



The Global Warming Policy Foundation

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TESTIMONY TO THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS OF THE UNITED STATES SENATE

Hearing on the Super Pollutants Act of 2014 (S. 2911)

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I would like to thank the Chairman and the Committee for the opportunity to testify before your committee on the high risks and costs of unilateral climate policies.

I am the director of the Global Warming Policy Foundation (GWPF), a non-partisan think tank and a registered educational charity based in London. The GWPF, while open-minded on the contested science of global warming, is deeply concerned about the costs and other implications of climate policies currently being advanced in Britain and by other governments around the world.

Since the GWPF was launched in the House of Lords in 2009, it has been scrutinising the economic, social and industrial implications of unilateral climate policies of the UK and the EU.

Europe's climate strategy was founded on two key assumptions: first, that global warming was an urgent threat that needed to be prevented without delay and at all costs; and second, that the world was running out of fossil fuels, which meant oil and gas would become ever more expensive and renewable energy competitive. Both conjectures, however, turned out to be wrong, and as a consequence there is growing realisation within the EU that our unilateral climate policy is misguided and economically harmful.

The growing damage of this go-it-alone approach to the economic stability of Europe and the gradual abandonment of unilateralism is the subject of my testimony.

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EU unilateral climate policy since 2000

The European Union (EU) has long been committed to unilateral efforts to tackle climate change. For the last 20 years, Europe has felt a duty to set an example through radical climate policy-making at home.

European leaders were convinced that the development of a low-carbon economy based on renewables would give Europe a competitive advantage.¹

It was in this political climate that the EU heads of state and government launched the so-called Lisbon Strategy in March 2000, with the goal of making Europe "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion".

Three months later, in June 2000, the European Commission launched the European Climate Change Programme (ECCP), which developed the EU implementation of the Kyoto Protocol.

In 2002, the EU² approved the Kyoto Protocol and committed to cutting its collective greenhouse gas (GHG) emissions to 8% below 1990 levels by 2008-2012, as required by the Kyoto protocol.

Today, 14 years after the EU adopted these key policies, the economies of most EU member states are stagnating or in decline. Last week the OECD warned that the crisis-ridden EU poses a major threat to the world economy.³

Recent UN climate summits show that there is no prospect of a legally binding international commitment to cap, let alone reduce GHG emissions. In the absence of a binding agreement, any unilateral policies are bound to burden nations with heavy costs and regulatory burdens without having any effect on the trajectory of global GHG concentrations over the coming century.

Even though EU policy has managed to reduce CO₂ emissions domestically, this was only achieved by shifting energy-intensive and heavy industries overseas: to locations where there are no stringent emission limits, where energy and labour is cheap and which are now growing much faster than the EU. Most products consumed in the EU today are imported from countries without any binding CO₂ targets. It is no surprise that while the EU's domestic CO₂ emissions have fallen, if you factor in CO₂ emissions embedded in goods imported into EU, the figure remains substantially higher (Fig. 1).

¹ <http://www.renewableenergyfocus.com/view/928/wind-energy-gives-europe-a-competitive-advantage/>

² It was then still called the European Community.

³ <http://online.wsj.com/articles/eurozone-stagnation-poses-major-risk-to-global-growth-oecd-warns-1416911402>

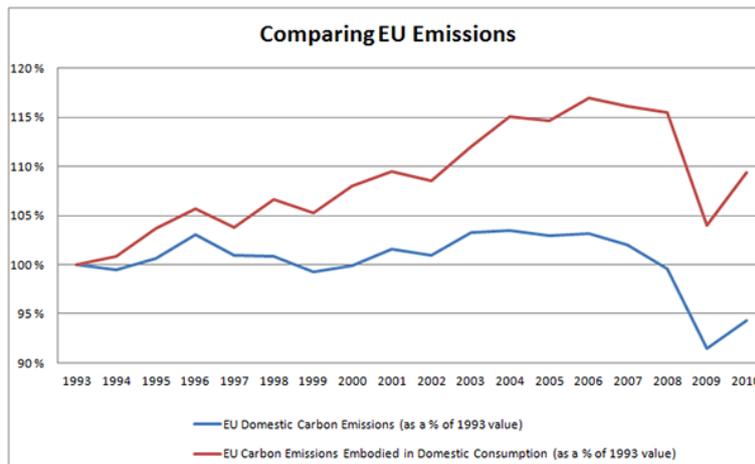


Fig. 1 EU CO2 emissions

EU CO2 emissions remain substantially higher when embedded emissions resulting from imported goods consumed in EU members states are factored in.⁴

