E3G

BRIEFING PAPER, July 2014

Keeping coal alive and kicking:

Hidden subsidies and preferential treatment in the UK Capacity Market

Chris Littlecott, E3G

Recommendation

The European Commission should launch a detailed investigation of the UK Capacity Market. The current proposals are bad for consumers, bad for the climate, and contrary to EU internal market rules. The UK government proclaims its support for all three of these objectives, but its actions fail to match up to its rhetoric.

The UK is proposing multi-year contracts for existing coal plants, which would provide illegal subsidy for upgrades. Payments on a yearly basis would instead be sufficient for maintaining security of supply over the next decade. The Commission should require the UK to revise these elements of its proposals.

Other EU member states are currently considering capacity mechanisms and / or the provision of financial support for existing coal plants. The European Commission must not set a dangerous precedent by approving the UK's complicated and inconsistent approach, which runs counter to the Commission's own advice. Specific restrictions on subsidies to existing coal plants are required to ensure coherence between objectives on climate change, energy security, and the completion of the Internal Energy Market.

"Incompatible or poorly designed capacity mechanisms risk distorting trading, production and investment decisions in the internal electricity market. They also risk discouraging innovative solutions, for example energy services providers that control demand based on wholesale market prices and instead locking in (possibly high CO2 emitting) generation based solutions. If capacity mechanisms become more common in the internal electricity market, the potentially distortionary effects will become greater. It is important that those risks are mitigated by careful design."

European Commission, 2013 [1]

Introduction – the context for a Commission decision

Following the General Election of 2010, the new UK Coalition Government committed to delivering a programme of electricity market reform to achieve objectives of affordability, decarbonisation and security of supply.

> *"Due to plant closures and the need to replace and upgrade the UK's electricity infrastructure, the UK electricity sector will require significant capital investment over the next decade. The Government's EMR programme provides an ambitious package of measures to incentivise the investment needed to replace this ageing infrastructure with a more diverse and low-carbon energy mix."*
>
> *DECC, Implementing Electricity Market Reform, June 2014.* [2]

The Energy Act of December 2013 finally instituted the main policy measures to deliver this ambition: Contracts for Difference (CfD) Feed in Tariffs for low-carbon electricity generation; a Capacity Market to ensure sufficient generation is available; and an Emissions Performance Standard (EPS) to rule out investment in new unabated coal generation. Previously, a Carbon Price Support mechanism had been introduced to increase the carbon price provided under the EU's Emissions Trading System.

On 19 and 23 June 2014, the UK government laid before Parliament the implementing legislation required for Contracts for Difference and the Capacity Market. On 30 June, Secretary of State Ed Davey then announced the final decisions taken on the key parameters for the first capacity auction. This is scheduled to take place in autumn 2014 following the passage of secondary legislation and confirmation that the proposals are permitted under EU State Aid rules.

Previously, the UK had quietly notified the European Commission of its Capacity Market proposals, in an effort to secure speedy approval and limit scope for public input during the two-month scrutiny period, which is now nearing its decision point. The Commission's options are to: approve the proposals; make recommendations for changes to be incorporated to ensure compatibility with EU State Aid rules; or decide to launch a more detailed investigation.

E3G believes that the European Commission should launch a detailed investigation of the UK Capacity Market. The current proposals are bad for consumers, bad for the climate, and contrary to EU internal market rules.

The current proposals would lock in high costs to consumers, sideline the benefits of interconnection and demand side measures, and provide unjustified payments to existing nuclear plants.[3] [4] These weaknesses alone are sufficient to justify further investigation of the Capacity Market. But just as importantly, the UK's proposals would provide privileged treatment and illegal indirect subsidies to existing coal plants in an attempt to further extend their operating lifetimes and generation output.

Across Europe, utilities are complaining of lost profits due to a combination of the economic crisis, overcapacity and their own incompetence. Governments are being put under pressure to ensure that 'the lights stay on'. Capacity mechanisms are emerging as a convenient wrapping that disguises recompense to generators as a means of addressing security of supply concerns.[5] The European Commission has rightly warned of the negative impacts such measures would have on the Internal Energy Market, and has set out guidance that would limit negative impacts.

