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POLICY BRIEF

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Sustainable Energy Policy for Central and Eastern Europe

A Vision for 2030

Central and Eastern Europe is facing significant energy security challenges. Yet the political response in the region focuses on short-term strategies of diversifying suppliers and supply routes for natural gas. In contrast, this paper proposes a long-term vision for secure and sustainable energy policies in the region in line with the European Union's energy policy priorities for 2030. Large-scale energy efficiency for the building sector and for industry, the development of renewable energy sources, and energy market reforms should be promoted in the context of a "Just Transition" framework, thereby mitigating the social and economic effects of the transition to a low-carbon economy.

Introduction

In Europe, our way of thinking about energy is changing. Geopolitical instability, volatile prices for fossil fuels, and the risk of runaway climate change make it clear that we need to redesign our energy policies. Moreover, the envisaged jobs and growth agenda of the European Union (EU) can only be realised if energy is affordable, sustainable, and secure. The promotion of renewable energy and investments in energy efficiency and energy infrastructure all contribute to a sustainable way of achieving energy security in Central

and Eastern Europe (CEE). At the same time, however, CEE countries are facing massive challenges when it comes to the transformation of their energy sectors – challenges that are closely associated with broader macro-economic and social developments. It is therefore imperative to underpin the necessary changes of policies for a Just Transition. Only through the right support mechanisms for high-carbon workers and regions will CEE countries be able to manage a low-carbon economic regeneration.

Implementing far-reaching changes in the energy system requires both financial resources and political buy-in, both of which are not readily available in CEE. Many EU member states in the region are concerned about losing out economically. They frequently see ambitious energy policies, in particular in the context of the EU's 2030 energy and climate targets, as a luxury they cannot afford and one that places an unreasonable burden on their economies. The EU's policies tend to be perceived as a threat to the energy status quo, increasing uncertainty and exposure

to market risk, and undermining efforts to deal with the challenges of energy dependence on Russia.

This paper examines how these fears can be allayed and how the actual risks can be better managed. It presents a number of policy recommendations to support progressive energy policies and improve energy security in CEE countries, with a particular focus on the EU's 2030 energy and climate package, and the concept of a European Energy Union.

EXECUTIVE SUMMARY

- This paper was written as part of a two-year dialogue process on “A Future Agenda for Eastern and Central Europe” – a project initiated jointly by the Friedrich-Ebert-Stiftung and Das Progressive Zentrum. As part of the process, three FutureLabs took place for young experts from diverse backgrounds to discuss the most pressing issues for Central and Eastern Europe (CEE). The FutureLabs dealt with the state of democracy in CEE, with social and fiscal policy, and with energy policy, respectively. With the on-going crisis in Ukraine, troubled relations with Russia, and the EU's dependency on energy imports, the focus of both the closing conference and this paper is on energy policy.
- The participants of the FutureLab were all acutely aware of the pressing energy security concerns troubling Europe and their region in particular. Whilst these concerns have to be addressed decisively in the short and medium term, it will be equally important to develop and implement a vision for secure and sustainable energy supplies in the region for 2030. Any decisions that are taken today can create lock-in effects for fossil fuels that make a phase-out at a later stage more costly than necessary. The promotion of renewable energy, large-scale energy efficiency, more and improved energy infrastructure, as well as energy market reforms present sustainable ways of achieving energy security in CEE. For the time being, the vast majority of decision-makers in CEE do not see the opportunities inherent in these energy choices, but – understandably – the associated costs in financial and political terms. This paper therefore argues in favour of a “Just Transition” approach to the energy challenges of CEE – a framework for a fair, affordable, and sustainable transition to a low-carbon economy. The concept was developed by the trade union movement to mitigate the impacts of the low-carbon transition on both high-carbon workers and consumers. Just Transition is therefore a viable approach to managing the risks of climate change, making energy supplies secure, and dealing with the social and economic implications at the same time.

- EU member states in CEE are espousing different strategies to deal with their energy security challenges: in order to become more independent from Russian gas they are planning to turn to liquefied natural gas (LNG), e.g., from the United States, or domestic shale gas; they are pursuing a strategy of diversification of suppliers and supply routes for natural gas; and some are committed to increasing their reliance on nuclear power. These solutions, however, do not address the inherent uncertainty in energy markets. They will still make countries hostage to volatile prices for fossil fuels, lock them into a high-carbon energy future, and prevent them from reaping the long-term benefits of renewables and energy efficiency. More hydrocarbons from more diversified sources can hardly be a way out of an energy and climate crisis. One cannot diversify one's way out of energy dependence.
- Thus, secure and affordable energy policies for the future have to include large-scale energy saving measures and an increased reliance on renewables. At the European level, pursuing an Energy Union with a focus on “affordable, secure, and green energy” is promising in this context.
- CEE countries have vast untapped potential in the area of energy efficiency. Targeted EU (co-)financing – in particular in the context of the €300 billion “Juncker Investment Package” – could help trigger the right investments for large-scale energy efficiency measures that could modernise energy infrastructure and ultimately cut energy bills. Accompanying demand-side approaches will be key to make this work. Energy efficiency can also help with the integration of more renewables in the energy systems.
- According to recent figures, the EU stands to lose €190 billion – a net welfare loss of 1.8% to current GDP – due to climate-related damages if it fails to prioritise effective climate action. The EU also stands to lose credibility in the international climate negotiations if it does not deliver progressive energy policies at home. An ambitious Europe, on the contrary, can strengthen the UN process and generate new momentum ahead of the climate summit in Paris in late 2015, where a new international agreement is to be concluded.
- The tools and technologies that enable us to transform our economies are available today, but Europe needs to stop trading off one issue against the other. A Europe that consumes less energy thanks to ambitious energy efficiency measures, a greater reliance on indigenous renewables, and deep reforms in its energy markets is also a geographically stronger Europe.

Energy Security, Energy Union, and a Just Transition in Europe

The Ukraine crisis brought it home yet again: the EU is not energy secure: 53% of the EU's energy is imported.¹ It is heavily dependent on imports of crude oil (almost 90%), natural gas (66%), and to a lesser extent solid fuels (42%), as well as nuclear fuel (40%).² Its top supplier of both oil and gas is Russia. In 2013, energy supplies from Russia accounted for 42% of the EU's natural gas imports and 33% of its oil imports.³ Poland is one of the most import-dependent countries in this regard, with a particular reliance on Russia for its oil (95.5% of all imported oil in 2012), gas (79.8% of all imported gas in 2012), and hard coal.