EU policymakers naively assumed that Europe's main competitors would follow the shift from cheap fossil fuels to expensive green energy. This never happened and was never truly realistic given the existence of abundant and significantly cheaper options. Europe, as even the editors of the *Washington Post* acknowledged last year, "has become a green-energy basket case. Instead of a model for the world to emulate, Europe has become a model of what not to do."⁵

As energy prices continue to rise, Europe's remaining and struggling manufacturers are rapidly losing ground to international competition. European companies and investors are pouring money into the US, where energy prices have fallen to less than half of those in the EU, thanks to the shale gas revolution.

EU abandons unilateral climate targets

Early proclamations about the urgency of the global warming problem have run up against the reality of the near two-decade-long pause in global surface temperature rises, which was not predicted by climate models. In part as a result, climate change has dropped quite significantly down on the international agenda in recent years.

At the very least, the consistent overestimation of recent warming trends by climate models, a problem openly acknowledged in the last IPCC report, raises the possibility that model-based estimates of the environmental impacts of carbon

⁴http://www.footprintnetwork.org/en/index.php/GFN/blog/deconstructing_carbon_before_un_climate_summit

⁵ http://www.washingtonpost.com/opinions/europe-is-becoming-a-green-energy-basket-case/2013/04/21/4b1b81d0-a87e-11e2-b029-8fb7e977ef71_story.html

dioxide emissions are biased high, and that attempts to portray climate change as an imminent emergency are not based on sound empirical evidence.

Another key assumption of European climate policy was that a legally binding climate treaty would be reached and that the EU would greatly benefit from its implementation around the world. In reality, a binding agreement proved to be impossible and is unlikely to be forthcoming anytime soon.

In the meantime, the EU is stuck with extremely costly unilateral targets - an outcome described by the British government's 2009 impact assessment as the "worst case scenario, which would [raise serious questions about] the benefits of on-going unilateral action" and which is unlikely to be "sustainable in practice".⁶

Due to the failure of the international community to agree a follow-up treaty to the Kyoto Protocol, there is no longer any enthusiasm for new unilateral climate targets among most countries in central and eastern Europe. The governments of Poland, Hungary, the Czech Republic, Slovakia, Romania, Bulgaria, Latvia and Lithuania are all opposed to adopting any new CO₂ targets in the absence of a binding UN agreement.

Last year, Antonio Tajani, the EU's outgoing Industry Commissioner, warned that Europe's unilateral climate policies were pushing electricity costs to uncompetitive levels:

We face a systemic industrial massacre. We need a new energy policy. We have to stop pretending, because we can't sacrifice Europe's industry for climate goals that are not realistic, and are not being enforced worldwide.⁷

Gunther Oettinger, the EU's outgoing energy commissioner, declared in September that the EU should not adopt new binding CO₂ targets unless all major emitters would do likewise:

If there is no binding commitment from countries as India, Russia, Brazil, the US, China, Japan and South Korea, whose governments are responsible for some 70% of global emissions, I think it is not really smart to have a -40% target...If we are too ambitious and others do not follow us we will have an export of production and more emissions outside the EU.⁸

Oettinger's proposal was adopted on 23 October, when EU leaders agreed a conditional CO₂ reduction target of 40% by 2030 - provided there is a legally

⁶ http://www.openeurope.org.uk/Content/Documents/Rotten_Foundations_-_Open_Europe_Report.pdf

⁷ <http://www.telegraph.co.uk/finance/financialcrisis/10295045/Brussels-fears-European-industrial-massacre-sparked-by-energy-costs.html>

⁸ <http://www.theguardian.com/environment/2014/sep/25/europe-should-only-cut-carbon-if-world-agrees-paris-climate-deal-eu-energy-chief>

binding UN climate treaty. A special “flexibility clause” was added to the final text, allowing the Council to reassess its conditional target after the UN summit.⁹

The EU’s post-2020 targets for greenhouse gas emissions and renewable energy are contingent on a legally binding global agreement at the UN climate conference in Paris in 2015. The chances of such an agreement, however, are close to zero. China and India have made their support for such a deal conditional on a legally binding climate finance package of \$100 billion per year by 2020 as promised by President Obama at the UN climate conference in Copenhagen in 2009.¹⁰

Loss of competitiveness

Energy prices for industry

European governments have advanced the most expensive forms of energy generation at the expense of the least expensive kinds. No other major emitter has followed the EU’s aggressive climate policy and targets.