> *"In liberalised markets, investments are not guaranteed by the State. Only where there is a real threat to generation adequacy and security of supply as a result of closure or mothballing does the financial viability of existing plant become a matter of public concern It is very important that there should not be state support to compensate operators for lost income or bad investment decisions."*
>
> *European Commission, 2013.* [6]

The Commission's decisions on the UK proposals will therefore set a precedent for future capacity mechanisms under consideration in other member states, and for any targeted support for existing coal that may be incorporated into the 2030 energy and climate package. It is imperative that any such schemes deliver benefits for consumers and advance the transition to a low-carbon electricity sector. This is the first big test for the European Commission's new guidelines on State Aid for Environmental Protection and Energy 2014-2020. It needs to ensure that the UK gets it right.

About this paper

As noted above, E3G believes that the current UK Capacity Market proposals also present barriers to the deployment of demand side response, demand reduction, and interconnection solutions to the challenge of securing appropriate resource adequacy in a changing market. The current proposals are suited for incumbents, not innovators. This is a massive missed opportunity that risks spiralling into a politically unsustainable process that undermines investment in low-carbon generation. This risk has been reinforced by recent risk-adverse ministerial decisions based on overly pessimistic assumptions by National Grid.[7]

Notwithstanding these broader concerns, this briefing paper focuses in more narrowly at how the UK capacity mechanism has been designed to provide preferential treatment for existing coal plants, including via the provision of illegal indirect subsidies for mandated air pollution upgrades. Throughout the paper we contrast the European Commission's advice with the proposals being brought forward in the UK.

> *"...concerns about the adequacy of generation capacity have led some Member States to consider new public intervention, such as support schemes for investments in new electricity generation capacity or for remunerating existing plants to remain operational. The Commission considers that those measures should not result in inefficient plants being artificially kept in operation through public support, or in unnecessary new generation capacity being built."*
>
> *European Commission, 2013.* [8]

The paper first provides an overview of the UK's other electricity market mechanisms and how they have been weakened to provide indirect support for existing coal plants. It then considers in more detail the elements of the UK's proposed Capacity Market that privilege existing coal plants and offer illegal subsidies.

The paper reviews what is on offer to UK existing coal plants and the likely impact on investment decisions. It then concludes by considering how the privileged treatment of existing coal plants under the UK's Capacity Market conflicts with EU state aid guidance, and outlines how the situation can be addressed.

Why this matters now

The UK has an ageing fleet of coal plants, most of which were commissioned in the 1960s and 1970s. Of the 30 biggest emitters of CO_2 in the EU, 9 of them are from the UK.[9] All of them have faced the decision of whether to upgrade to meet the latest EU requirements for air pollution control, as set out under the Industrial Emissions Directive (IED). Alternatively, they might choose to take different pathways to reduced operating hours and / or eventual closure over the next decade.

This requirement has been foreseen for nearly a decade,[10] and should have helped stimulate new investment to replace the UK's ageing coal power stations. However the investment hiatus of recent years (triggered by a combination of the economic crisis and government policy uncertainty) was complemented by heavy lobbying by incumbent generators, many of whom have seen profit margins squeezed across Europe and are looking at the UK as a pathfinder for new policy instruments.

The result has been that an opportunity for a managed transition away from unabated coal has been turned into an offer of subsidies and support that, if implemented, will prolong the lifetime of high carbon assets in the UK electricity system.

Flaws and loopholes in Electricity Market Reform instruments

As noted above, the UK has introduced four main instruments to deliver on its stated objectives for Electricity Market Reform of affordability, decarbonisation and security of supply. Taken together, these instruments are supposed to provide a coherent set of measures to attract investment and transform the UK's ageing electricity infrastructure.

"Interventions should be consistent across different policy goals."

European Commission, 2013. [11]

However a series of inconsistencies, deliberate loopholes and policy changes have emerged during the passage of legislation. These combine to improve the case for the further life extension of old coal plants. We start by looking at these in turn.

Carbon Price Support frozen

With the EU carbon price trading at around €6/t over recent years, it was increasingly recognised that the EU Emissions Trading System had failed to provide a sufficiently strong and stable signal capable of bringing forward investment in low-carbon technologies. The UK government therefore introduced its own Carbon Price Support (CPS) mechanism to provide greater forward clarity on carbon prices, with the level set to increase annually out to 2030.

Yet just two years after its introduction, Budget 2014 saw HM Treasury freeze the CPS at its 2016 level until 2020. With coal power plants being the most carbon intensive form of electricity generation in the UK, this freeze provides greater assistance to coal than gas plants. While the proposed trajectory to 2030 currently remains in place, expectations are now that this will also be revised downwards. The rapid u-turn by HM Treasury proved critics right, in that the Carbon Price Support has been seen to be open to political interference and a poor basis for long-term investment decisions.