Increasing dependency on energy imports can be expected in the region if a business-as-usual path is followed. According to figures from BP, coal reserves in the major coal producing countries in CEE are running out.⁴ At the moment, the price for coal is cheap, not least because the "shale gas boom" in the United States (US) made overcapacities of coal available for export to Europe. As a consequence, over the first eleven months of 2012, the EU's consumption of coal increased by 2% and imports of coal increased by almost 9%.⁵

However, a focus on low prices for coal risks "high-carbon lock-in" in many CEE economies. If energy systems remain based on fossil fuels, the vulnerability to future price shocks will be significant. And in an increasingly carbon-constrained world, an early and considered move away from high-carbon to low-carbon energy systems makes a lot of sense economically. With the EU's commitment to leading in international climate policy, it is only a matter of time until member states will be forced to step up their own efforts in the low-carbon transition. In the run-up to the international climate

conference in Paris in December 2015, where parties will negotiate a new global agreement to cut greenhouse gas (GHG) emissions, the EU will want to set the pace rather than be sidelined by others.

In 2013 alone, EU member states spent more than €1 billion a day on imported fossil fuels – money that is lost forever to the European economy without contributing to economic growth, jobs, or energy security.

Sustainable energy policies are in Europe's own interest. Any scenario for the EU's energy future in 2030 has to account for a situation where reliable energy imports, be they from Russia or any other part of the world, can no longer be taken for granted – whether it is for geopolitical reasons or because a carbon-constrained future will make the reliance on fossil fuels either too risky, too expensive, or both. Cost already plays a major role: in 2013 alone, EU member states spent €400 billion on imported fossil fuels – that is to say more than €1 billion a day. This money is lost forever to the European economy without contributing to economic growth, jobs, or energy security. Increasing amounts of money spent on energy imports also risk worsening trade balances and the sovereign debt crisis in many member states. Individual member states face different kinds and degrees of vulnerability in the area of energy imports, of course. However, a more European approach to energy security will help all EU members to become more resilient to possible future supply or price shocks.

The most immediate energy risk to CEE countries is a disruption of Russian gas supplies in the winter – as in January 2009 when Russia cut off gas supplies to Ukraine for two weeks and with it the supplies of other CEE countries because their gas pipelines run through Ukraine. The Baltic States were not affected by the supply disruption

1. The differences between countries that import 100% of their energy supplies (e.g., Malta) and those that are net energy exporters (e.g., Denmark) are significant.

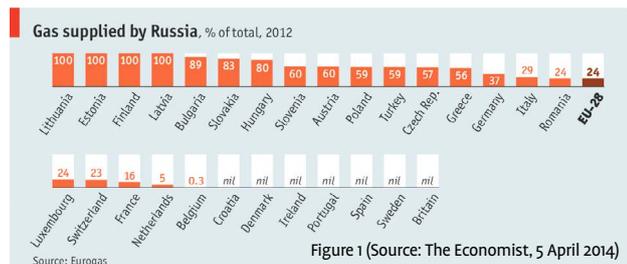
2. [European Commission press release on European energy security, May 2014](#)

3. Ibid.

4. [BP statistical review of world energy, June 2014](#)

5. [Article on US shale gas and European industry, Carnegie Europe, October 2013](#)

in 2009, because they receive gas through direct pipelines from Russia. Even so, their total dependence on Russia for their gas supply makes them particularly vulnerable. In Lithuania, natural gas⁶ is among the main sources of electricity production; Latvia produces roughly one-third of its electricity consumption from natural gas; and all three Baltic States depend on gas for their heating systems.⁷



It was not least this dependency on Russia that assured President Putin that the EU would not act decisively in response to the annexation of Crimea and Russia's involvement in the conflict in Eastern Ukraine. Not surprisingly, the EU's room for manoeuvre as a geopolitical actor is suffering, which could have major implications for future endeavours to shape the global order. Although Russia needs the EU market for its energy exports, decreasing Europe's dependency on Russia — and hence its vulnerability — is a key concern for European leaders.

ENERGY SECURITY AND NATURAL GAS IN CEE

The energy security challenge in CEE is largely a gas supply challenge, and it is tackled in different ways by different CEE countries. In March 2014, the four Visegrád countries (V4) — Poland, the Czech Republic, Slovakia, and Hungary — turned to the US Congress to address their vulnerability to supply shortages. They felt that they could not take solidarity of their European partners for granted and asked the US to facilitate access to its natural gas. Liquefied natural gas (LNG) from the US seemed an obvious solution to fill future supply gaps. Poland is already building an LNG import terminal in Świnoujście on the Baltic Sea coast, which is expected to be completed in early 2015.⁸ Lithuania's LNG import terminal in Klaipėda is due to become operational soon.⁹

6. Latvia is engaged in some reciprocal action with Russia because of its strategically located underground gas storage facility.
7. This is true for the capital cities — Vilnius, Riga, Tallinn, and a number of other bigger towns that have natural gas supplies. However, many regional towns away from the capital cities and their agglomerations cover their district heating needs by producing heat in cogeneration from biomass.
8. [TVN24 report on the LNG import terminal in Świnoujście, June 2014](#)
9. The terminal's annual capacity is up to 4 bcm, which is approximately 75% of the total demand in the Baltic States.

Turning to the US for gas imports is not without risks, however. The volume of gas that could be imported as LNG would be much less than what Russia is currently supplying. In addition, it is very unlikely that US LNG exports, once they begin, will be going exclusively to European destinations: European import hubs will have to compete with lucrative markets in Japan, East Asia, India, and Brazil. It is also questionable how long LNG supplies from the US at an affordable price will last.