EU members states have spent about €600 billion (\$882bn) on renewable energy projects between 2005 and 2013, according to Bloomberg New Energy Finance.¹¹ Germany’s green energy transition alone may cost up to €1 trillion by 2030, the German government recently warned.¹²

As a result of these policies, energy prices have risen sharply in Europe (Fig. 2).¹³

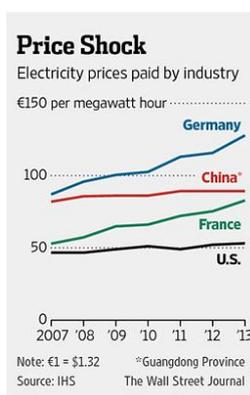


Fig 2. Industrial energy price trends

Source *The Wall Street Journal*, 26 August 2014

⁹ European Council Agreement: 2030 Climate And Energy Framework.
http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/145356.pdf

¹⁰ <http://www.foxnews.com/world/2014/09/24/climate-change-china-rebuts-obama/>

¹¹ Michael Liebreich, Bloomberg New Energy Finance Summit, New York 23 April 2013.

¹² <http://www.reuters.com/article/2013/02/20/us-germany-energy-idUSBRE91J0AV20130220>

¹³ <http://online.wsj.com/articles/germanys-expensive-gamble-on-renewable-energy-1409106602>

Electricity prices in Europe are now more than double those in the USA (Fig. 3).¹⁴

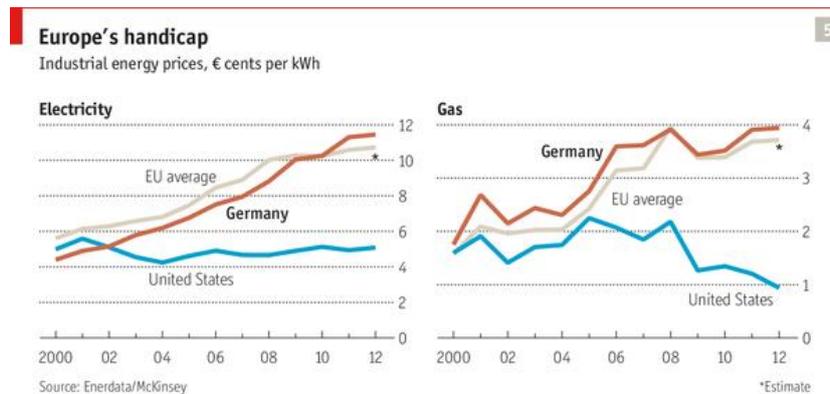


Fig 3. Industrial electricity and gas price trends

Source: *The Economist*, 15 June 2013

Lower gas and electricity prices in 2012 in the United States relative to Europe equated to estimated savings of close to \$130 billion for US manufacturing industry as a whole. The IEA estimates that electricity prices in the European Union will remain around twice those in the US in 2035.¹⁵

High energy prices lead to loss of competitiveness

Europe's manufacturers are rapidly losing ground to international competition. Energy price differentials impact industrial competitiveness significantly. In recent years, the US, together with key emerging economies, has increased its export market share for energy-intensive goods, while the EU and Japan have seen a sharp decline (Fig. 4).¹⁶

¹⁴ <http://www.economist.com/news/special-report/21579149-germanys-energie-wende-bodes-ill-countrys-european-leadership-tilting-windmills>