Slow progress on CCS and other low-carbon generation

A central tenet of the UK approach is to claim that the addition of new low-carbon generation will push old coal plants out of the market over the coming years. The creation of Contracts for Difference (CfD) for nuclear, carbon capture and storage, and renewables was undertaken to provide competition between low-carbon technologies. However the provision of funding for these investments is subject to the overall budget set in the Levy Control Framework, and to decisions within the Department of Energy and Climate Change as to what funds will be spent and when.

Coal and gas plants equipped with carbon capture and storage technologies are arguably the closest like-for-like competitor with existing coal plants. It is therefore worrying that the UK government is currently micro-managing a CCS Commercialisation Programme that only aspires to bring forward “up to two” projects before 2020. As a result, three other world-leading CCS projects have been left without access to CfDs, despite this being the professed intention of the EMR process. One of these has already been abandoned, one is on hold, and the last is now at risk of losing €60m in EU funding. The Office of Carbon Capture and Storage has an aspiration for 13GW of CCS by 2030, but no mechanism has been put in place to deliver it.

Emissions Performance Standard loophole

The Emissions Performance Standard has been introduced to limit CO2 emissions from new power stations[12] – ruling out the construction of new unabated coal plant in the UK. The government robustly defended this narrow scope during passage of the Bill, despite a vote by the House of Lords to apply the EPS to existing plants in the event that they undertake significant investments to extend operating lifetimes. We will return to this issue below in respect to the application of the Capacity Market.

Furthermore, the secondary regulations required to implement the EPS will not be placed before Parliament until October 2014, after the initiation of the process for the first capacity

auction. Parliament's ability to consider the incoherence between different instruments has thereby been restricted. Indeed, the EPS was noticeable only in its absence from the recent 'Implementing EMR' publication by DECC.

Decarbonisation versus quiet support for coal

A consistent result across the implementation of these three policy instruments is that there has been a bias to keeping the UK's ageing coal power plants on the system in the 2020s, at the expense of low-carbon alternatives. This is despite the UK's independent Committee on Climate Change having advised repeatedly since its formation in 2008[13] that there can be no role for baseload unabated coal from the early 2020s, with any peaking role severely restricted if the UK is to achieve its carbon budgets and a decarbonised power sector by 2030.[14]

> *"Aid for generation adequacy may contradict the objective of phasing out environmentally harmful subsidies including for fossil fuels. Member States should therefore primarily consider alternative ways of achieving generation adequacy which do not have a negative impact on the objective of phasing out environmentally or economically harmful subsidies, such as facilitating demand side management and increasing interconnection capacity."*
>
> *European Commission, 2014.* [15]

The UK government response to criticism of these policy changes and loopholes has been to claim that the results of its modelling show that it is still possible to achieve its climate change objectives. But there is a fundamental difference between what is possible in a model and what is being encouraged to happen in the real world. As has been seen by the rapid revision to the Carbon Price Support, policy instruments can be subject to change under pressure from vested interests.

If UK policy makers are serious about achieving their stated decarbonisation objectives they need to better consider the reality of how policies fit together. We currently have the bizarre situation of officials and ministers arguing on the one hand that carbon pricing and low-carbon generation will combine to reduce the load factors of old coal plants, while at the same time actively putting in place incentives that will increase the scope for coal plants to run at higher load factors.

The incoherence of these different positions reflects the continued misalignment of objectives within the Department of Energy and Climate Change. Officials responsible for energy security can still appear to view the UK's decarbonisation objective as an inconvenience, while the influence of electricity generators overpowers the voice of advocates for interconnection, demand response and energy efficiency. This results in a systemic bias towards incumbent interests.

This inconsistency has been poorly managed, and now risks undermining the UK's positive international and European leadership on climate change. If implemented, the proposed

Capacity Market would have a particularly damaging reputational impact, as it runs contrary to other UK efforts on international coal finance and the risk of lock-in to high carbon infrastructure across Europe. Other countries will rightly look at what the UK does rather than what the UK says.

This tension is now set to become more evident. The weaknesses outlined above in respect to the Carbon Price Support, Contracts for Difference and Emissions Performance Standard all give indirect support to existing coal. But the Capacity Market takes an additional step in offering direct and privileged financial support to coal plant operators. The next section outlines how.

"Member States have signed up to the Union's climate objectives and the resulting need to decarbonise the power sector. Therefore, they are encouraged to ensure that low carbon technologies can compete on a level playing field. The implementation of a capacity mechanism should not increase carbon intensity footprints for capacities to avoid lock-in of high carbon generation."