Another alternative to secure natural gas for Europe would be to exploit indigenous shale gas. This could possibly make Europe more energy secure in the short term but would come at a tremendous cost to both the environment and future prosperity. According to the International Energy Agency, shale gas could only meet 2 to 3% of Europe's gas demand by 2030.¹⁰ By 2020, European shale gas production will only be at about 4 bcm per year, which is far below the United States' 70 bcm today.¹¹ Moreover, the production costs in the EU would be 150 to 250% higher than in the US¹² Environmental regulations, public opinion, and the cost of the necessary technologies further hinder the exploitation of shale gas in Europe. Therefore, extrapolating the success of shale gas in the US to Europe does not work. The exploitation of indigenous shale gas would also require emissions intensive and costly infrastructure investments that can create medium- and long-term lock-in effects.

Nevertheless, natural gas from reliable sources can be seen as a viable transition fuel for many countries in CEE. Its carbon emissions are lower than those from coal and the impact on public health would be positive given that pollutants from coal-fired power stations would be reduced. The biggest challenge will be that of managing the risks connected to any source of energy: since markets tend to develop in unpredictable ways, it will be hard for any country to propose a "perfect" energy mix from an energy security, affordability, and sustainability point of view. One way to address the lack of certainty in energy policymaking at the European level could be the concept of the Energy Union.

10. [IEA World Energy Outlook 2012](#)
11. [The Economist, 5 April 2014: European energy security. Conscious uncoupling.](#)
12. [E3G report on shale gas, March 2014](#)

A EUROPEAN ENERGY UNION

The risks to reliable gas supplies in CEE make it very clear: purely national energy policies are no longer viable. Unless we start to think European about the way we produce, procure, distribute, and consume energy, we may have to face a major energy crisis sooner rather than later. The President of the European Commission, Jean-Claude Juncker, underlined this at the very beginning of his term in office. Juncker declared that one of the five priorities for his presidency would be “a new European Energy Union that will offer green and affordable energy through diverse sources and drive Europe’s industrial policy, while responding to climate change challenges”.

The idea of an Energy Union was initially a reaction to the conflict in Ukraine. In an editorial in the *Financial Times* in April 2014, Donald Tusk, the previous Prime Minister of Poland and now President of the European Council, called for a European Energy Union, noting that “excessive dependence on Russian energy makes Europe weak”. Poland also drafted a “Roadmap” for the Energy Union to shape the European Commission’s work on an Energy Security plan ahead of the June 2014 European Council meeting. The Roadmap made it clear where the fault lines are in the EU’s debate over energy policy.

Purely national energy policies are no longer viable. A more European approach to energy security will help all EU members to become more resilient to possible future supply or price shocks.

Although it included a number of important elements, such as mutual support in case of energy emergency, the Roadmap took a “security-as-usual” approach to energy policy. It thereby missed the broader set of security, competitiveness, sustainability, and social challenges that a progressive energy policy has to tackle. Most importantly, “making full use of indigenous fossil fuels”, as the Roadmap states, would work against this broader set of concerns. The Roadmap presented hydrocarbons as a way “to address energy dependency challenges in a cost-effective way” – thus, “coal should be rehabilitated in the EU as contributing to energy independence.” The paper also argued that “[i]nvestments in the environmentally friendly and efficient use of conventional energy sources

such as coal can bring significant GHG emissions reductions and contribute to the EU climate policy without hampering energy security or the competitive position of the EU vis-à-vis its main trading partners.”

It is understandable that Poland, with its heavy reliance on coal for its domestic electricity supply, would take such a positive perspective on fossil fuels. And it is the right of every EU member state to determine on its own energy mix. However, the European Energy Union approach has the potential to improve the EU’s energy security and make its energy systems more sustainable at the same time. This opportunity should not be missed. Moreover, the EU’s climate policy applies to all member states, even though burden sharing agreements impose different obligations on individual member states.

In October 2014, Maroš Šefčovič, the Slovak Vice President of the European Commission for Energy Union, presented the five pillars of the Energy Union. They include:

- **Security, Solidarity, and Trust:** better coordination in dealings with third parties; cooperation with neighbours; exploring common purchasing of gas; strengthened policy cooperation between member states; continued diversification of supply, notably through the Southern Corridor, Norway, the Mediterranean gas hub, and LNG terminals.
- **The Completion of the Internal Energy Market:** more cross-border flows; regional cooperation; better infrastructure with support from structural funds; the Connecting Europe Facility (CEF); and the future EU investment plan.
- **Moderation of Demand:** energy efficiency to become “the first energy source”; a review of the EU’s energy efficiency target; and work on the governance system in meeting the target.
- **Decarbonisation of the EU’s Energy Mix:** the EU is to become the world’s number one in renewables to maintain global leadership in renewable technologies; ensuring that international partners take on comparable efforts.
- **Research and Innovation** require more investment.

A translation of these points into practice would improve the energy security of CEE member states and help them realise the potential of energy efficiency and renewables. A Green Paper on the Energy Union is to be expected by the spring of 2015.

JUST TRANSITION

Implementing the many of these ideas will be challenging for several CEE countries. The economic and social implications of a possible phase-out of coal would pose a particular challenge to Poland and other countries in the region. These issues can only be addressed through a comprehensive approach that takes the Just Transition argument seriously. The Just Transition concept was developed by the European trade union movement to make the fight against climate change, as well as championing measures for energy savings and renewable energy investments, compatible with social and labour concerns.¹³ Workers' concerns will have to be at the centre of any transition, as they will require new employment opportunities and support when acquiring new skills. One possible approach could be to form "Just Transition panels" at EU, national, and/or regional levels to map specific transformation needs and develop plans for financing these transformations. One way to generate the necessary funds for the Just Transition approach would be to draw on the EU Emissions Trading System (EU ETS) and make ETS allowances available for a "Just Transition Fund". This could finance training for high-carbon workers, technological innovation, and regional investments to facilitate the transition to a low-carbon economy. Yet many other and new components are conceivable and necessary to realise a Just Transition for CEE countries from a high-carbon economy to one based on clean and affordable energy supplies.

COAL IN CEE

If a sustainable energy transition comes at the price of competitiveness, it will be hard for decision-makers in CEE to champion alternatives to a high-carbon energy system and economic development path – i.e., energy efficiency and renewable energy sources (RES). It will be important to keep in mind, however, that a business-as-usual approach will increase costs in the long term. This is particularly evident in the case of coal, both in terms of use and production.

