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State aid for energy: Climate action is more important than the single market

By Stephen Tindale

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- ★ The objectives of deepening the single energy market, respecting member-state competence over the energy mix and protecting the climate can conflict. Where they do, European institutions should give priority to decarbonisation.
- ★ Member-states and EU institutions should concentrate on implementing the Commission's new state aid guidelines for energy and the environment, rather than trying to improve them further. Regulatory stability would facilitate the investment needed to decarbonise Europe's energy system.
- ★ The Commission should stop trying to force member-states to subsidise renewable energy projects outside their borders, and member-states should accept the Commission's decision to approve the UK's state aid application for nuclear power.

Introduction

The EU wants to cut greenhouse gas emissions, prevent distortions in the single market and leave decisions about the energy mix at the national level. Something has to give. Low-carbon energy, delivered at the member-state level, will not happen without some form of financial support. But subsidies can distort markets so must be consistent with European state aid rules.

The European Commission published new guidelines on energy, environment and state aid in April.[1] These guidelines strike a sensible balance between the objectives of competition, innovation and decarbonisation. This policy brief summarises the new guidelines. It considers the implications of the recent decision by the European Court of Justice (ECJ) that national governments are not obliged to subsidise renewable energy schemes outside their territory; and of the recent Commission clearance of the UK's contract with EDF Energy to build a new nuclear power station in England. The policy brief concludes that the state aid guidelines offer a sensible approach to balancing differing objectives, and that EU institutions should refrain from tinkering with them: any attempts to change them would create regulatory instability, making investments in low-carbon technology more risky.

Continuous revision

The Commission has sole competence over state aid; the Competition Commissioner is supposed to take decisions in a quasi-judicial way, based on clear rules. The Commission publishes guidelines of what these rules are. National governments or private organisations which are financially affected by Commission decisions can take the Commission to the European Court of Justice (ECJ) to challenge its decisions.

The rules on state aid for energy projects have been under continuous revision for the last decade. In 2003, the ECJ ruled that support for organisations that provide

1: European Commission, 'Guidelines on state aid for environmental protection and energy 2014-2020', April 2014.

"services of general economic interest" did not constitute state aid, as long as the recipient had a public service obligation, the amount of financial support was not too high and the process was transparent.[2] The Court recognised that there is public interest in the supply of energy. In 2008, the Commission published guidelines on state aid for environmental protection, which encouraged member-states to support renewable energy, combined heat and power (CHP) and district heating.[3] In 2012, the Commission published proposals for state aid modernisation, promising to focus on the internal energy market and to speed up decision-making.[4] And in April 2014 it published guidelines for environmental protection and energy.[5] These came into force in July, and are intended to guide Commission decisions until 2020. State aid rules apply to any project where the investment aid exceeds €15 million, but do not apply to research, development and initial deployment of new energy technologies.

The modernisation, extension and decarbonisation of Europe's energy system will inevitably cost hundreds of billions of euros. In order to minimise regulatory uncertainty and thereby reduce the risk and cost of the investment, European institutions should now focus on implementation rather than revision of the rules. In particular, the Commission should speed up decision-making, as it promised to do in 2012 and again in April 2014. It should take most state aid decisions within three months of the national government making the application and, where this is not possible, explain the reasons for the delay and set out a revised timeline.

"European institutions should now focus on implementation rather than revision of the rules."

The new guidelines

The Commission's new guidelines outline a rational approach to projects of common European interest. The Commission will use seven criteria in deciding whether public financial support meets state aid rules:

★ A contribution to a well-defined objective of common interest;

★ The need for state intervention: evidence that the market alone cannot deliver;

★ How appropriate the aid is: member-states should not use inefficient or counter-productive policy tools;

★ Whether the aid has an effect on incentives: the aid causes additional activity that would not exist without it;

★ How proportional the aid is: it should be kept to a minimum;

★ Whether the aid is designed to have the smallest possible impact on competition and trade between member-states;

★ Transparency: sufficient information should be made public to enable observers to judge whether the state aid is needed, too generous and so on.

The guidelines state that the Commission will place great emphasis on the way in which projects are selected, to ensure that governments choose beneficiaries who can deliver the energy or environmental objectives in the most cost-effective way. Aid is supposed to be given following a competitive process such as an auction, excepting innovative cases in which competition is probably inappropriate. The Commission is trying to make national energy subsidies more market-based.