European Commission, 2013. [16]

Capacity Market support for existing coal

In 2011, the UK government's preferred policy mechanism to address energy security concerns was the introduction of a targeted strategic reserve. Following heavy lobbying by generators, this cheaper policy option was rejected in favour of a market wide capacity mechanism.[17]

"If the alternative measures do not solve the identified problem of generation adequacy a strategic reserve, a credibly one-off tendering procedure or, if this will not work even a market-wide capacity mechanism are possible options. Whatever mechanism is chosen, Member States should take into account the objective of phasing out fossil fuel generation subsidies by 2020."

European Commission, 2013. [18]

The UK's coalition government has repeatedly claimed that it doesn't 'pick winners', but its detailed proposals for the Capacity Market shows that it is now actively trying to incentivise the life extension of existing coal. In so doing the government displays incoherence over the pursuit of its energy and climate objectives. A potentially legitimate but limited role for coal has been usurped by a set of discriminatory and illegal measures. We now look at these in turn.

1. Illegal indirect subsidy to meet air pollution regulations

The Industrial Emissions Directive will come into force from 1st January 2016, and require improved environmental performance from existing power stations. The operators of the UK's ageing coal plants will therefore need to decide whether they want to upgrade to meet air pollution standards or continue operating with restrictions on operations. A number of

flexibilities are available in both cases, and there is no immediate requirement for plants to shut – they would instead be able to keep operating out to at least 2023 or 2025 under the different routes possible.

As a mandated EU environmental requirement, State Aid to operators is only permitted if plants are going above and beyond Union standards, or investing significantly in advance of standards entering into force.[19] Neither of these is applicable in the UK situation. However Annex C of the Capacity Market Impact Assessment explicitly uses the cost of air pollution upgrades as the trigger point for thresholds of spending that enable plant to bid for longer contracts (of 3 or up to 15 years) and higher levels of support.[20]

While operators would have to incur the costs of upgrades up front, they would have a capacity contract guaranteeing revenues for future years that is only receivable on effective delivery of the refurbishment programme.[21] We therefore believe that the support being offered to existing coal plant is incompatible with existing State Aid rules, and should not be permitted. The European Commission's Environment and Energy Aid Guidance is clear that any costs of air pollution upgrades should be excluded from consideration of eligible costs.[22]

2. Redefining 'old' plants to justify 'new' investments

The application of the UK's Emissions Performance Standard is clearly linked to 'new' plant, identified with reference to the granting of permits.

In turn, the Capacity Market continues to be justified with reference for the need for investment in new gas capacity.[23] However the definition of 'new' plant in the Capacity Market has been set with reference to a threshold of investment of £250/kW, in order to enable the participation of existing generating assets that might be able to provide longer term capacity. This means that a 'new' plant could just as equally be a 50 year old coal plant undertaking air pollution and efficiency upgrades that would enable it to operate through to 2030 or beyond.

There is therefore a fundamental inconsistency between the two policy instruments. We would argue that, if plants are being treated as 'new' for the provision of financial support, then they should also be treated as 'new' in respect to meeting the requirements of the EPS. If this is not required, as under the current proposals, then existing coal plants will be given preferential treatment – for example over new investments in CCS which are currently denied a route to market due to the absence of support via CfDs.

3. Rewarding capacity, but actually seeking additional generation output

EU rules require that any mechanism addressing generation adequacy should only support the provision of capacity and not reward electricity output.[24] It is therefore imperative that any capacity mechanism is properly defined to address the relevant system requirements.

"The nature and causes of the generation adequacy problem, and therefore of the need for State aid to ensure generation adequacy, should be properly analysed and quantified, for example, in terms of lack of peak-load or seasonal capacity or peak demand in case of failure of the short-term wholesale market to match demand and supply."

European Commission, 2014. [25]

In the UK, peak demand is during winter, with peak system stress likely on cold evenings which coincide with limited electricity generation from wind power. The UK's ageing coal power stations could play a valuable role in addressing this specific challenge through to the period around 2023-25 as they move towards closure. Provision of such seasonal peaking capacity could be rewarded under a better targeted capacity mechanism or a strategic reserve.

Alternatively, the current capacity mechanism could also do this by only granting annual contracts. Indeed the latest Impact Assessment notes that its modelling was updated to allow plants to reserve a portion of their remaining operating hours for each year's capacity auction.[26] This approach would give existing plant an incentive to remain operational out to 2023-25, with operating hours targeted at the time of peak system stress.