When it comes to coal production, the coal sector in many CEE countries is already under pressure despite significant subsidies over the past few decades. Poland, for example, experienced considerable job losses in coal mining: from 338,784 workers in 1993 to 134,094 in 2007. This amounts to a 60% decrease in the workforce. Today's biggest coal producer in Poland – Kompania Węglowa, which currently employs over 60,000 people – is on the brink of bankruptcy. The main reason is the high price of domestic coal now competing with imported coal.

Workers' concerns will have to be at the centre of any transition - "Just Transition panels" at EU, national, and regional levels should develop plans for financing the transformations.

However, over 90% of Poland's electricity needs are covered by coal-fired power stations. The industry employs more than 100,000 people. Understandably, this makes it difficult for Poland to envisage a phase-out of coal without a carefully drafted plan for a socially and economically acceptable transition. At the same time, however, the Polish government seems to be consciously ignoring any decarbonisation requirements, which it is committed to via EU membership, specifically via the EU's international decarbonisation commitments. It seems as if the pain of decarbonisation in Poland is outweighing the gains. However, the consequences of not recognising the risks of a fossil-based power system can increase the political, financial, and social price at a later stage. It will therefore be essential to identify ways to make the delivery of a low-carbon transition in Poland more affordable: options exist in the areas of infrastructure, energy efficiency, demand-side solutions, innovation and technological options, and market design.

Yet, despite the obvious risks and existing options to tackle the challenges, the Polish government claims that the construction of new coal capacities in Poland is inevitable. Currently, around 4.5 GW of new coal capacities are being built despite the absence of an economic case.

13. [The ETUC on Just Transition, October 2011](#)

NUCLEAR POWER IN CEE

Regarding the role of nuclear power as a way to guarantee energy security in CEE, commentators tend to disagree on its potential. Some developments, especially in the V4, suggest a renaissance of nuclear power in the region. In the autumn of 2013, the V4 publicly underlined the importance of nuclear energy and said they expected the EU to support them in enhancing their nuclear capacity. In 2014, Hungary signed an agreement with Russia on a loan of €10 billion for the construction of two new reactors at the Paks nuclear power plant with 2000 MW production capacity. The plant already supplies 40 to 43% of the country's total energy demand. With the extension, this share will increase to over 60% and turn Hungary into a net electricity exporter. The Czech utility company CEZ has invited tenders to build two new units of about 1200 MW each at its Temelín plant. In Slovakia, two new reactors with a combined capacity of 880 MW are likely to go online soon. Poland has announced its intention to complete its first nuclear reactor by 2023.

Some observers and analysts emphasise that important economic, legal, and political reasons might prevent some of these projects from being implemented in the foreseeable future and are less optimistic about the prospects of nuclear power in CEE.¹⁴ Moreover, scientific studies suggest that nuclear power is not compatible with a possible renewables-based power system, which could become a serious alternative given the significant decline in the prices of RES.¹⁵

However, as long as governments in the region do not see RES as both technologically feasible and affordable, nuclear power is unlikely to lose its legitimacy. An additional problem is the skewed perception of the real cost of nuclear power: subsidies for the construction of nuclear power plants make it possible to produce "cheap" electricity, and excluding the problem of nuclear waste disposal from the discussion also "hides" these additional costs. So far, no country has identified a long-term, viable, and safe final repository for its nuclear waste.

Overall, the energy policy debate in CEE is, understandably, dominated by affordability and competitiveness concerns. This proves the necessity of both a European Energy Union and a Just Transition approach in energy policy in the region. CEE countries are still in the process of catching up in their social and economic development, so the availability of cheap energy seems crucial. Yet an entirely new framing of what is affordable might be necessary. A fossil fuel-based approach to energy security will not achieve the best possible outcomes for both CEE economies and for Europe's energy and climate policy agenda. More hydrocarbons from more diversified sources can hardly be a way out of an energy and climate crisis. After all, we will not be able to diversify our way out of energy dependence. Investing in new fossil fuel suppliers and supply routes can unblock future bottlenecks, but it will still make us hostage to volatile oil and gas prices and lock us into a high-carbon energy future. Many factors suggest that secure and affordable energy solutions can be achieved through energy efficiency measures and more renewables in the energy mix, as the following two sections will demonstrate.

Energy Efficiency

Numerous studies have shown that lower energy consumption can create the right conditions for improved energy security. According to a study by Ecofys, for example, investing in the EU's full energy efficiency potential would save the EU over €200 billion every year until 2020, and even €250 billion until 2030. It would also substantially cut European energy imports.¹⁶

The Fraunhofer Institute estimates this potential to equal 57% of final energy demand in 2050 – with annual cost savings of \$695 billion. Energy savings of 41% are possible by 2030 using near-market technologies.¹⁷ It also found that the costs of this investment would be offset by savings of €1 - €2 trillion during 2020-2030 alone. Another report by the

14. [Results of Czech-German-Polish Dialogue on Energy Issues, March 2014](#)

15. [Fraunhofer ISE study on electricity production costs of renewable energies, November 2013](#)

16. [Ecofys study on saving energy in Europe, February 2013](#)

17. [German Federal Ministry and Fraunhofer ISE policy report on energy efficiency, June 2014](#)

European Industrial Insulation Foundation found that a Europe-wide industrial efficiency programme using cost-efficient technologies could reduce heat loss by 66%, cut energy bills by 75%, and save energy equivalent to 15% of 2011 Russian gas imports.¹⁸

The European Commission's own impact assessment showed that a 40% energy savings target could lower the EU's gas imports by 40%. This is equivalent to the entire annual imports of Russian gas. A 40% energy efficiency target could also increase the EU's GDP by 4.5% by 2030, create an annual 3.15% boost in employment, especially in the construction sector, and massively cut fossil fuel imports by up to €500 billion annually.¹⁹ Considering that over 40% of energy consumption in Europe is used for the generation of heat for either domestic or industrial purposes, there is clearly considerable potential for energy saving in the heating sector.