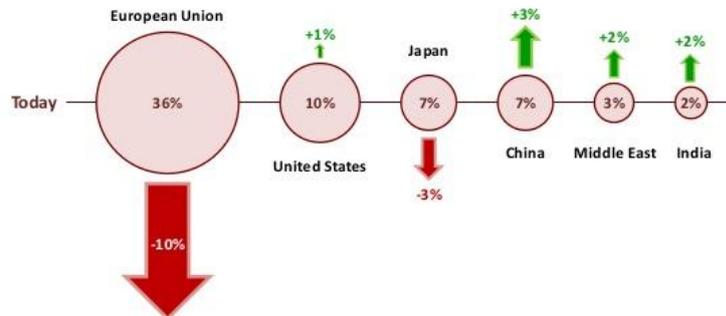
¹⁵ http://www.worldenergyoutlook.org/media/weowebiste/factsheets/WEO2013_Factsheets.pdf

¹⁶ <http://www.gastechnews.com/unconventional-gas/iea-outlook-highlights-role-of-gas-prices-in-competitiveness/>

An energy boost to the economy?

WORLD
ENERGY
OUTLOOK
2013

Share of global export market for energy-intensive goods



The US, together with key emerging economies, increases its export market share for energy-intensive goods, while the EU and Japan see a sharp decline

© IEA 2013

Fig. 4: Global market share for energy-intensive goods

Source: *World Energy Outlook 2013*

The situation is expected to become worse. By 2020 energy taxes may will account for half of UK energy intensive manufacturers' energy bills. The cost of government policy on energy prices paid by UK steelmakers is expected to be over 280% more than the equivalent cost for their American and Russian competitors.¹⁷

Energy intensive industry expected to decline in the EU

Energy costs are of crucial importance to energy-intensive industries such as chemical, cement, steel and glass manufacturers and oil refiners. The IEA believes that the EU and Japan will see a strong decline in their export shares in these products over time.¹⁸

The EU's key chemical industry is in sharp decline, facing extinction

The chemical industry is one of the EU's most successful sectors, boasting €527 billion in sales in 2013, making it the second-largest global producer.

High energy costs over the past two decades have contributed significantly to the loss of the EU chemical sector's competitiveness in the global export market. Lost competitiveness has eaten into the EU share of global exports, which fell to 21% in 2012 from 31% in 1991. Due to the erosion of competitiveness, the EU has slipped

¹⁷ www.eef.org.uk/~media/38010cfb140147b3ab526d6f5832cd87.pdf

¹⁸ http://www.worldenergyoutlook.org/media/weowebiste/factsheets/WEO2013_Factsheets.pdf

from third to fourth out of seven leading global chemical exporters with regard to absolute levels of competitiveness.¹⁹

In a letter to the president of the European Commission, Jim Ratcliffe, the chairman and CEO of the Ineos chemical group, recently warned that the European chemicals industry is at risk of being wiped out in a decade, with the loss of 6 million jobs if uncompetitive energy prices continued to drive the rapid closure of Europe's chemical plants. Ratcliffe pointed out that in Britain alone 22 chemical plants have closed down since 2009 and not a single new one has been built:

I can see green taxes, I can see no shale gas, I can see closure of nuclear, I can see manufacturing being driven away. It's not looking good for Europe, we are rabbits caught in the headlights, and we have got our trousers down.²⁰

While Europe's high cost policies have become an existential threat to the long-term survival of the chemical industry, cheap energy is reviving the fortunes of the industry in the US (Fig. 5). The shale revolution has significantly lowered energy costs, spurred international demand for goods derived from chemicals and has created a huge competitive advantage. US industry has gone from a trade deficit to a \$3.4 billion surplus. By 2018, the trade surplus could reach \$30 billion, according to some estimates - a tenfold increase in five years.²¹



Fig 5. US chemical industry cost advantage

Source: *American Chemistry Matters*, 30 October 2014²²

¹⁹ <http://www.cefic.org/Documents/PolicyCentre/Competitiveness/Oxford-Study-2014.pdf>

²⁰ <http://www.telegraph.co.uk/finance/newsbysector/industry/10681902/European-chemicals-industry-could-be-wiped-out-in-a-decade-says-Ineos-boss.html>

²¹ <http://blog.americanchemistry.com/2014/10/u-s-manufacturing-exports-surg-ing-due-to-shale-gas/>

²² <http://blog.americanchemistry.com/2014/10/u-s-manufacturing-exports-surg-ing-due-to-shale-gas/>

Steep loss of competitiveness in the steel industry

Energy costs alone represent up to 40% of the total costs of a steel plant in Europe, significantly more than in the USA, Russia, the Middle East or China. This is driving global steel investment outside the EU, where there are no such targets or green taxation to reduce CO₂ emissions.

