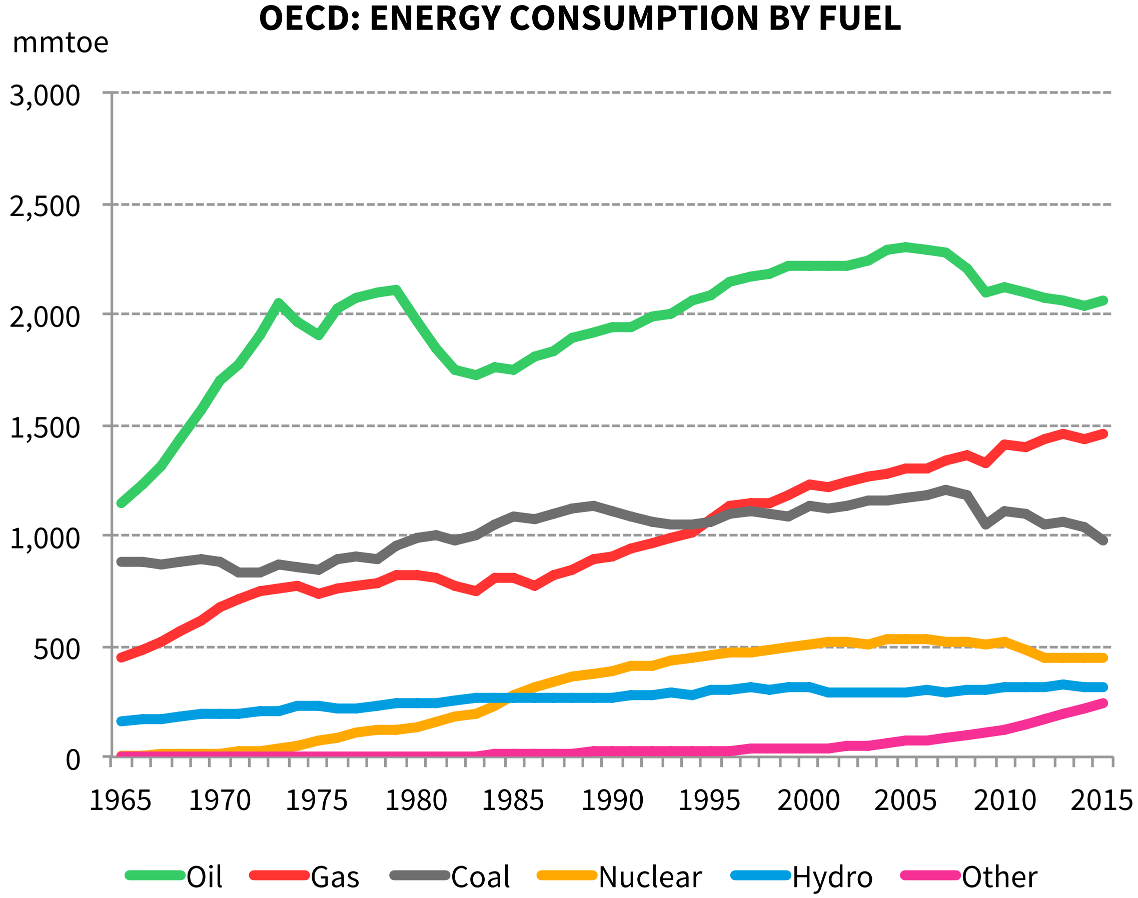
THE GEOGRAPHY OF ENERGY DEMAND

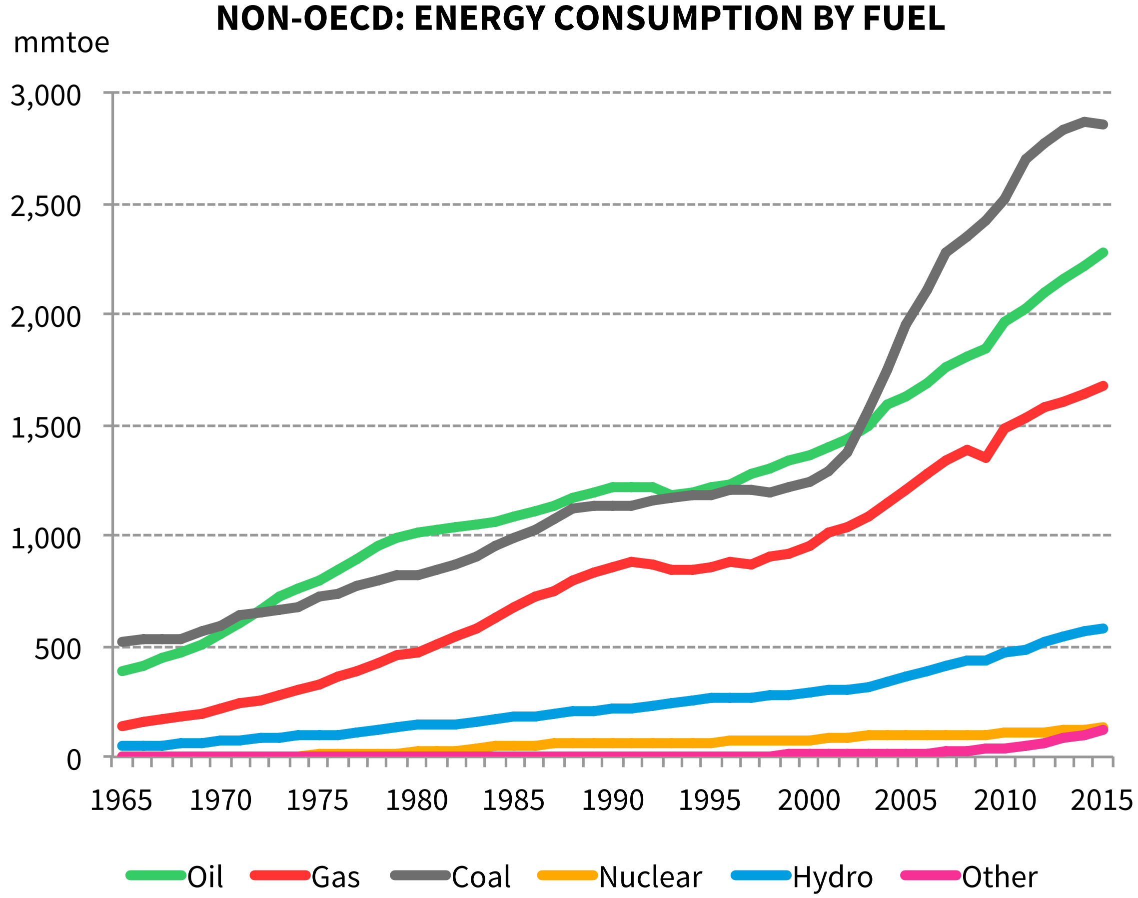
In OECD, oil consumption peaked in 2005, nuclear in 2006, coal in 2007.

Gas and renewables still growing—but not everywhere in the OECD.

In non-OECD, all fuels still growing strongly.

But coal surge post 2001 (China's WTO-accession) has slowed down, and coal use fell in 2015.





Source: BP Statistical Review of World Energy 2015 (June 2016)