Yet in July 2014, the Commission failed to show leadership and proposed a target of merely 30% energy savings for the EU-27 by 2030. It also left it to the member states to decide whether or not this target should be binding. The Commission thereby clearly ignored the lessons that should have been drawn from existing policies: the 20% savings target for the year 2020 will be missed because it is merely indicative and therefore unenforceable, so member states do not feel bound by it.²⁰ Against the background of existing lessons learnt, the European Council's decision at its meeting in October 2014 seems hard to justify. European Heads of State and Government agreed on a figure even lower than what the Commission had proposed. An indicative energy efficiency target of "at least 27%" – with a planned review in 2020 "bearing in mind 30%" – will not deliver the energy savings Europe needs for its energy security and will not enable it to deliver credible climate policies.

A 27% energy savings target will also undermine efforts to tackle concerns about energy poverty and welfare in Europe. Today, already 54 million people in the European Union cannot afford to heat their homes adequately – they count as energy poor because they have to spend more than 10% of their income on energy.²¹ This

is not surprising as average electricity and gas prices in the past ten years have increased across Europe by more than 30% and 40%, respectively. People on low incomes in many European countries may increasingly face the choice between heating and eating. Helping them foot their heating bills by artificially lowering the prices for oil and gas is a useful stopgap measure, but it is not a sustainable long-term solution.

As the case of Hungary demonstrates, "cheap energy policies" do not make sense beyond short-term political gains and a temporary reduction of inflation rates. In 2013 and 2014, the government mandated a series of 20 to 25% cuts on utility rates, including gas and electricity. These cuts came on top of a 2010 freeze on utility rates, thereby pushing prices well below financial profitability. This price environment has led to a lack of predictability and hence to serious underinvestment in the energy sector. In the past two years alone, investments in the energy sector in Hungary dropped by about 60 to 80%. This impacts on grid reliability, the delivery of energy efficiency measures, and other energy policy areas.

Investing in a more energy efficient housing stock instead can achieve several objectives concurrently: heating bills will be lower, retrofitting will create jobs and generate tax income for the government, and the reliance on imported fossil energy will decrease. The massive investments required for this kind of intervention cannot easily be generated through national budgets in CEE, of course. Targeted EU (co-)funding, however, can help trigger the right investments for large-scale energy efficiency measures.

ENERGY EFFICIENCY POTENTIAL IN CEE

Thus, against the background of the complex challenges of energy security, competitiveness, energy poverty, and the need to tackle climate change, a key priority must be to unlock the vast untapped energy efficiency potential in CEE. So far, we still lack a sound basis for policy recommendations, as there are hardly any studies on the macroeconomic potential of energy efficiency, especially in CEE.

18. [Ecofys study on energy and CO2 savings potential of industrial insulation, June 2012](#)

19. [FOE Europe report on the EU's 27% energy savings target for 2030](#)

20. [EurActiv report on the EU missing the 20% energy savings target for 2020, July 2014](#)

21. Eurostat (2012) EU-Statistics on Income and Living Conditions (EU-SILC)

A study by the Wuppertal Institute demonstrates the energy efficiency potential in the Czech Republic. Especially in the area of green renovation and retrofitting, strong incentives could lead to a 58% decrease in energy consumption by 2050 and 23% by 2020.²² The models demonstrate that industrial energy consumption could be 39% lower and households could cut their energy needs by 60% by mid century.

According to another study prepared for Poland, the biggest potential to increase energy efficiency – and thereby produce significant welfare gains – exists in the building sector. The recommendations of this study – covering retrofitting of buildings, the modernisation of central heating systems, and an increased use of solar PV – would also lead to a reduction of Poland's CO₂ emissions by almost 48m tons annually – this is equivalent to almost 15% of Poland's total emissions in 2013.²³

The EU member states most dependent on Russian gas could also benefit disproportionately from energy efficiency measures: these states are generally also the ones with the worst energy efficiency performance and the poorest implementation of the European Energy Efficiency Directive (EED). Their current energy intensity levels are between 150 to 450% of the EU average – demonstrating the huge potential to increase the efficiency of these economies.²⁴ Therefore, they also have the most to gain from large-scale energy efficiency measures.

ENERGY EFFICIENCY AND THE EUROPEAN ENERGY SECURITY STRATEGY

Against this background, the EU's Energy Security Strategy should focus on mandating and incentivising action to deliver cost-effective energy demand reduction. Countries are still not doing enough, largely because energy efficiency is frequently associated with an increase of energy costs. This is true but more often than not due to a complex set of political obstacles rather than a lack of funding alone. It is therefore essential that these kinds of challenges, including

resistance from established energy suppliers that are employing restrictive practices and building barriers to entry, are addressed alongside the financing challenge. CEE countries need financing options to scale projects and they need support to build capacity in order to capture cost-effective energy savings.

A key priority must be to unlock the vast untapped energy efficiency potential in CEE. Hence, the EU's Energy Security Strategy should focus on mandating and incentivising action to deliver cost-effective energy demand reduction.

Pursuing energy efficiency through demand management technologies – such as smart grids, smart metres, and energy management systems – is also crucial in order to properly integrate renewable energy into the broader energy system. This will help manage intermittency and enable renewable and other low-carbon infrastructure to move to scale. Thus, there are significant synergies between large-scale energy efficiency and the successive increase in renewables in the energy system. Investment needs could be covered through the “Juncker Investment Package”. Most importantly, however, CEE governments have to give investors the necessary certainty to incentivise investments.

Renewables and the Energy Mix

The overall RES potential in the EU is very high, with variations among individual member states as well as across and within regions in Europe. Scenarios developed by the German Aerospace Centre for Greenpeace²⁵ and by Ecofys for WWF²⁶ found that energy from renewable technologies could meet almost half of Europe's energy demand in 2030. The biggest potential

22. [Czech environmental groups' national energy and climate roadmap, April 2010](#)

23. [Report on the potential of energy and emission reduction in Poland, 2009, p. 51](#)

24. [Eurostat 2012 data on the energy intensity of European economies](#)

25. [Greenpeace study on a sustainable EU 27 energy outlook, October 2012](#)

26. [Ecofys study on a 2030 renewable energy scenario for the EU, February 2013](#)

for the development of renewable energy is in CEE. Poland, for instance, which is heavily reliant on energy imports, could source over a quarter of its energy from renewables by 2030. The estimated RES potential in the Baltic Sea region is approximately 1300 TWh, which is almost 900 TWh more than the current capacity.²⁷

And yet, scepticism reigns in most CEE countries when it comes to their renewable energy potential. Decision-makers frequently argue that green energy policies are unaffordable and that support mechanisms such as feed-in tariffs (FIT) and feed-in premiums (FIPs) drive up energy prices. Renewables are also blamed for incentivising corruption through subsidy schemes that can easily be misused for personal financial gain.