The European steel industry employs 335,000 people. ArcelorMittal Europe estimates that their European steelmaking operations are at a \$1 billion energy-cost disadvantage compared with their counterparts in the USA. Aditya Mittal, its CEO, has recently warned that the cost of implementing the EU's 2030 climate targets unilaterally would make European steelmaking unviable. He estimates that the additional costs for the steel sector between 2020 and 2030 would be around €58 billion (\$73.76 bn) of which ArcelorMittal would have to bear €20 billion, or an average of €2 billion a year, far exceeding ArcelorMittal's European profits.²³

While global steel output is increasing, European steel production is in steep decline and continues to lose competitiveness. The EU's share of global steel production has more than halved in recent years, falling from 22% in 2001 to 10% in 2013 (Fig. 6).²⁴

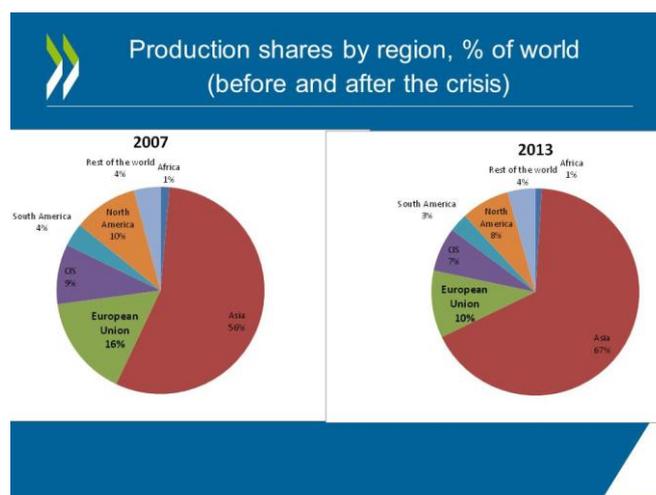


Fig 6. Outlook for the steel market

Source: OECD, March 2014

European manufacturing firms investing in the US

There has been a significant increase in the number of European manufacturers investing in the USA. It is driven by exasperatingly complex and costly environmental and other regulations, and the widening gap between energy and electricity costs in Europe and the USA. Analysts believe that the growing

²³ <http://online.wsj.com/articles/saving-european-steel-and-the-environment-too-1414001857>

²⁴ <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=12706&no=3>

investment of European companies in North America is in its infancy and will continue so long as the energy price gap remains significant.²⁵

BASF estimates that it could save \$688 million/year in energy costs alone if its German chemical plants were situated in the USA rather than in Germany. The company has doubled its capital investment in the USA to \$1 billion/year in 2013 and has earmarked an additional \$4 billion in capital investment through 2017.

The industrial base is being lost

Governments are increasingly concerned about the growing threat that high energy prices pose to Europe's industrial base. The gap in competitiveness was the central theme of a summit of EU heads of government in Brussels in May 2014.

The data on the share of the EU manufacturing output on a global scale show that the share of manufacturing in Europe (and the US) has been consistently decreasing, while manufacturing in China has been on the rise (Fig. 7).

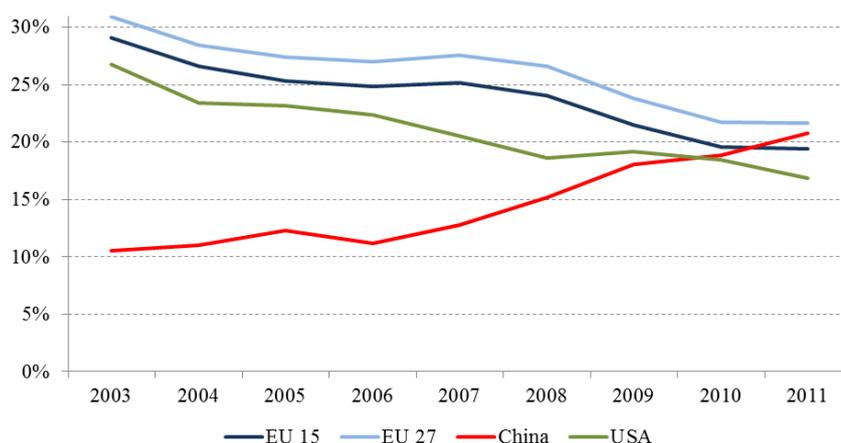


Fig. 7 Shares of global manufacturing output (before the impact of the US shale revolution)