The new guidelines have already prompted an important policy switch in Germany, which is Europe's biggest subsidiser of renewables. First, Berlin will end the feed-in tariffs that provide renewable energy producers with guaranteed revenues (irrespective of market demand and conditions), and introduce an obligation for such producers to sell their green power direct to the grid at market price. Subsidy will come in the form of a sliding-scale premium to top up whatever producers earn in the market. Second, developers of new renewable projects will have to compete, by bidding at auction, for this subsidy. So the guidelines have already had a positive impact and made the low-carbon transition more economically efficient in Europe's largest economy. However, the full impact of the guidelines will depend on how DG Competition and the new Competition Commissioner, Margrethe Vestager, interpret them.

2: European Court of Justice, case C-280/00 Altmark Trans, 2008.
3: European Commission, 'Community guidelines on state aid for environmental protection', 2008.
4: European Commission, 'State aid modernisation', May 2012.
5: European Commission, 'Guidelines on state aid for environmental protection and energy 2014-2020', April 2014.

How will the Commission interpret the guidelines?

It should not be difficult to persuade the Commission that low-carbon projects are in the common European interest. Climate change affects the whole of the continent – indeed the whole world. And the EU has promised to reduce its greenhouse gas emissions by at least 80 per cent by 2050. What is more, the Ukraine crisis has underlined the fact that energy security is also a common European interest. EU's energy security could be increased, for example, by building the Trans-Adriatic pipeline to bring gas from Azerbaijan to Europe, or by constructing more terminals for the import of Liquified natural gas (LNG) from countries such as Qatar and the USA. A cheaper way would be for the EU to import coal from countries other than Russia, or to burn its own. However, increased use of coal (from whatever source) without carbon capture and storage (CCS) would be inconsistent with the EU's agreed decarbonisation objective. So would increased use of LNG, because the process of turning gas into liquid for transport and then back into gas for combustion increases the life-cycle emissions significantly.

Increased use of renewable energy, combined with better electricity storage technology, is the best solution to both the energy security problem and the greenhouse gas problem. However, it will take many decades for the EU to move from the current proportion of energy which it gets from renewables – less than 15 per cent – to a level of renewable energy which makes the use of fossil fuels unnecessary. So low-carbon bridge technologies are necessary in order to protect the climate. The EU can only increase its energy security and meet its climate objective at the same time if it makes progress with the demonstration and deployment of CCS on both coal and gas power stations. CCS projects are therefore very clearly projects of common interest.

The guidelines accept that state aid measures can correct market failures. Market failure is a major barrier to climate action. Indeed, Nicholas Stern, lead author of a review of the economics of climate change,[6] has described climate change as "a result of the greatest market failure the world has seen".[7] Stern points out that it would be less expensive to invest now in decarbonisation than to continue emitting high levels of greenhouse gasses and then pay for the consequences of uncontrolled climate change. But, his report demonstrates, the market does not do this because carbon emissions do not have a price in most countries, and even when they do (as in the EU), the price is not high enough to drive investment into low-carbon options.

How should this market failure be overcome? Most economists prefer the use of market mechanisms. These are technology-neutral. They give energy producers an incentive to invest in low-carbon energy, and consumers an incentive to use less energy. The best way to decarbonise energy, at least cost, would be to set a carbon tax at a rate high enough to make high-carbon electricity from coal more expensive than lower-carbon electricity from renewables or nuclear. It would be possible for the EU to introduce such a carbon tax. But this will not happen. Tax proposals require unanimity in the Council of Ministers. Poland would block a carbon tax proposal due to its reliance on coal. The UK and others would block it on subsidiarity grounds.[8]