The political will for the introduction of renewables in CEE is frequently lacking – and where it exists governments are still on steep learning curves. The Czech Republic, for example, with its heavy reliance on gas and oil imports from Russia, counts on nuclear power for its energy security. Many experts consider the estimated potential for RES in the Czech State Energy Strategy to be set too low – but these analyses have not influenced policy yet. One of the reasons for underestimating the RES potential might be that the country has been disillusioned by a recent example of policy failure. In 2009/10, an ill-designed FIT for solar PV caused a lot of damage. As a result, citizens will have to shoulder a massive financial burden for decades to come. Nevertheless, thanks to this scheme, the country boasts the fourth-highest share of solar-generated electricity consumption in Europe, after Italy, Germany, and Spain.²⁸

A lot depends on the smart design and framing of renewables policies. FITs are largely assumed to be the most effective mechanism to introduce renewables into the power mix and to increase their share over time. But local conditions might require other methods. Importantly, CEE governments have to realise that renewables can be a key factor in their attempts to keep energy prices in check in the medium and long term. Structural reforms in national power sectors will be necessary as well to create an environment that incentivises investments in renewables.

The structural challenges are particularly striking in the case of Hungary where the energy system has become highly centralised over the past few years. There is a widespread perception that Hungary could not gain from more renewables because there is no domestic industry. Experts are also concerned about the possible impact on grid stability. Therefore, a 2010 strategy to cautiously increase renewables targets for 2020 was not followed through. The government also essentially halted investments in renewables through the abolition of the subsidy regime “KÁT”. At the moment, renewables make up approximately 7 to 8% of the Hungarian power mix, and the rate of expansion is stagnant.

Nevertheless, some CEE countries are doing well in terms of the share of RES in the final energy consumption: Latvia has the second best performance in the EU, closely following its Scandinavian neighbour Sweden. Moreover, some local actors – e.g., in Poland – have grasped the potential of renewables to contribute to energy security. The vice mayor of Bielsko-Biała, Zbigniew Michniowski, was proud to announce his city’s performance as a pioneer in terms of saving energy and introducing renewables: “What used to be large, monolithic energy systems are increasingly converging into a wide variety of scaled-down initiatives, where ‘consumers’ are becoming active, energy-aware ‘citizens’ and where local authorities play a crucial role, given their competences and proximity with local stakeholders.”²⁹ Overall, more than 800 municipalities across Poland have submitted applications to the National Fund for Environmental Protection and Water Management, which grants financial support for the development of low-carbon energy plans. In the Czech Republic, many municipalities striving for certification under the Local Agenda 21 are becoming local drivers of progressive energy undertakings.³⁰

Renewable energy has already significantly diversified the European energy mix. The current share of renewables in the EU’s aggregate final energy consumption has increased from 8.3% in 2004 to 14.1% in 2013, and is projected to reach 20% by 2020. This development is largely the result of the EU’s energy and climate package for the year 2020, which gave investors the

27. Baltic Development Forum report on sustainable energy scenarios, 2009

28. [Results of Czech-German-Polish Dialogue on Energy Issues, March 2014](#)

29. [Article by Zbigniew Michniowski on Polish energy saving efforts and promotion of sustainable energy, June 2014](#)

30. For example, the city of Litoměřice (25,000 inhabitants) is running a unique project, which is the very first one in the Czech Republic to make use of geothermic energy.

necessary certainty. This development, combined with energy saving policies, can tackle the primary driver of increasing energy costs in Europe: the rising global energy demand.³¹

Europe has therefore been an international forerunner up to now. However, the 2030 energy and climate package, resolved at the October 2014 EU Council, will not help the EU maintain that position. The agreed target of “at least 27%” RES at the European level is barely above business-as-usual and therefore unlikely to stimulate the necessary level of investment, R&D, and innovation. Others are rapidly following suit. According to Bloomberg New Energy Finance’s 2030 Market Outlook, the share of “modern” renewables (i.e., excluding large-scale hydro) will rise to 20% of the global generation in 2030, up from the current 5%, under the condition of an average of \$362 billion in capital investment per year from now on.³² With other countries — such as China and the US — investing rapidly in R&D in the renewable energy sector,³³ the EU is at risk of losing its leading position as the major exporter of low-carbon technologies.

CEE governments have to realise that renewables can be a key factor in their attempts to keep energy prices in check in the medium and long term.

The opportunity to put Europe’s energy supplies on a sound footing is now. The EU’s 2030 energy and climate package failed to provide the necessary framework for the realisation of its full renewables potential. However, a truly integrated European energy market and a European grid infrastructure that supports the integration of renewables into the energy system will likely accelerate this process.

31. For example, China, which has overtaken the US as the world’s leading energy consumer, is projected to account for the largest share — 40% — of the growth in global energy consumption over the next 30 years, with its natural gas consumption expected to rise by more than more than 360% (see the [International Energy Outlook from the US Energy Information Administration, July 2014](#).) In Germany, energy prices were not driven up by subsidies for renewable energy but by massive exemptions from the renewable levy for more than 2,000 energy intensive companies, which led to a bill of €5.1 billion in 2014 that ordinary consumers will have to pick up.
32. [Bloomberg New Energy Finance 2030 Picture of World Energy, July 2014](#).
33. [Frankfurt School UNEP Study on Global Trends in Renewable Energy Investment, 2012, p.21](#)

