BRIEFING: Addressing European Energy Security

May 2014

The escalating crisis in Ukraine has propelled European energy security to the top of agenda. EU leaders have called a comprehensive plan for reducing energy dependency.

Europe is the world's biggest energy importer with an annual import bill of approximately €500 billion. 21 out of 28 EU countries count on Russian gas imports which cost in total €60 million every day. Unless the EU's import dependency is radically reduced, Europe's energy supplies will remain insecure and the EU economy will remain exposed to fossil fuel price shocks. Research by the European Commission shows that under a business-as-usual scenario, the EU's import dependency will continue to increase until 2050[1].

Energy efficiency and renewable energy have enormous potential in Europe

Some EU member states have proposed switching away from Russia to other exporting countries in the Middle East and Caucasus. These efforts would reduce reliance on Russian exports but would do little to address Europe's commitment to tackling climate change through reducing its use of fossil fuels.

Europe has great energy efficiency and renewable energy potential. With the right policies in place, Europe could achieve 41% savings in final energy demand by 2030 – equivalent to the EU's total current gas imports from Russia[2]. Numerous studies show how renewables and energy savings could help meet Europe's energy needs. Scenarios developed by the German Aerospace Centre for Greenpeace and by Ecofys for WWF found that energy from renewable technologies could meet almost half of Europe's energy demand in 2030[3]. The Fraunhofer Institute estimates that the EU could build 554 Mtoe of renewable energy up to 2030 –, representing about 45% Europe's 2005 energy demand (see figure 1).[4]

Crucially, many of the EU countries that are most exposed to Russian imports have some of the greatest energy savings potential. For example, Bulgaria relies on Russia for almost all of its gas needs, much of which is used in the building sector. Yet the OECD estimates that above 50% of energy consumed in buildings in Bulgaria could be saved.[5] Investing in the EU's full energy efficiency potential to 2020 would save consumers and governments in the EU over €200 billion every year until 2030[6] and substantially cut European energy imports.

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[1] European Commission, 15 December 2011: Energy Roadmap 2050.
[2] http://www.stefanscheuer.eu/20140321_Stefan_Scheuer_Gas_Savings_Imports.pdf
[3] Greenpeace, 24 October 2012: EU-27 Energy [R]evolution; WWF, 6 November 2013: Renewable energy: a 2030 scenario for the EU.
[4] Fraunhofer Institute, May 2011: Long Term Potentials and Costs of RES.
[5] World Bank, 17 July 2013: What is Bulgaria's Green Potential
[6] Ecofys, February 2013: Saving energy: bringing down Europe's energy prices for 2020 and beyond.

The potential for the development of renewable energy in these countries is also significantly higher than the European average in some cases. Poland, another country heavily reliant on energy imports, could source over a quarter of its energy from renewables in 2030[7].

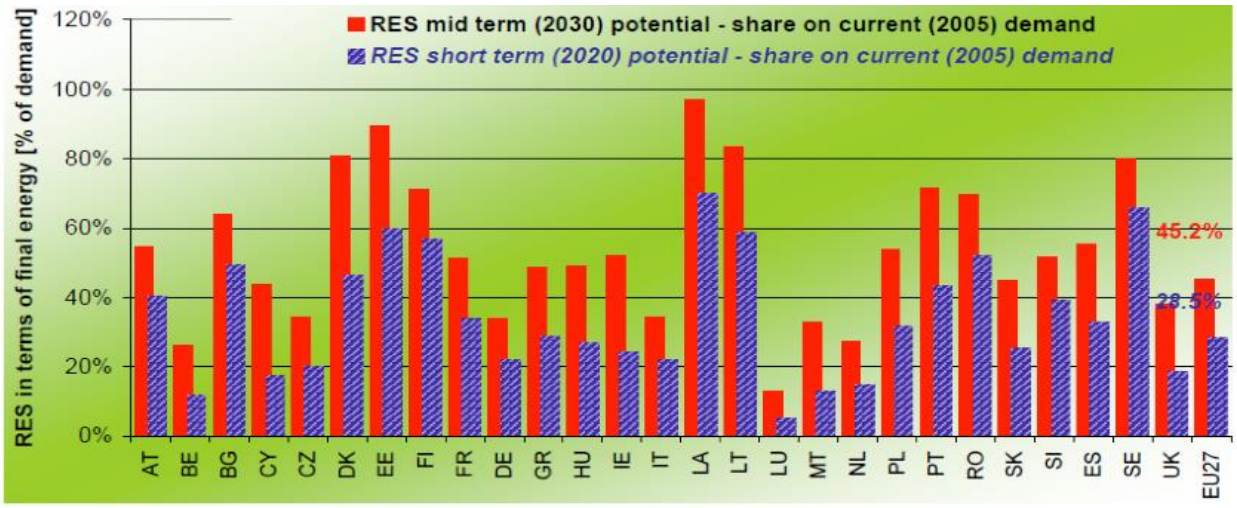

Figure 1. Comparison of short-term (2020) and mid-term (2030) realisable potential for RES in terms of (gross) final energy for all EU-27 Member States. Source: Re-shaping EU Energy policy project

Efficiency and renewable energy are the best solutions to security of supply

The energy dependence crisis has opened a debate on a wide range of possible solutions to Europe's overreliance on energy imports from Russia and others. Policy options such as energy efficiency, renewables, diversification of gas supply routes, nuclear and shale gas have been put on the table. However, energy efficiency has a distinct advantage: it is the technology that can be deployed the quickest, at low cost and can provide the scale needed to reduce gas imports. The less energy Europe uses, the less it needs to import, and the easier it becomes for burgeoning renewable energy technologies to meet demand and EU climate targets.