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Knowing this, the Commission proposed the Emissions Trading System (ETS), which sets a cap on greenhouse gas emissions from power generation and industrial sectors, and allows operators in these sectors to buy and sell allowances. A cap-and-trade system does not require unanimity, so it was accepted by the Council and has been operating since 2005. However, the system has resulted in a current price of around €6 per tonne of carbon dioxide, far too low to make a significant impact on investment decisions. For that, the price would have to rise to at least €30, and investors would need confidence that the price would not fall significantly. This could be achieved by introducing a price floor, and agreeing that the floor would increase each year.[9] But this would be very hard to get through the Council of Ministers, as it would come close to being a tax. Instead, the Commission proposed, and Council and Parliament have now agreed, various measures to stabilise the carbon market. However, these are unlikely to raise the carbon price significantly. PwC's annual review of carbon markets, published in May 2014 (after the Commission had made its proposals but before they were agreed by Council and Parliament), found that only 27 per cent of respondents believed that these measures would be sufficient to stimulate low-carbon investment.[10]

In the absence of a significant carbon price, the EU should regulate carbon emissions instead.[11] This regulation should be technology-neutral, based on the Emissions

6: Nicholas Stern, 'Stern review on the economics of climate change', HM Treasury, London, 2006.

7: Alison Benjamin, 'Stern: Climate change a 'market failure', *The Guardian*, November 29th 2007.

8: Jacques Delors proposed a carbon tax when he was president of the Commission, but this was rejected by the Council because of the UK and many others objecting that taxes are a matter for national governments.

9: Stephen Tindale, 'Commission should move to structural reform of the ETS', CER, May 2013.

10: PwC ,'The future of carbon markets', May 2014.

11: Stephen Tindale, 'Europe should regulate to promote carbon capture and storage', CER, October 2013.

Performance Standards used by some US states, Canada and the UK and now being introduced by the US federal government. An Emissions Performance Standard limits the amount of greenhouse gases that power plants can emit, per unit of electricity generated. Renewables, gas, nuclear power and coal with CCS will all meet this limit; coal or lignite without CCS will not.

This approach would make EU climate policy effective. But it could also lead to insufficient power generation across Europe, because it would not necessarily deliver enough low-carbon energy to replace the high-carbon coal. Other forms of power generation are currently more expensive than coal is. In a free market, this would not present an economic problem: there will always be a market for energy, so companies would invest in expensive, low-carbon technologies, and make a profit by charging higher prices.

However, the European energy market is not a free market, and governments try to keep energy prices down in various ways. In late 2012, the Commission reported that only nine member-states did not have regulated retail energy prices.[12] Twelve had regulated prices for both household and industrial customers;[13] six had regulated prices for households.[14] Even in countries with unregulated prices, industrial and social policy concerns play major roles in climate and energy policy. For example, Germany gives large energy tax exemptions to heavy industry in order to protect competitiveness; this leads to a higher burden on German households, which is leading to increasing public opposition to the *Energiewende*, Germany's energy transformation. The UK takes the opposite approach: London levies a carbon tax on commercial and industrial energy customers, but households are exempt. Furthermore, the opposition Labour Party is promising energy price regulation if it wins the 2015 general election.

The conclusion must be that European governments are very unlikely to allow energy prices to rise enough to make investments in low-carbon projects profitable without some public financial support. The Commission is well aware of the industrial, social and political constraints on what governments can do in the energy market. So it should not be difficult to convince the Commission that state aid for low-carbon energy projects – in addition to regulation – is necessary to address a market failure.

"The European energy market is not a free market, and governments try to keep energy prices down in various ways."

So the first two of the Commission's stated criteria, a project of common interest and the need to address market failure, should not present significant obstacles to sensible low-carbon projects. The remaining five criteria – appropriateness; incentive effect; proportionality; impact on competition; transparency – are more case-specific. It is therefore hard to predict how the Commission will interpret them. The British government has already received two significant state aid clearances since the new guidelines came into force. These applications were submitted before July, so were assessed under the old guidelines, which placed less emphasis on decarbonisation. Nevertheless, the decisions provide an insight into current Commission thinking.

The UK: Coal and nuclear subsidies

On July 23rd 2014, the Commission accepted London's plans to pay fossil fuel and nuclear generators to keep sufficient capacity in reserve, when renewable energy from wind or solar plants are not producing any.[15] Even hydro-electric plants generate less in dry years. Biomass is not intermittent, since it can be burnt whenever needed. But biomass stations will probably be used as much as possible in order to meet renewable energy targets, so there will not be extra biomass capacity to use when wind, solar or hydro are not available.