Source: UN National Accounts Main Aggregates Database, European Commission, September 2013.²⁶

High energy prices will further cut into the EU's global share of manufacturing. In sharp contrast, US exports of manufactured products have risen by 6 percent since the start of America's shale revolution, according to a recent report by the International Monetary Fund (IMF). It is clear evidence that cheap energy - already a strong catalyst for chemical industry export growth - is benefiting U.S. manufacturing.²⁷

²⁵ <http://www.agracel.com/481-2014-trends-that-excite-agracel-1european-manufacturing-firms-moving-to-usa/>

²⁶ http://europa.eu/rapid/press-release_MEMO-13-815_en.htm

²⁷ See more at: <http://blog.americanchemistry.com/2014/10/u-s-manufacturing-exports-surg-ing-due-to-shale-gas/>

Absurd climate policy: cheap coal, expensive gas

Of all the unintended consequences of EU climate policy perhaps the most bizarre is the detrimental effect of wind and solar schemes on the price of electricity generated by natural gas.

Many gas power plants can no longer operate enough hours. They incur big costs as they have to be switched on and off for back-up. When wind and solar output increases, energy prices become more volatile which adds to the costs.

The increasing requirement of utilities to back-up renewable power has undermined the profitability of natural-gas-fired plants in much of Europe, leading to the widespread shutdown of combined-cycle gas turbine plants, which are among the cheapest form of low-carbon power generation.

Every 10 new units' worth of wind power installation has to be backed up with some eight units' worth of fossil fuel generation. This is because fossil fuel plants have to power up suddenly to meet the deficiencies of intermittent renewables. In short, renewable do not provide an escape route from fossil fuel use without which they are unsustainable.²⁸

Gas-fired power generation has become uneconomic in the EU, even for some of the most efficient and least carbon-intensive plants. At the end of 2013, 14% of the EU's installed gas-fired plants stood still, had closed or at risk of closure. If all gas plants currently under review were to close, this would amount to 28% of current capacity by 2016.

Almost 20 per cent of gas power plants in Germany have already become unprofitable and face shutdown as renewables flood the electricity grid with preferential energy. To avoid blackouts, the government has to subsidise uneconomic gas and coal power plants. Already half of the 28 EU countries have in place or are planning to subsidise fossil fuel power plants to keep the lights on.

Ironically, the EU's flagship climate policy, its Emissions Trading Scheme, has led to the collapse in carbon prices which is making coal-fired power plants much more economical than gas-fired power plants.

As a result, EU power utilities have been forced to write down their assets, with some €15 bn in 2013 alone. Instead of building new power plants in the EU, major utilities are investing in thermal power plants outside of the EU.²⁹

Paying for availability for a substantial proportion of conventional power plants has thus become unavoidable in countries with large shares (10% or more) of renewable electricity.

²⁸ <http://www.thegwpf.org/images/stories/gwpf-reports/hughes-windpower.pdf>

²⁹ <http://notalotofpeopleknowthat.wordpress.com/2014/06/05/eu-energy-markets-in-crisis/>

If you think this cannot happen in the US where gas prices are low, think again. Low gas prices are an unambiguous advantage for energy-intensive industries and existing power plants; but they cannot solve the high risk of investment in new power plants that are at risk of becoming inefficient and uneconomic as a result of renewable energy targets.

New US gas-fired power plants face the same economic problems, despite low gas prices. As the share of intermittent renewables generation increases in the US, consumers will find that they have to pay through similar mechanisms to insure adequate back-up. And these mechanisms are extremely expensive as the European experience shows.