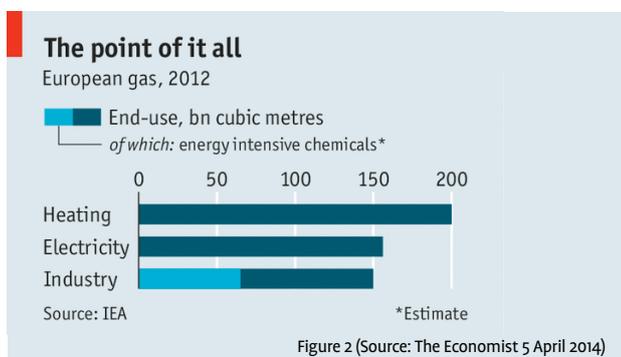
Energy Infrastructure

Energy security is fundamentally a cross-border issue. The ability to share energy — both gas and electricity — across borders in Europe increases the resilience to supply disruption. The EU’s October Council which decided on the EU’s climate and energy policy framework for 2030, therefore stressed “the fundamental importance of a fully functioning and connected internal energy market”. However, Europe’s pipeline and electricity grids are only developing very slowly. National gas companies, for example, are reticent to support cross-border interconnectors because a free flow of gas means more choice for consumers and hence lower prices. Because of pressure from the EU — notably through the “third energy package” of liberalisations — and growing political concerns over the reliability of Russian gas supplies, the situation has somewhat improved. New interconnectors have been built and pumps have been installed that can reverse the flow in transit pipelines. This makes it possible for EU members that are facing an energy crisis to access the storage capacity of other countries in the region.

The Baltic States could benefit disproportionately from new and improved gas infrastructure. Whilst each of them tends to preserve its own energy policies, interconnections and substitution mechanisms are currently being negotiated. Latvia’s energy security relies on its gas storage facilities³⁴ that belong to Latvijas gāze (Gas of Latvia), a private company the government cannot influence. Additional infrastructure for natural gas as a joint project by Poland and Lithuania, with an extension to Latvia (and its underground storage capacities), is going in the right direction. The LNG terminal in Lithuania also secures Estonia’s involvement in the project.

34. The Inčukalns underground gas storage facility can store 2.3 bcm active volume of natural gas, with an extra 1.8 bcm cushion, or technical gas that can theoretically be utilised in a serious emergency. If the cushion gas is extracted from the UGSF, it would take at least five years to restore the full functionality of the storage facility.

More and better electricity interconnectors could also help reduce the use of gas to produce electricity.³⁵ More interconnectors would also make it possible to transport power from renewable sources across countries, especially during periods when there is overcapacity. Because of the volatile nature of solar and wind power, it is absolutely crucial to have the infrastructure in place that allows the balancing of the electricity grid in times of particularly high or particularly low energy supplies from wind and solar power.³⁶ Grid infrastructure is therefore a key enabler for the integration of renewables into the energy system.



Yet, whilst interconnectivity is conducive to energy security, it also means that vulnerabilities within individual states can jeopardise the Europe power system as a whole. Thus, the EU's Energy Security Strategy has to place renewed focus on accelerating the development of cross-border electricity and gas infrastructure. This will both increase the resilience of the system and enable cross-border energy solidarity, including in terms of establishing market-based, cross-border trading of energy on a spot market basis.³⁷

An even larger portion of European gas is used for the heating sector (see figure 2). The obvious solutions to make the heating sector more sustainable are renewable heat and district heating. However, the compound effects of low efficiency of infrastructure, a lack of insulation of transit pipes, and a lack of efficient regulation have made this solution seem out of reach in many countries in the region.

Projects that genuinely integrate European energy markets, end energy isolation, or facilitate domestic renewable power sources can represent high-value investments in European energy security. By contrast, simply increasing gas import capacity represents poor value for money if the additional energy imported is ultimately wasted.

The State, the Market, and a Just Transition to a Prosperous Energy Future

Many CEE countries, and Poland in particular, depend heavily on cheap high-carbon energy so their industries can remain competitive. The German model – comprising a strong small and medium enterprises (SME) sector, competitive wages, and a highly skilled workforce – seems one worth emulating for economical success. A strong environmental or climate agenda, however, is frequently perceived as threatening because it would undermine the competitiveness of CEE economies.

In many CEE countries, energy production, supply, and distribution are in the hands of state-run utilities and big industry players. Because political and economic interests are frequently deeply intertwined, a transparent public debate on the real costs of fossil fuels and nuclear power is absent in many cases. In addition, any interference in the market tends to be considered a sin. This betrays the fact that the monopolistic and highly regulated markets of the Soviet past were never “free”, and subsidies for coal and nuclear power led to market failure because they prevented the implementation of the most affordable and sustainable energy solutions. In other words: if left to the market alone, we will likely see more rather than less coal until 2030 – but it will be imported instead of domestic coal.

35. At the moment, 31% of Europe's gas is used to produce electricity.

36. To make such a mechanism work, appropriate compensation mechanisms are required for the owners of gas-fired power stations that would have to go off the grid when there is access to cheap, renewable power.

37. [Nord Pool Spot electricity market](#) for the Nordic and Baltic States is an excellent example.

In Hungary, as well as in many other countries in the region, the state is the key actor in the energy sector and it has been tightening its grip increasingly since 2010, especially with the 2011 National Energy Strategy and the accompanying renationalisation of the power sector. By introducing specific sectoral taxes and lowering the price of electricity for consumers, the government has been continuously undermining investor confidence. This lack of predictability has already resulted in the departure of investors and strengthened state ownership and influence in the energy sector. A more sustainable energy policy is unlikely to arise from this constellation.

Such a concentration of power in the energy sector makes it easier for executives to benefit personally from their countries' dependency on Russia. Commentators from the CEE region frequently state that the situation invites corruption, incentivises state capture, and leads to a preference for concentrated electricity generation – such as coal and nuclear power – as opposed to energy efficiency and the local production of electricity from renewable sources.

At the same time, however, according to experts from the region, one of the major obstacles to a more positive attitude towards renewables is the perception that RES support schemes tend to incentivise corruption, which undermines the case in favour of more wind and solar power in the energy mix. Moreover, a frequent argument in CEE countries against renewables and energy efficiency measures is that they will lead to an increase in energy prices, thereby putting competitiveness at risk. The Czech Republic and Slovakia are notable examples. However, there is no simple cause and effect relationship between such measures and energy prices.

This is another reason a Just Transition is required. Stakeholders in government, industry, and trade unions need to decide in the coming years what kind of energy future they want for their countries. It could be a good idea to institutionalise such a decision-making process by forming multi-stakeholder “panels” that identify transformation needs and possible solutions.