The Commission is pushing for an expanded and improved European grid, which will include the Baltic States (mainly connected to the Russian grid, apart from one interconnection from Estonia to Finland), Cyprus and Malta (currently unconnected to any grid) and increased capacity from mainland Europe to the UK and Ireland. A higher quality Europe-wide grid will lessen, but not remove, the problem of intermittency. Electricity storage, in batteries, hydrogen or compressed air, must be expanded. But this will take years, probably decades. Until this has been achieved, some payments to keep generation capacity operational and available to meet peak demand will be necessary.

Such capacity payments will go to coal and gas power stations. At the G20 summit in 2009, the EU, France, Germany, Italy and the UK promised to end inefficient fossil fuel subsidies. Little progress has been made since then, and there is no agreed timetable.[16] Allowing new

12: Austria, Czech Republic, Germany, Finland, Luxembourg, the Netherlands, Slovenia, Sweden, UK.
13: Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, France, Hungary, Malta, Poland, Portugal, Romania, Slovakia.
14: Belgium, Greece, Ireland, Latvia, Lithuania, Spain.
15: European Commission, 'State aid: Commission authorises UK capacity market electricity generation scheme', July 23rd 2014.
16: Stephen Tindale, 'International targets should focus on money, not targets', CER, September 2014.

subsidies to gas stations may be consistent with this commitment, because gas generation is a necessary back-up to intermittent renewable generation, and will remain so until better ways to store electricity are developed. Gas stations are better suited to being held in reserve to meet peak demand, because they can be turned on more quickly than coal stations. And coal stations emit twice as much greenhouse gas pollution per unit of electricity as gas power stations do, so subsidies to coal stations contribute to the market failure to decarbonise. Therefore, capacity subsidies to gas stations are not inefficient, but those to coal stations are.

Commenting on his decision to give state aid clearance to the UK's capacity market, the then Competition Commissioner Joaquín Almunia commended the UK government for having taken a technology-neutral approach.[17] However, this comment was not based on the guidelines, which do not require technology neutrality. Indeed the Commision recognised that aid for environmental purposes will by its very nature tend to favour environmentally friendly products and technologies at the expense of other, more polluting ones.

The same day that the Commission authorised the UK's capacity market payments, it also accepted London's application to subsidise low-carbon generation through Contracts for Difference (CfDs): long-term contracts which guarantee the income that clean energy generators will receive. CfDs are not technology neutral: they treat technologies in different ways depending on whether they are established, less established or innovative. The Commission accepted the rationale that different technologies should be given different levels of support. It should also accept – indeed promote – the rationale that technologies should be given different levels of support for climate policy reasons. So the Commission should have rejected the UK's capacity market application on the grounds that the UK government proposed to offer new and inefficient subsidies to coal.

It should also have rejected the UK's capacity market proposal to give subsidy to existing nuclear power stations in order to keep sufficient generating capacity available. Nuclear power stations do not provide back-up for intermittent renewables: they cannot be turned on and off quickly. And because they are expensive to build but then cheap to run, they will continue to operate for as long as regulators allow them to do so (or, as in Germany, until the government changes its mind). Nuclear power companies do not require any financial incentives to keep their plants open.

They do, however, require subsidy to build new nuclear power stations. On October 8th the Commission found that the UK's CfD with EDF Energy for a new nuclear power station was, after modification, compatible with state aid rules. Almunia secured two significant changes. He required EDF Energy to pay a significantly higher fee to the UK Treasury to cover the risk to the government of providing a loan guarantee.[18] And he insisted on mechanisms to pay back much of the subsidy. Nuclear power plants can be run for up to 60 years, with relatively low operating costs. The public subsidy paid by the UK government will be for 35 years. The Commission insisted that for the rest of Hinkley's operational life, EDF Energy will have to pay part of its profits back to the government (in addition to normal taxation). This will result in a significant amount of the subsidy being recouped by the public sector, albeit over a long timescale.

"The Commission should have rejected the UK's new and inefficient subsidies to coal."