However the current form of the Capacity Market provides specific and additional incentives to existing coal plants to encourage them to extend operating lifetimes and undertake more extensive operating regimes through a combination of air pollution improvements and efficiency upgrades. This will be supported by access to higher payments and longer contracts in the capacity auction.

Analysis by Parsons Brinkerhoff for the government on the costs of upgrades underlines that such investments would require sufficient operational lifetimes to achieve a commercial pay-back to justify the investment.[27] Similarly, utilities argued against the extension of the EPS to existing coal plant on the basis that this would limit their load factors to around 40-45%, and that this would be insufficient to justify their investment.[28]

"The decision to retrofit NO_x abatement will not be based simply on its cost but will take into account the remaining operating life and the potential requirement for additional investment to ensure the integrity of the whole power plant for an extended period i.e. life extension work. Parsons Brinckerhoff believes that all UK coal plant operators will have to consider specific life extensions works as part of the NO_x abatement investment decision."

Parsons Brinckerhoff, 2014. [29]

The form of capacity mechanism proposed provides an incentive for plants to upgrade with the aim of operating at higher load factors. The change to the carbon price support shows that future carbon prices may not be sufficiently high or durable to limit plant operations. Alternative forms of capacity mechanism or a restriction to 1-year contracts would be less damaging in respect to avoiding lock-in of high carbon generation, negative impacts on competition, and consumer subsidies for unnecessary upgrades.

4. Privileging old coal in the capacity mechanism process

The UK government is quick to suggest that it is following approach of 'technology neutrality', as encouraged by the European Commission. However, existing coal plants have the option of bidding as 'new' plants if they intend to spend sufficient amounts to undertake a plant upgrade and life extension, with contracts possible for up to 15 years. They also have the option of bidding as 'refurbished' plant for a 3 year contract, based on a lower threshold of investment. Additionally, existing coal plants bidding for upgrade contracts can also exit the capacity auction and re-enter as a 'pre-refurbished' plant, which would still allow them to be eligible for a 1 year contract.

These multiple options provide additional scope for existing coal plants to bid for longer-term contracts with confidence that they have a fall-back option in the event that they are unsuccessful. This provision of multiple options contrasts starkly with the lack of access for competitors: such as the non-existent access of CCS projects to CfDs; the single option for new gas plant only being able to bid for 'new' capacity contracts (indirect competition with existing coal); or to existing gas plant only having the option of 1 year capacity contracts.

"One potentially harmful effect of State aid for environmental and energy objectives is that it prevents the market mechanism from delivering efficient outcomes by rewarding the most efficient and innovative producers and putting pressure on the least inefficient to improve, restructure or exit the market."

European Commission, 2014. [30]

EU guidance on State Aid for generation adequacy highlights that it is possible to give priority to low-carbon generation options,[31] but in this case the UK is clearly giving preferential treatment to high-carbon generating capacity. This will further the advantage of incumbent generators in the UK electricity sector, increasing barriers to new entry. For example, why would a CCS project developer want to spend money and time on developing a CCS power station when there is limited space for new generating capacity in the market? The UK's over-allocation of capacity contracts now[32] will reduce the incentive to bring forward new capacity in low-carbon generation.

"Aid may also have distortive effects by strengthening or maintaining substantial market power of the beneficiary. Even where aid does not strengthen substantial market power directly, it may do so indirectly, by discouraging the expansion of existing competitors or inducing their exit or discouraging the entry of new competitors."

European Commission, 2014. [33]

Additionally, the calculation of eligible costs for plant undertaking refurbishments starts from 1st May 2012 – enabling incumbent generators to claim for upgrade work undertaken in the last two years if they can show that it forms part of a larger package of improvements. The UK government has repeatedly argued against the application of the EPS to existing plant undertaking upgrades to meet air pollution requirements on the (erroneous) basis that this could amount to retrospective regulation. Ironically the government now seems quite

content to provide retrospective recompense for refurbishment activities, further demonstrating the inconsistencies between policy instruments.

What is on offer? What is at stake?

Existing coal plants will be able to bid for different contract lengths and payment levels depending on the extent of any proposed refurbishments. Eleigible costs can be backdated to May 2012:

- Plant undertaking refurbishment at a cost of over £250/kW[34] will actually be classified as 'new' and will be a 'price maker' in the auction, with the right to seek contracts up to 15 years in length.
- Plant undertaking refurbishment at a cost of over £125/kW will be also be a 'price maker' in the auction, with the right to seek contracts up to 3 years in length.
- Plant can alternatively bid for single year contracts, as a 'price taker'. Operators also have the right to re-enter the auction with this 'pre-refurbishment' plant, if they are unsuccessful at securing a contract as a new or refurbished plant.