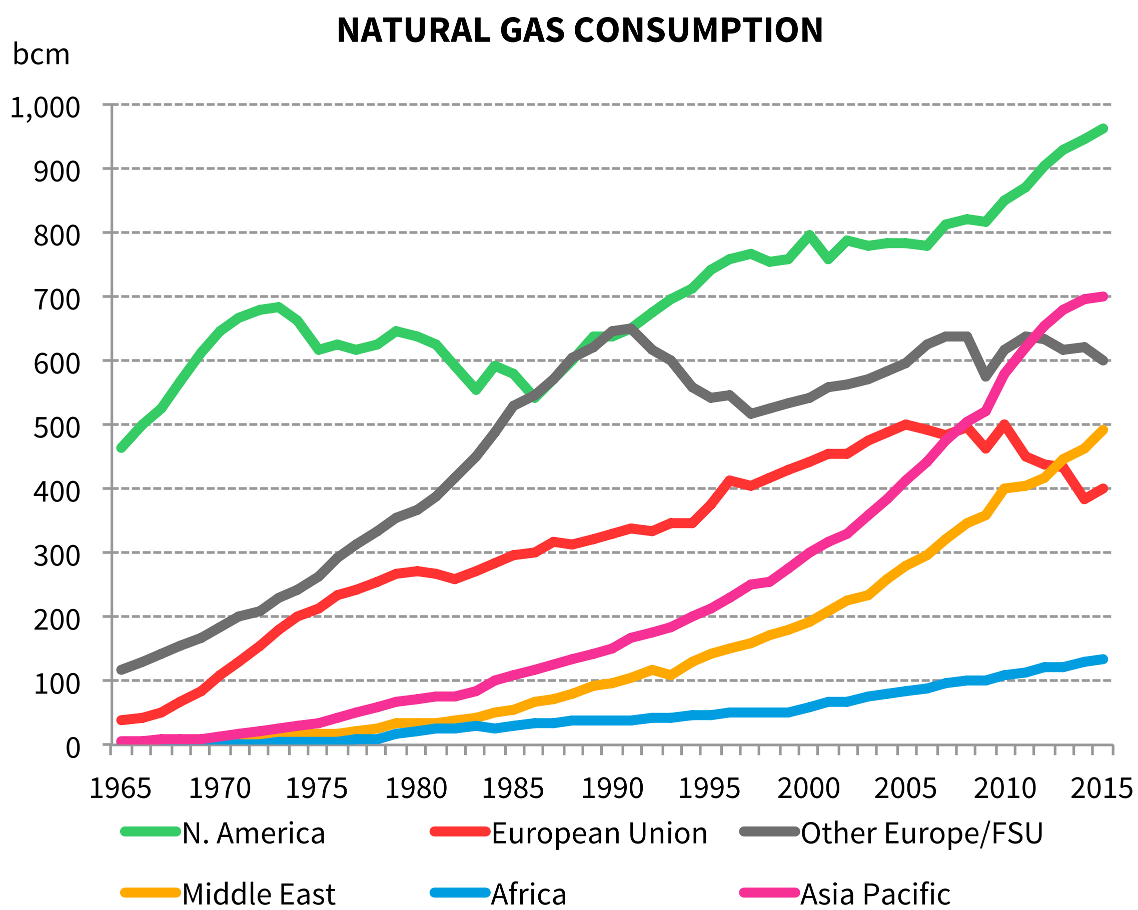
THE GEOGRAPHY OF GAS DEMAND

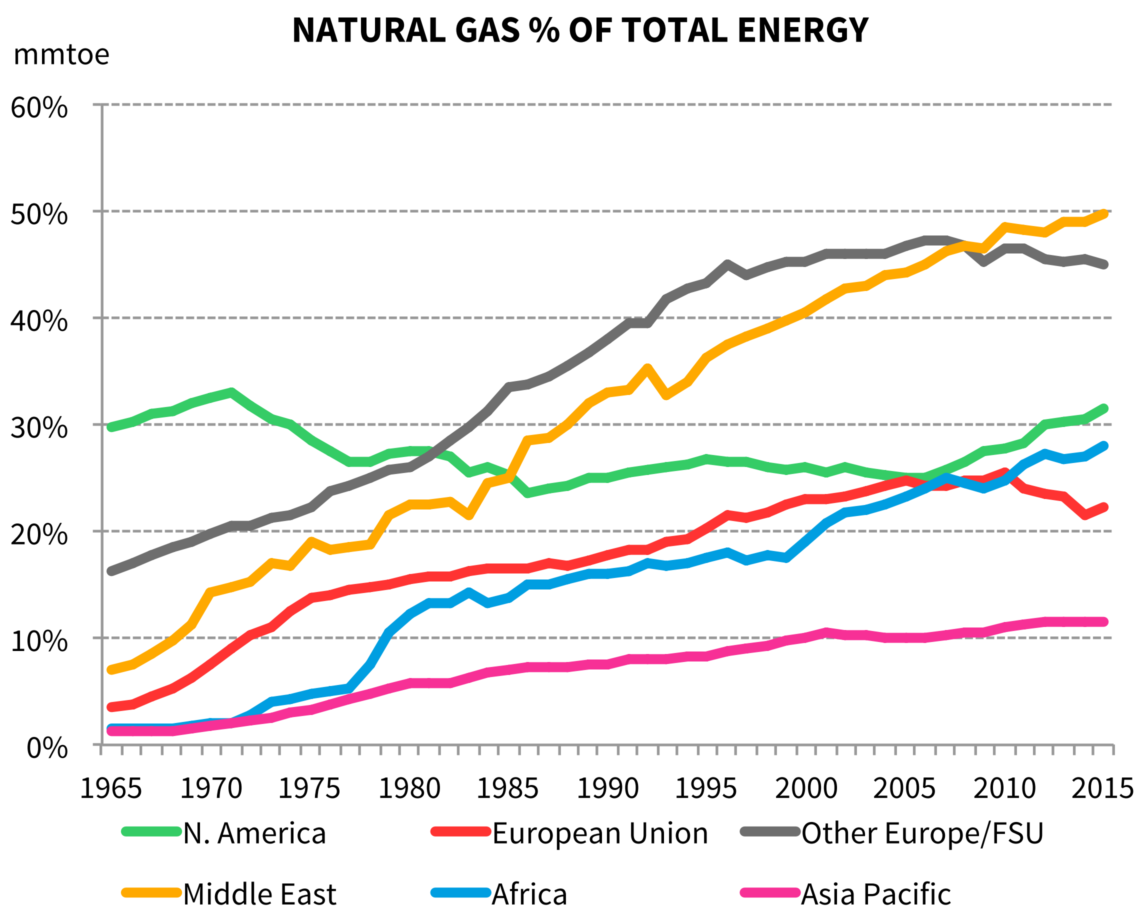
North America, Asia Pacific and Middle East main gas demand drivers in recent years.

Gas demand has declined in Europe, flat in other Europe/FSU, and plateau in Asia Pacific.

Gas penetration growing in Middle East, North America and Africa.

Gas penetration stable or declining in Europe and Asia Pacific.





Source: BP Statistical Review of World Energy 2015 (June 2016)

