

# Pipe dreams

The European Commission's energy security package lays out the EU's commitment to the Energy Union but leaves some doubt about its commitment to the clean energy transition.

February saw the launch of the European Commission's energy security package (<http://go.nature.com/X8fZ7c>), which consists of a number of measures designed to bolster the EU's Energy Union strategy and increase its energy security, while aiming to meet climate change commitments. The package has four main elements: security of gas supply regulation across member states, increased intergovernmental agreements on energy, a strategy for internal sharing and storage of liquefied natural gas (LNG), and a heating and cooling strategy to aid the decarbonization of buildings and industry. Gas, as far as the Commission seems to be concerned, is a top priority.

Natural gas already accounts for about one-quarter of EU energy consumption, but more than half of it must be imported. The gradual shutdown of coal power stations means gas was always likely to pick up the slack. The EU's reliance on gas has been a continuing source of uncertainty for the region, in part because of geopolitical factors, like the Ukraine–Russia conflict. It is understandable, then, that gas would be a focus as the EU attempts to reduce the impact that international instability has on crucial energy supplies. Indeed, the bulk of the security package is directed towards gas supply and distribution across the Union, providing additional resilience and flexibility for member states in the event of disruption by increasing transparency around contracts and by thinking more regionally instead of nationally. This more harmonized approach would entail closer collaboration between states when thinking about potential risks and how to mitigate them. It remains to be seen how this will play out in practice.

Unfortunately, the proposals still leave the EU fundamentally reliant on imports of natural gas. The strategy around LNG and storage will go some way towards providing additional strength, if sufficient storage can be developed, by also offering flexibility for gas supply management to accommodate the expected increase of intermittent renewable energy generation. Overall, though, there seems little concrete in the proposals in terms of considering diversity of source as a route to energy security — beyond adding more LNG to the mix.

Delivering this energy security package will require new infrastructure: both new

pipelines across borders and new terminals for delivery and storage. Although this will create jobs, the scale and duration of the investment isn't clear. What is clear, though, is that this signals a definite commitment for the EU to gas and LNG for the next few decades. As its carbon emissions are lower than those of coal, gas has long been considered a bridging fuel to a decarbonized energy system. Implicit to that is the notion that eventually we'll move away from gas onto a decarbonized source. Although the security package doesn't suggest that gas is here to stay, an expanded infrastructure equally does not suggest that the EU's use of gas is going to dissipate any time soon. Instead, several more decades seem very likely, with no obvious end goal arising from the security package.

This longevity should draw attention to at least two important points. First, the on-going debate around methane emissions and leaks from natural gas supply demands further attention. This is a critical issue in evaluating the climate impact of natural gas. Calls for curbing methane emissions in the US have been made by the Environmental Protection Agency (<http://go.nature.com/o6UZlJ>); a similar approach in the EU would now be welcome.

Second, the future of carbon capture and storage (CCS) should be considered more seriously. The European Commission's own 2050 energy strategy (<http://go.nature.com/CuSVsD>) calls for a reduction of greenhouse gas emissions by 80–95% by 2050 compared with 1990 levels. Achieving that while still relying significantly on natural gas will doubtless be challenging. CCS could play a role in obviating that challenge, although recent moves like the UK's cancellation of its funding programs (<http://go.nature.com/Km7c4E>) cast doubt on the reality of national commitments.

However, the actual scale of gas dependence may yet be overstated. A briefing paper from think tank E3G in 2015 claimed that European gas demand has been falling since 2010 and that the European Commission has failed to accurately predict gas consumption every year since 2003, always needing to revise their projections down (<http://go.nature.com/NdVFMj>).

Demand should also be greatly affected by the final element of the energy security package: the heating and cooling strategy.

With 50% of EU energy consumption coming from heating and cooling in buildings and industry, energy efficiency measures have long been a target for energy policy: Australia recently announced extra loans to make homes more energy efficient (<http://go.nature.com/z4aWs6>) while think tank Policy Exchange has advised the UK government to invest more in improvements to its ageing housing stock (<http://go.nature.com/9GFdeq>).

The Commission's heating and cooling strategy aims to tackle the over-consumption and fossil fuel dependence of buildings and industry by making it easier to undertake renovations, by increasing the share of renewables employed for heating and cooling, and by reusing waste heat energy from industry in district heating systems. The expected savings in terms of energy demand could be as high as 56%, which would mean a saving of 25% of the total EU energy consumption, according to the Commission's own numbers. This part of the package should thus come as welcome news to many.

However, given that the EU remains committed to significant greenhouse gas emissions reductions, including the goal of complete decarbonization of its building stock by 2050, it is surprising that the energy efficiency proposals weren't a more significant part of the overall energy security package than the reinforcement of the gas networks. The heating and cooling strategy will provide jobs, diversity of supply, reduction of consumption, lowering of greenhouse gas emissions, and financial savings for businesses and consumers. The presumed effect of all of these on demand for gas begs the question: will the EU really need to build all this new gas infrastructure and what will become of it when the efficiency measures take off?

The forthcoming Renewable Energy and Energy Performance of Buildings directives will hopefully illuminate the intention and impact of the heating and cooling strategy, as well as the extent to which gas and LNG act as a bridge and over what timescale. They should also provide answers to the apparent dichotomy between the Commission's plans for enhanced gas regulation and infrastructure and for improved energy efficiency and lowering of demand, which has left some uncertainty about the commitment to the clean energy transition and the exact role of gas going forward. □