Having justified the Capacity Market on the basis that investment was required in new gas, the government's current aspiration appears to be for existing coal to bid for multi-year contracts to reduce the amount of support needed for new gas plants.

At the currently modelled capacity auction clearing price of £39/kW,[35] a 2GW plant such as Cottam or Fiddlers Ferry would receive approaching £234m over 3 years, or up to £1bn over 15 years.[36] Either of these contracts would substantially reduce the risks of investing in plant upgrades and pollution abatement equipment, through provision of guaranteed revenues and the ability to run extended operating hours following refurbishment.

An overview of the UK's remaining coal fleet is set out in Annex 1 below. On the basis of public statements by operators, E3G's initial assessment is that it would be plausible that around 10GW of existing coal plants could seek multi-year contracts via the capacity auctions in 2014 and 2015. A further 5GW may yet also come forward if auction conditions are positive. This assessment is consistent with modelling by NERA for Scottish Power in 2011 that envisaged around 13.5GW of coal capacity would opt in to the IED.

Upgraded plant would subsequently have the ability to run at higher load factors and would be much more likely to remain on the UK system late into the 2020s. The level of operation of plants would of course depend of the relative costs of coal, gas, and CO_2. During June and July 2014, the falling gas price has tipped the balance in favour of gas plant, but over recent years the low cost of coal and high cost of gas has seen extensive and profitable coal plant operation in the UK. Yet now consumers will be presented with the bill for upgrades to enable continued operation, at the same time as other policy measures try to restrict running hours. This is intuitively an unattractive proposition, with alternative investments in new low-carbon capacity, interconnection and demand-side measures offering longer-term benefits to the UK economy as well as accelerated action on decarbonisation goals.

Conclusion: the clash between Existing Coal and State Aid Guidance

While recognising that maintenance of energy security is a valid concern, in our view the UK has failed to put forward an appropriate aid measure. While its rhetorical description of the Capacity Market as a technology neutral approach tries to address Commission guidance, the reality of the detailed implementation rules is that the scope of the mechanism has been deliberately broadly drawn so as to encourage existing coal plants to operate at higher load factors out into the 2020s.

As a consequence, the State Aid given via the Capacity Market fails to be proportionate to the real task at hand. Multi-year contracts for existing plant is a direct challenge to the supposed rapid loss of ageing generating plant. The impact of multi-year contracts for existing coal plant would have a negative effect on competition and trade between member states, particularly in the light of the exclusion of interconnection and interconnected capacity from the first capacity auction. Moreover, the intended incentive effect is aimed at the fulfilment of an existing Union standard, contrary to State Aid regulations.

In our view, the UK proposals for the Capacity Market fail to meet four of the Commission's seven key criteria for assessment.

Overall, we believe that the flaws in the UK Capacity Market are so severe that a detailed investigation is required by the European Commission. This should consider the sidelining of demand side response, demand reduction and interconnection and the provision of payments to existing nuclear plant. A review should also (re)consider whether a targeted mechanism would be more appropriate.

In addition, the privileged treatment of existing coal plants represents a fundamental challenge to the Commission's guidance on how generation adequacy can be coherently addressed alongside the EU's agreed aims for decarbonisation and the internal energy market. With the USA acting to address CO2 emissions from both new and existing power plants, Europe must ensure that it too is enabling a transition away from unabated coal and towards low-carbon electricity.

As a bare minimum, the Commission should therefore require that access to Capacity Market payments must be consistent with other UK policy objectives. This would include a requirement for equivalent definitions of 'new' plant, and the application of EPS criteria to any old coal plant extending its operating life via plant upgrades and installation of pollution abatement equipment. Most importantly, the Commission must reaffirm that indirect subsidies for the achievement of Union standards on air quality are not permitted.

If the Commission fails to act now, the UK could plausibly see ~10GW of old coal plant seeking multi-year contracts from the Capacity Market later in 2014, positioning them for extended operation over the next decade. This would be a deeply negative demonstration of the power of incumbent interests and the weakness of both UK and EU policy makers to deliver on their own stated objectives.

About E3G

E3G is an independent, non-profit European organisation operating in the public interest to accelerate the global transition to sustainable development. E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. E3G works closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere.