LNG INVESTMENTS HEADED FOR CORRECTION PRE CRISIS

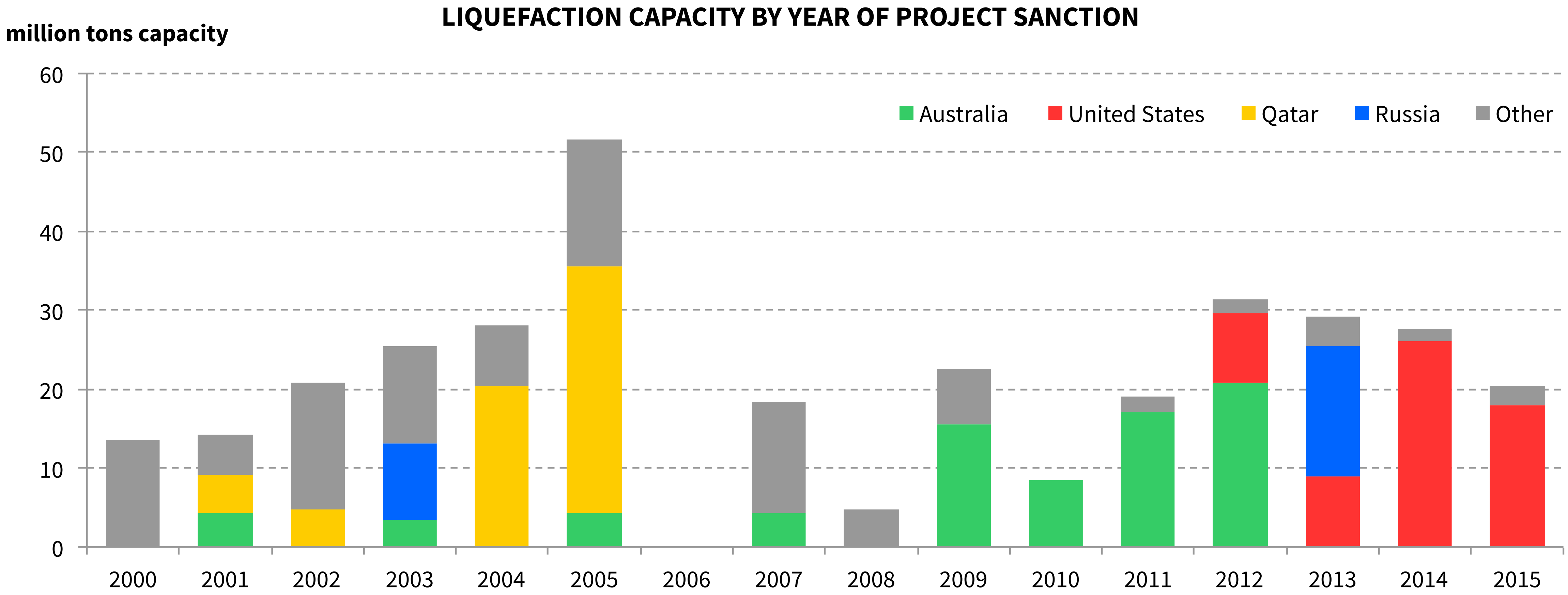
Since 2000, LNG industry has sanctioned 21 mmtpa of new capacity each year.

Three waves: Qatar (2001—2005), Australia (2007—2012) and now US L48 (2012—present).

Strong project sanctioning in 2012—2015 bound to lead to correction.

Downturn will only make that correction starker.

Major focus on cost-savings for new projects—significant reductions in unit CAPEX.



Source: enalytica based on IGU World LNG Report 2015, Company reports and press releases, industry press

SHIFTING FOCUS ON GAS DEMAND CREATION

In competitive markets, low gas prices have triggered a demand response, especially in power.

In the United States, the price floor has been driven by demand, not supply.

In the United Kingdom, low gas prices and higher carbon costs have pushed up gas.

Meanwhile, new markets continue to come into LNG.

2008	Argentina
2009	Brazil, Canada, Chile, Kuwait
2010	UAE
2011	Thailand, Netherlands
2012	Indonesia
2013	Malaysia, Singapore, Israel
2014	Lithuania
2015	Egypt, Jordan, Pakistan, Poland