The contract with EDF Energy is an important step forward for the UK's decarbonisation programme. Nuclear power remains controversial in some member-states, particularly Germany and Austria, whose populations regard nuclear radiation, waste and possible accidents as greater risks than climate change. Nuclear power is less controversial in the UK, where it is backed by the three mainstream political parties. The contract sets a reasonable level of public financial support. EDF Energy will receive £92.50 (€117) for each megawatt hour of electricity. This is much lower that the subsidy given to offshore wind farms, which is £155 (€196) though more than those given to onshore wind. The nuclear contract will be for 35 years, whereas contracts for renewables will only be 15 years. However, the nuclear station will operate for 60 years; the wind farms for 20-25 years. So the nuclear plant will be subsidised for a lower proportion of its operating life than the renewable technologies will. For the rest of Hinkley's operating life, the company will be repaying subsidies.

The Commission took the sensible approach of carrying out a formal investigation into whether state intervention was necessary to get the nuclear power plant built, and whether a nuclear power station was an appropriate way to decarbonise the UK's electricity sector. On the first question, the Commission argued that the nuclear stations currently being constructed in Finland and France, which are the same design as the proposed Somerset plant, were not being supported by state intervention. This was incorrect. The two plants do not have long-term contracts with the governments, but they do have low-cost loans and loan guarantees from the two governments. Given the nature of a nuclear power

17: 'European Commission: 'State aid: Commission authorises UK capacity market electricity generation scheme', July 23rd 2014.

18: European Commission, 'State aid: Commission concludes modified UK measures for Hinkley Point nuclear power plant are compatible with EU rules', October 8th 2014.

station, with lengthy construction time and high capital cost, no nuclear power station has been built or will be built without arrangements to lessen the developer's exposure to the market.

On the second question, the Commission accepted that environmental protection is a common objective of EU policy, and that nuclear power is low-carbon. But it questioned whether nuclear is an appropriate way to decarbonise electricity generation, because of the need to manage radioactive waste, and because of the potential for accidents. Radioactive waste does indeed need to be managed for long periods. But greenhouse gases – another form of waste – cannot be managed. Greenhouse gases cause 150,000 premature deaths each year worldwide, according to the World Health Organisation.[19] Accidents are possible at nuclear power stations. But they are also possible, and much more frequent, in coal mines. In the last ten years there have been fatal coal mine accidents in the EU (in Poland, Romania, Slovakia and Spain) killing 82 people. The 2011 Fukushima accident killed nobody directly, although some people will get cancer due to exposure to radioactive pollution. Radioactivity is invisible, so causes greater fear than visible threats. But coal power generation also produces radioactivity: some scientific studies conclude that this is more damaging to human health than radioactive emissions from nuclear power stations.[20] Burning coal also produces toxic pollution as well as climate change. Coal is far more dangerous than nuclear power.

The Commission has handled the UK's nuclear power application well. It raised significant questions and secured improvements in the contract. It then recognised that nuclear power is necessary to meet the common European interest of climate protection, and that the contract therefore met state aid rules. The Austrian government is taking the Commission to the ECJ to challenge this decision. National governments should not use state aid powers to pursue particular political or technological agendas, so Vienna should resist the temptation to challenge state aid decisions to pursue its anti-nuclear agenda, and withdraw its case against the Commission.

"The Commission has handled the UK's nuclear power application well."

EDF Energy and the British government are not yet out of the woods. But the Commission's approach to Hinkley give grounds for optimism that the EU will take a sensible approach to state aid and climate policy in the coming years.

Does decarbonisation need 'more Europe'?

It is not hard to outline a stronger, more economically efficient approach to EU climate policy. The ETS could be replaced by a carbon tax. The European institutions could agree an EU renewable support scheme, which would significantly reduce administrative costs for energy developers. First Vice-President of the Commission Frans Timmermans said in his previous job as Dutch foreign secretary that there was a case for more Europe on climate and energy policy. Finnish Prime Minister Alexander Stubb said the same in a speech to a CER seminar in London in October. Climate and energy policy pass the subsidiarity test: the higher the tier of government which sets them, the more effective they are likely to be.

However, the advantages of closer EU co-operation and a stronger role for the Commission must be weighed against the damage that a long political conflict, which would inevitably follow any Commission attempt to centralise energy policy, would inflict on the confidence of investors, and so on the cost of capital. This dichotomy between what is theoretically best and what is practically best is well illustrated by a decision made by the ECJ on 1st July 2014 (coincidentally the same day that the new state aid guidelines came into effect) about whether the Swedish government was obliged to give subsidies to wind farms on the Finnish islands of Åland. The Commission and several member-states were watching this case very closely, because the judgement will have great influence over the extent to which national governments are obliged to subsidise renewable projects outside their borders.