Diversification of gas supply routes may be one of the long-term measures but will be costly and dependent on the political relationships with our neighbours. Importing shale gas from the US will also not help to reduce EU energy dependency. Exploiting shale gas in the EU is simply not worthwhile or secure (see figure 2). Realistic estimates of shale gas potential in Europe show it can contribute only 2-3% of gas demand by 2030.[8]

According to the European Commission's 2030 impact assessment, a 35% EU renewables target in 2030 and ambitious energy efficiency policies would help cut net energy imports by more than half by 2050. Under the

[7] Greenpeace, 25 October2013: Poland Energy [R]evolution.
[8] International Energy Agency, 12 November 2012:
World Energy Outlook 2012 and E3G, March 2014: Shale Gas: Four Myths and a Truth.

same scenario, the EU's gas consumption would decline by 29% by 2030 and 54% by 2050. More ambitious European targets to increase the share of renewables and drive energy savings in 2030 would cut Europe's energy imports further still.

Option to enhance security of supply	Speed	Cost	Climate	Social acceptability	Scale
Energy efficiency					
Renewables					
Diversification of gas supply routes					
Nuclear					
Shale gas exploitation					

Figure 2. Scoreboard of the different options for security of supply on a scale of 1-3. Green=1, yellow=2, red=3 where 1 is the best score. Source: E3G

How to unlock the potential

Energy efficiency and the development of renewable energy must be the main pillars of the EU's energy security strategy. However, achieving these measures will not happen unless we put in place the necessary long-term policies and measures. The current voluntary approaches for energy efficiency have not achieved the scale of investment needed because market failures are multiple and systemic (see figure 3). The 2020 renewable energy target has been successful in driving the growth of renewables in Europe but the 2030 target of at least 27% proposed by the Commission represents little more than business as usual.

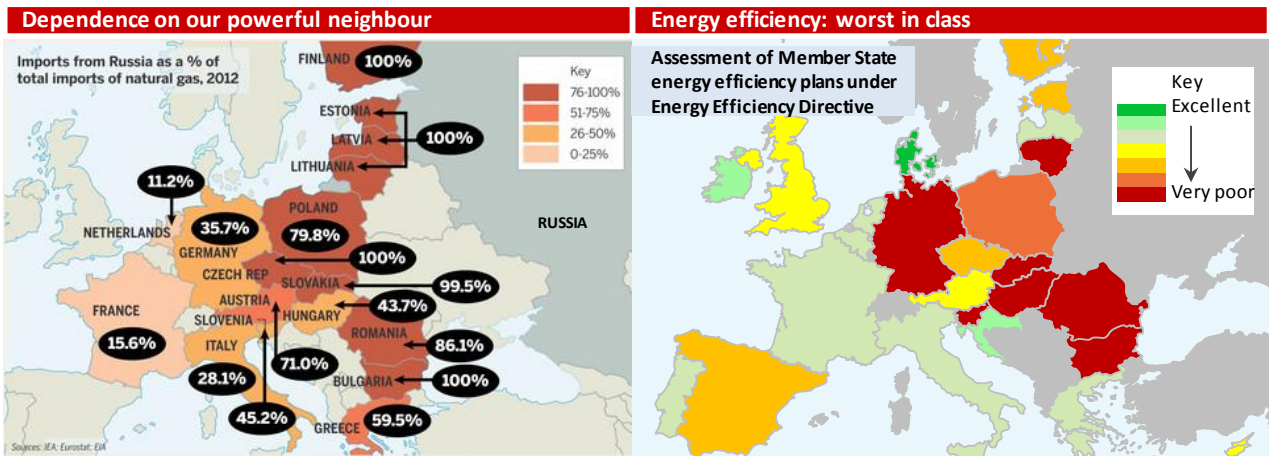

Figure 3. Source: Financial Times; Coalition for Energy savings

The role of energy efficiency needs to radically change to become a core part of the EU's energy strategy. At the top level, this means prioritising energy efficiency as the first step in reducing Europe's dependence on energy imports, supported by a binding 2030 40% energy savings target and a much more robust legislative framework to ensure this target is met. A binding 2030 renewable energy target of 45% should also be set. These targets will unlock the political momentum and send a clear signal to investors.

By setting three ambitious, binding targets for 2030, including one to cut domestic greenhouse gas emissions by at least 55%, European leaders can grasp this opportunity to put in place the long-term structural vision that will tackle Europe's energy security while securing Europe's commitments to tackle climate change.

Moving forward with concrete actions

Europe's plan to improve energy security should be backed by three concrete actions:

- A political commitment for a strong policy and investment framework for renewable energy and energy efficiency after 2020. Thus, as a first step, Europe's plan should make very clear the need for the EU council to agree, no later than October on a 2030 energy and climate framework that contain ambitious binding targets for renewable energy and energy efficiency and greenhouse gas emission reductions.
- Earmarking and Release of funds for programmes on energy efficiency, accelerating the EU's implementation of its 20% target in 2020, and helping with implementation of the Energy Efficiency Directive. Such funds could be sourced, for instance, from the auctioning revenues of the EU ETS and from the European Investment Bank.
- Speed up the construction of transmission and smart electricity grids that would help accelerate the penetration of renewable energy. This change could be achieved by prioritizing funds from the Connecting Europe Facility budget to those projects of common interest that have a direct impact on the integration of renewable energy sources.

Climate Action Network Europe is Europe's largest coalition working on climate and energy issues. With over 120 member organisations in more than 25 European countries, CAN Europe works to prevent dangerous climate change and promote sustainable climate and energy policy in Europe.