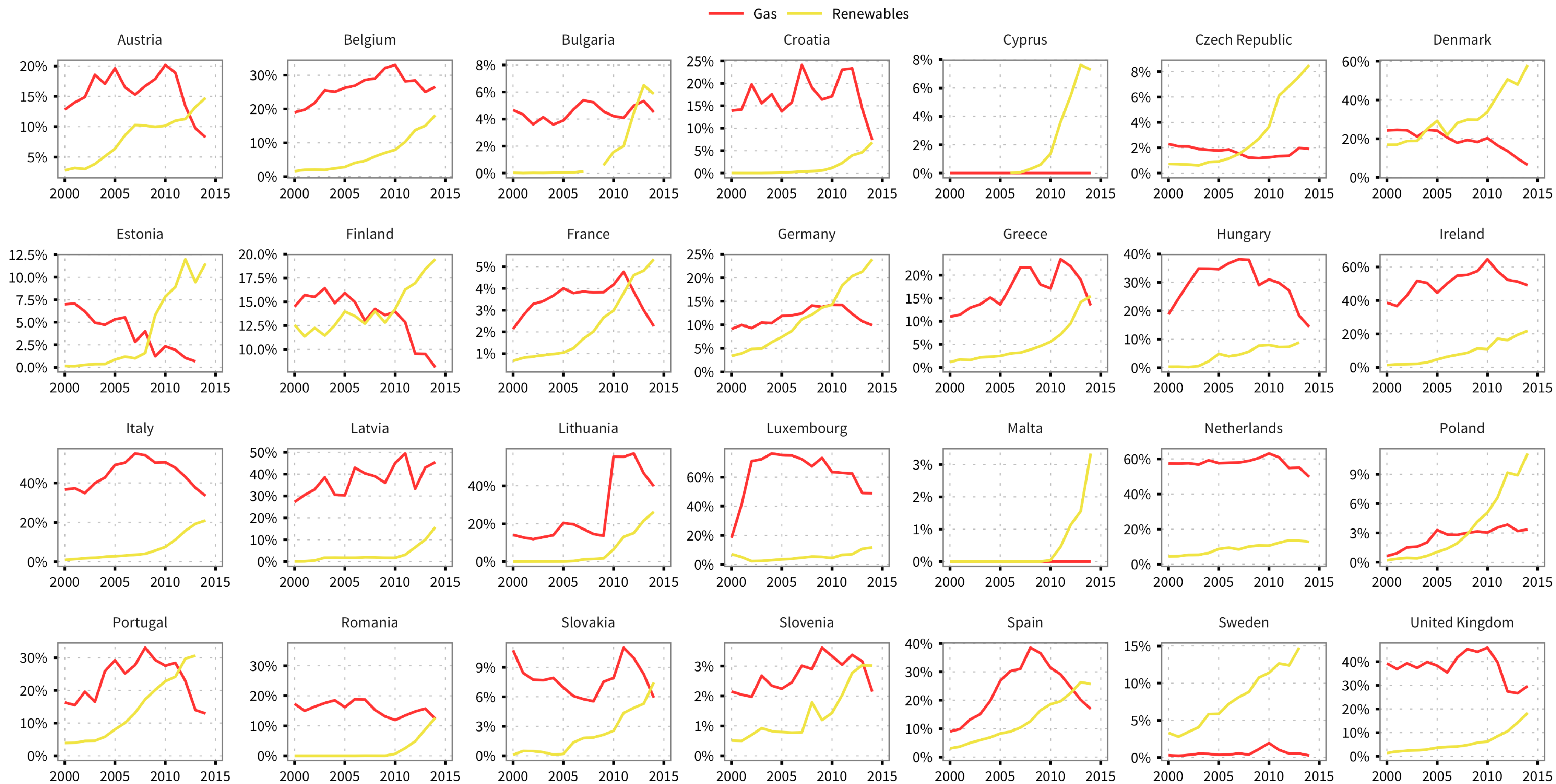
Who's next? Can Henry Hub based LNG help drive new imports?

Growth in EU renewables hurting gas

In theory, gas and renewables are complements; in practice, they are not.

In theory, gas is flexible and complement intermittency of renewables; in reality, it does not.