The Åland archipelago, in the Baltic Sea, is less than 40 kilometres off the Swedish coast. The inhabitants speak Swedish. But the islands have been, since a 1921 League of Nations decision, part of Finland. This means that the Swedish government subsidy for renewable electricity is not available to Ålanders – even though the islands are connected to the Swedish electricity grid rather than the Finnish grid. The local wind energy company Ålands Vindkraft took the case to the Swedish courts in 2009, arguing that the restriction of subsidy to parts of Sweden was incompatible with the free movement of goods. The Swedish court passed the case to the ECJ.

The ECJ's Advocate General recommended that the Swedish government's approach was inconsistent

19: World Health Organisation, 'Deaths from climate change', 2014.

20: Mara Hvistendahl, 'Coal ash is more radioactive than nuclear waste', Scientific American, December 2007.

with an article of the 2009 'renewable energy directive' which commits member-states to the free movement of goods. National governments, the Advocate General recommended, should be given two years to change their support schemes to make them compatible with EU law and to promote an integrated EU energy market. However, the court did not follow the advice of its Advocate General. Instead, the judges ruled that national governments were not required to subsidise renewable energy in another member-state.

This decision was unexpected, and unwelcome to the Commission, which sees national subsidy schemes as a block to a single energy market. The Barroso Commission said merely that it was considering the implications of the ruling. In deciding what to do, the Juncker Commission should take into account the importance of regulatory stability. If the ECJ had followed the Advocate General's advice, major regulatory change would have been necessary in several member-states. This would have caused great uncertainty, increasing the cost of capital. The court ruling was welcomed by the renewable energy industry. Justin Wilkes, deputy chief executive officer of the European Wind Energy Association, said that the decision "will provide added clarity for investors in the wind industry and reinforces stable regulatory frameworks, which are of paramount importance".[21]

The ECJ decision was also welcome news for some governments, including Sweden and also, in particular, Germany. The German renewable energy scheme does not offer subsidies to renewable energy schemes outside Germany. The Commission had been trying to make Berlin change this approach. But Germany's *Energiewende* has been driven as much by industrial policy – the desire to support German renewable energy manufacturing companies – as by energy policy, so the government refused to change its approach. Unsurprisingly, the German economy and energy minister (and SPD leader) Sigmar Gabriel welcomed the ECJ's ruling, arguing that the Court's decision would help renewable energy across Europe. Gabriel is right. An EU-wide support scheme for renewables is in theory the most cost-effective approach. But trying to get from the current situation to this optimal scenario would create great regulatory uncertainty, and destroy any economic advantages. The ECJ ruling was a good outcome for regulatory stability, and so for the cost-effective deployment of renewables. The Commission should accept the ruling and allow the new state aid guidelines to operate until 2020, without unnecessary amendment or change.

Conclusion

The Commission, as the referee of European integration and co-operation, has to balance competing objectives. In this policy area, the objectives of deepening the single energy market, respecting member-state competence over the energy mix and protecting the climate can conflict. The new guidelines provide a good framework for balancing these objectives. The Commission should now focus on implementation and delivery. European rules can provide regulatory stability, not least because they are more difficult to change than national rules. Regulatory stability reduces the risk, and hence the cost of renewable projects, which reduces the amount of money needed to modernise, extend and decarbonise Europe's electricity system.

The Commission should therefore reject calls to make further changes to the content of the state aid guidelines. The one change it could make is to form, rather than content. It could propose turning the guidelines into a regulation. This would provide even greater regulatory stability. Commissioners should refrain from using state aid rules to pursue particular national, political or technological agendas. National governments such as Austria should also stop challenging state aid decisions to pursue their anti-nuclear agenda.

Even with this good set of guidelines, difficult choices between objectives and priorities are inevitable. In making these judgments, the Commission should always favour climate action.

Stephen Tindale
Research fellow, Centre for European Reform

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21: Euractiv, 'Sweden gets EU clearance to limit green energy support to national borders', July 2014.