For further information, please contact: Chris Littlecott, Senior Policy Advisor, E3G. chris.littlecott@e3g.org | M: +44 (0)7920 461812 | T: +44 (0)207 593 2032

Annex 1: UK coal-fired power plant considering life extensions if successful in receipt of capacity contract

Station	Owner	Capacity (MW)	Status	IED compliant	Upgrade likely	Upgrade possible
Aberthaw	RWE	1635	Opted in to Limited Life Derogation but keeping options open for upgrade to IED via Transitional National Plan until end of 2015.			1386
Cottam	EdF	2011	Planning on upgrading to meet IED via Transitional National Plan, also placed in Limited Life Derogation to keep options open. Curently undertaking major maintenance alongside West Burton unit 1, total cost £90m.		2011	
Drax	Drax Power	3870	3 units to convert to biomass, 3 likely to upgrade to IED via Transitional National Plan. Cost of upgrades estimated at £70m-£100m.	1935 (as biomass)	1935	
Eggborough	Eggborough Power Ltd	1960	Had been considering biomass conversion but unsuccessful with application for funding. Buyer being sought. Inclusion in TNP may be advantageous to selling power station as going concern.			1960
Ferrybridge (units 3&4)	SSE	980	Entered into Limited Life Derogation. Keeping option open to put back into Transitional National Plan.			980
Fiddlers Ferry	SSE	1961	Opted in to Transitional National Plan. Has received planning permission for necessary works, and been trialling SNCR technology options.		1961	
Longannet	Iberdrola	2240	Yet to decide. Undertook efficiency upgrades to 2 turbine blocks in 2012 and 2013, costing £20m and £25m each. Scottish ministers have suggested Longannet will operate to 2025, likely requiring upgrades to meet IED via inclusion in TNP.		2240	
Ratcliffe	EON	2000	Has already undertaken work to comply with IED. May still be able to bid for recompense for some costs incurred since 2012?	2000		
Rugeley	GdF	996	Likely to enter Transitional National Plan but not upgrade to meet IED. Would exit by 2020 and have option of running for 1500 hours pa on 5-year rolling average.			
Uskmouth	SSE	360	Remaining 240MW entered into Limited Life Derogation. Keeping option open to put back into Transitional National Plan.			240
West Burton	EdF	1972	Planning on upgrading one of two units to meet IED via Transitional National Plan, both units placed in Limited Life Derogation to keep options open. Unit 1 currently undertaking major maintenance alongside Cottam, total cost £90m.		986	986
Total		**19954**		**2000**	**9133**	**5552**

Source: E3G analysis based on company announcements in public domain.

References

>

[1] European Commission Staff Working Document: Generation Adequacy in the internal electricity market - guidance on public interventions, SWD(2013) 438 final, November 2013, p26

[2] Department of Energy and Climate Change, Implementing EMR, June 2014, p7

[3] European Commission Guidelines on State Aid for Environmental Protection and Energy 2014-2020 (EEAG), June 2014: "Avoidance of undue negative effects on competition and trade. Paragraph 233. The measure should: (a) not reduce incentives to invest in interconnection capacity;
(b) not undermine market coupling, including balancing markets;
(c) not undermine investment decisions on generation which preceded the measure or decisions by operators regarding the balancing or ancillary services market;
(d) not unduly strengthen market dominance;
(e) give preference to low-carbon generators in case of equivalent technical and economic parameters."

[4] EEAG, §230:" The measure should have built-in mechanisms to ensure that windfall profits cannot arise."

[5] See for example, the reporting of the Capacity Market by Energy Risk at http://www.risk.net/energy-risk/feature/2321486/capacity-market-set-to-provide-uks-back-up-plan :

"Although there was initial opposition to the capacity market, now that the mechanism looks inevitable, many industry participants would prefer it to start sooner rather than later. They argue that beginning the regime sooner is the best way to get a feel for how it will work, allowing the details to be easily tweaked at a later date. Perhaps more significantly, market participants expect coal plants to be lossmaking from 2016 onwards, due to the escalating carbon floor price contained in EMR [note: subsequently frozen at 2016 levels], as well as tightening emissions limits from the European Union Industrial Emissions Directive. As a result of this, market players believe commencing capacity payments from 2016 would provide much-needed support for ageing coal plants. They argue that if they knew they would be compensated for losses, it is likely that more facilities would be kept open – a cheaper option than commissioning new plants."