Given the development of international markets and EU policies, it seems fair to assume that a future energy supply has to rely on an eventual phase-out of fossil fuels, ambitious reductions in energy consumption, more and better energy infrastructure, and more emphasis on the demand side. How to make the transition affordable and socially just should be decided at the national level, but financial support from the EU will be necessary to leverage these processes.

Why Energy and Climate Policy Belong Together

The EU stands to lose €190 billion – a net welfare loss of 1.8% of current GDP – due to climate-related damages if it fails to prioritise effective climate action by supporting an ambitious 2030 package. This is the key finding of a new report from the EU Commission's Joint Research Centre,³⁸ published in June 2014. This is in line with the latest United Nations Intergovernmental Panel on Climate Change (IPCC) report that clearly explains how the basic conditions for human prosperity – food, water, and energy security – will be undermined unless countries fundamentally change their approach to energy policy.

Climate change is not the most immediate political challenge at a time when it seems like we might be losing the hard-won peace that we have come to take for granted in Europe. However, there is no prospect of peace and prosperity in Europe and the rest of the world if governments are unable to secure the very foundations of a peaceful, just, and prosperous society: climate, energy, food, and water security. Climate insecurity, for instance, means that extreme weather events will wreak havoc, destroying supply chains with severe impacts far beyond the location of the disaster, and they will cost more than public budgets can shoulder; economic losses from crop failures caused by drought will require expensive food imports;³⁹ and volatile prices for imported fossil fuels can have severe economic implications. A government's legitimacy is at stake if it cannot provide for its population's most

38. [European Commission JRC study on the quantitative effects of climate change in Europe, June 2014](#)

39. The IPCC estimates long-run food price rises of up to 84% by 2050, and demonstrates the impact that extreme weather has had on food price. [Oxfam Issue Briefing on the EU's 2030 Energy and Climate Change Package, June 2014, p.3](#)

basic needs. The election of new political leaders will not be an answer to these problems if they have been left lingering for too long – the opportunity to act might well be lost for future governments.

The tools and technologies that enable us to transform our economies are available today. We are not doomed to accept runaway climate change and energy insecurity. Thus, EU members have to take collective responsibility for delivering both climate and energy security. Trading off one issue against the other is outright irresponsible. Ultimately, a Europe that consumes less energy thanks to large-scale energy efficiency measures and that relies on more indigenous renewables for its energy needs is also a geopolitically stronger Europe. This way, the EU could protect its competitive advantage whilst managing energy prices, improving energy security, tackling energy poverty, and addressing climate change. It is clear that the needs of high-carbon regions and workers require special attention so that sustainability can be achieved in the economic, the social, and the environmental realms. Policy mechanisms and dedicated funding need to be provided, so that the transition to a low-carbon and therefore energy secure economy will be a Just Transition.

Ultimately, implementing a low-carbon transition would also increase Europe's room for manoeuvre when dealing with Russia. Russia needs European customers as much as Europe needs Russian gas. Energy policy – just like climate policy – is always a tale of tangled destinies. Europe now needs the courage to act on this insight.

A European Energy Union that Deserves this Name – POLICY RECOMMENDATIONS

- Ensure that the European Energy Union focuses on affordable, secure, and green energy. Unless we start to think European about the way we produce, procure, distribute, and consume energy, we may have to face a major energy crisis sooner rather than later. It is essential, however, to base the Energy Union on the principle of Just Transition to ensure that high-carbon regions and workers are not losing out.
- Make use of the energy efficiency potential of CEE through the retrofitting of buildings and the modernisation of central heating systems and by introducing measures to reduce energy consumption through demand-side management technologies. Effective demand management measures should be based on well-placed financial incentives and information campaigns to lower energy demand and to make energy systems more efficient. This is also the best route to both re-establish a balanced, market-based energy relationship with Russia and to strengthen European economies.
- Make use of the “Juncker Investment Package” to secure investments in clean and resilient energy systems in CEE. Invest in and develop projects that genuinely integrate European energy markets, end energy isolation, and facilitate domestic renewable power sources. This could be facilitated through easier access to a range of European financial instruments, temporary relaxation of some State Aid rules for energy efficiency investments, and by creating conditionality around access to funding.
- Accelerate the development of cross-border electricity and gas infrastructure.
- Spread the idea in CEE that Europe’s energy and climate strategies must be complementary, not contradictory.

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This paper draws on discussion results from the expert group “Sustainable Energy Policy for ECE: A Vision for 2030”. The group is composed of leading, young professionals with diverse backgrounds in science, politics, economy, and civil society, mostly from East-Central European countries. Members of the group were: Reinis Āboltiņš (Researcher, Centre for Public Policy, Latvia), Ada Ámon (Director, Energiaklub Climate Policy Institute and Applied Communications, Hungary), Andrzej Ancygier (Research Fellow, Hertie School of Governance, Poland/Germany), Karlis Bukovskis (Deputy Director, Latvian Institute of International Affairs, Latvia), András Deák (Associate Fellow on Energy Security, Hungarian Institute of International Affairs, Hungary), Csaba Kákosy (Managing Partner at DAY ONE CAPITAL, former Minister of Economy and Transport, Hungary), Anna Kárníková (Deputy Chief-Advisor to the Prime Minister of the Czech Republic), Vojtech Kotecký (Campaign Director, Hnutí DUHA [Friends of the Earth], Czech Republic), Valdur Lahtvee (Director, Climate and Energy Program, Stockholm Environment Institute Tallinn Centre, Estonia), Andrej Nosko (Program Manager, Think Tank Fund, Open Society Foundations, Hungary), Mart Raamat (Project Manager, University of Tartu, Estonia), Robert Rybski (Lawyer, Climate and Energy Program, ClientEarth, Poland), Milan Šimoník (Energy Engineer, Head of the Energy Section, Green Party, Czech Republic), Kacper Szulecki (Assistant Professor, University of Oslo), Dariusz Szwed (Member of the Founder’s Council of the Zielony Instytut [The Green Institute] and chair of the Program Committee, Poland), and Selina Vancane (Chairperson of the Board at the Latvian Green Movement, EU Funds, climate and energy national coordinator at the CEE Bankwatch Network, Latvia). We warmly thank all participants for their valuable collaboration.

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