Essentially, twice as much generating capacity is needed just to deal with the intermittency of wind and solar energy. In some US state with high renewable mandates, this inevitable rise in cost could happen fairly soon.

While gas for power generation remains cheap in the US because of the shale revolution, it is only cheap for power generation so long as gas plants can run uninterrupted and for long periods of time. If they have to be increasingly switched on and off because of high levels of intermittent renewable, gas plants will be displaced by cheap coal sooner than most people think - just as is happening in Europe right now. Of course, CO2 emissions would rise quickly and significantly too.

Rising energy poverty

According to Peter Lilley, a British MP and member of the Parliamentary Energy and Climate Change Committee, the UK's 2008 Climate Change Act is perhaps the most costly government programme since the introduction of the Welfare State, with an impact of over £17,000 per household. The revised official impact assessment for the Climate Change Act 2008 estimated the cost at up to £430 (\$675) billion. This excludes transitional costs which it says could be 1.3-2.0% of GDP up to 2020, and the cost of driving industry abroad, which it says could be significant.³⁰

Open Europe estimates that in 2013, as a direct result of the EU's unilateral climate policies, the average energy bill for a medium-sized business was increased by 9% (£130,000/ \$200,000) due to EU regulations or UK implementation of EU-defined targets. By 2020, EU-related climate regulations or targets will have increased medium sized firms' bills by 23% (£350,000/\$550,000).³¹

In the EU, hundreds of billions are being paid by ordinary families and small and medium-sized businesses in what is undoubtedly one of the biggest wealth transfers from poor to rich in modern European history. Rising energy bills are

³⁰ http://www.thegwpc.org/content/uploads/2012/10/Lilley-Stern_Rebuttal3.pdf.

³¹ http://www.openeurope.org.uk/Content/Documents/Rotten_Foundations_-_Open_Europe_Report.pdf

dampening consumers' spending, a poisonous development for a continent still struggling to recover from the financial crisis.

Germany's renewable energy levy, which subsidises green energy production, rose from €14bn to €20bn in just one year as a result of the fierce expansion of wind and solar power projects. Since the introduction of the levy in 2000, the electricity bill of the typical German consumer has doubled.

As wealthy homeowners and business owners install wind turbines on their land and solar panels on their homes and commercial buildings, low-income families all over Europe have had to foot the skyrocketing electric bills. Many can no longer afford to pay, so the utilities are cutting off their power. The German Association of Energy Consumers estimates that up to 800,000 Germans have had their power cut off because they were unable to pay the country's rising electricity bills.³²

Conclusions

On costly green energy policies “Europe made the wrong bet”, the *Financial Times* warned on Friday. “There are no energy-intensive investments taking place in Europe now,” the FT quoted Dieter Helm, professor of energy policy at the University of Oxford. “Why would you locate a new investment in a place with both high labour costs and high energy costs, many of which are self-inflicted?”

The EU's unilateral climate policy is absurd: first consumers are forced to pay ever increasing subsidies for costly wind and solar energy; secondly they are asked to subsidise nuclear energy too; then, thirdly, they are forced to pay increasingly uneconomic coal and gas plants to back up power needed by intermittent wind and solar energy; fourthly, consumers are additionally hit by multi-billion subsidies that become necessary to upgrade the national grids; fifthly, the cost of power is made even more expensive by adding a unilateral Emissions Trading Scheme. Finally, because Europe has created such a foolish scheme that is crippling its heavy industries, consumers are forced to pay even more billions in subsidising almost the entire manufacturing sector.

In the last few years, major economies such as Canada, Australia and Japan have begun to realise the futility of going it alone and have retreated from or abandoned their climate policies and CO₂ targets. Now even the EU has decided to walk away from its go-it-alone approach and has adopted a conditional climate pledge. It has burdened European taxpayers and businesses with astronomical costs while shifting its heavy industry and CO₂ emissions to other parts of the world.

Europe's climate policy failure demonstrates beyond doubt that its unilateralism has been a complete fiasco. The lessons of this self-defeating debacle are clear: don't make the same mistake. Policymakers would be well advised to heed this warning.

³² <http://www.spiegel.de/international/germany/high-costs-and-errors-of-german-transition-to-renewable-energy-a-920288.html>