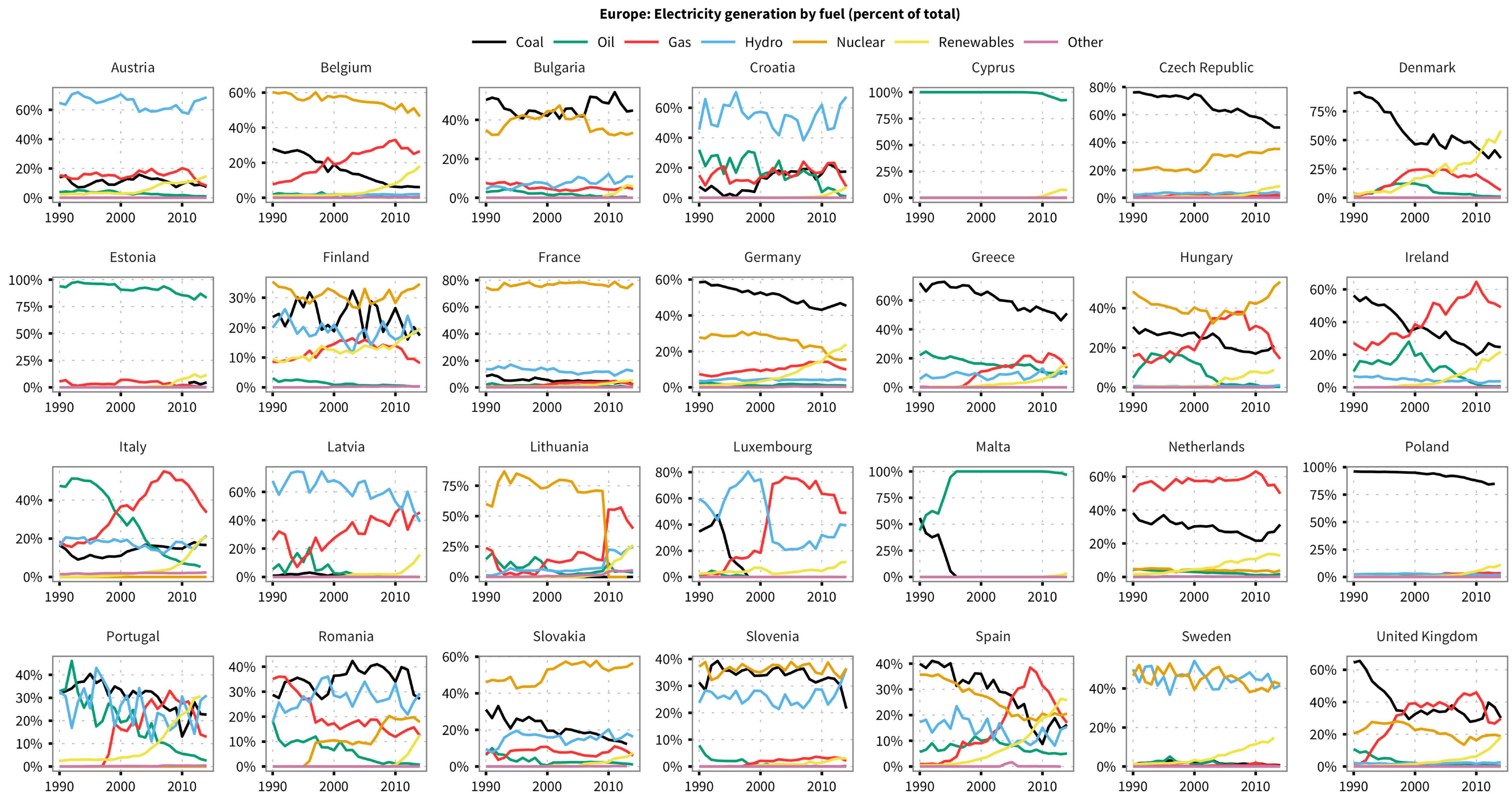
Europe: Electricity generation from gas and renewables



Source: Eurostat, Supply, transformation and consumption of electricity - annual data [nrg_105a]

ELECTRICITY SYSTEMS CAN CHANGE QUICKLY

Pretty common for countries to change their fuel mix by 20+ percent points in 10 years.



Source: Eurostat, Supply, transformation and consumption of electricity - annual data [nrg_105a]

Impact on SE Europe & East Med

Energy consumption patterns are changing—sometimes markedly and rapidly.

Investment capital and focus switching from supply towards demand.

Major focus on cash management and cost reductions.

Gas continuing to struggle in Europe, especially against renewables.

Investments targeting European market will be hard to justify.

Market concerns merely add to myriad other problems facing Caspian/East Med.

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