[6] SWD(2013) 438 final, p10

[7] See the critique of NG Electricity Capacity Assessment by the panel of technical experts

[8] European Commission Communication, Delivering the internal electricity market and making the most of public intervention, C(2013) 7243 final, November 2013, p6/7

[9] Europe's Dirty 30: How the EU's coal-fired power plants are undermining its climate efforts, CAN Europe, EEB, HEAL, WWF, Climate Alliance Germany, July 2014, bit.ly/1rzwKQq

[10] The European Commission first consulted on its proposals for the IED in 2005, and legislation was concluded in 2010, with entry into force scheduled for 1st January 2016.

[11] C(2013) 7243 final, p7

[12] Provisions have been made for the EPS to be applied to existing plant that undertakes a replacement or addition of a main boiler, but this threshold would not be met by plant undertaking a combination of efficiency improvements and the installation of pollution control equipment. This threshold for consideration was thereby set sufficiently high to avoid including existing coal plant within the scope of the EPS.

[13] Committee on Climate Change: Building a low-carbon economy – the UK's contribution to tackling climate change, December 2008

[14] Committee on Climate Change, Meeting Carbon Budgets - 2014 Progress Report to Parliament, July 2014

[15] EEAG, §220

[16] SWD(2013) 438 final, p26

[17] See for example analysis by NERA on behalf of Scottish Power: http://www.scottishpower.com/userfiles/file/ermspresponseacpm.pdf

[18] C(2013) 7243 final, p13

>

[19] EEAG, §53

[20] Electricity Market Reform – Capacity Mechanism, Impact Assessment, 23/06/2014, Annex C

[21] DECC, Implementing EMR, June 2014, p 103

[22] EEAG, Annex 2, Footnote 6: "The cost of investments needed to reach the level of protection required by the Union standards is not eligible and need to be deducted."

[23] Electricity Market Reform – Capacity Mechanism, Impact Assessment, 23/06/2014, p12

"The UK faces very rapid closure of existing capacity as older, more polluting, plant go offline and as the power system decarbonises. The decarbonisation of the power sector means that thermal plant can expect to run at lower load factors in future and so need to recover a greater proportion of their fixed costs through scarcity rents at times of stress. This increases risks for investment in thermal capacity exactly at a time when the UK needs significant investment in new gas build to replace the existing ageing fleet. So while there have always been risks that an energy-only market would fail to invest sufficiently in new capacity, these risks have become significantly more material and so necessitate intervention to ensure security of supply."

[24] EEAG §225, Appropriateness. "The aid should remunerate solely the service of pure availability provided by the generator, that is to say, the commitment of being available to deliver electricity and the corresponding compensation for it, for example, in terms of remuneration per MW of capacity being made available. The aid should not include any remuneration for the sale of electricity, that is to say, remuneration per MWh sold."

[25] EEAG, §222

[26] Electricity Market Reform – Capacity Mechanism, Impact Assessment, 23/06/2014, p4

[27] Coal and Gas Assumptions, report to DECC by Parsons Brinckerhoff, March 2014, Conclusions

"An integral part of the decision to retrofit NOx reduction technologies or any other technology required to meet changes in legislation onto an existing coal fired power plant is the cost of extending the life of the power plant for sufficient years to achieve a commercial payback. The cost of life extension is not a single cost which can be applied to all power plants, but a number of individual costs which reflect where the power plant is in relation to the life cycle of its major components. A decision to invest in NOx abatement can only be taken in the context of the whole plant and potential requirement to undertake wider investment to protect the whole asset."

[28] Briefing notes from utilities to Parliamentarians regarding extension of EPS, seen by E3G.

[29] Coal and Gas Assumptions, report to DECC by Parsons Brinckerhoff, March 2014, section 4.7.1

[30] EEAG, §91

[31] See EEAG §233, as in footnote 3 above

[32] Cornwall Energy, Energy Perspective, July 2014: "This could attract all of the existing coal, nuclear and gas plant on the system. Indeed, there is now a probability that—given the uncertain outlook for some existing gas and coal plant—new build plant may be setting the clearing price for this first auction. This would mean, given the pay as clear basis of the auction, a potentially valuable source of income for existing operators." and "We think National Grid's modelling of the amounts of capacity needed is based on highly risk averse assumptions, although we recognise there are considerable uncertainties. The modelling raises the threat that a larger than necessary capacity market becomes politically unsustainable over time."

[33] EEAG, §92

[34] This level of cost is understood to have been incurred by Eon for the series of upgrades made to their Ratcliffe plant in order to meet the Industrial Emissions Directive, some of which may qualify retrospectively for recompense via the capacity mechanism.

[35] Electricity Market Reform – Capacity Mechanism, Impact Assessment, 23/06/2014, p 29

[36] Payment would be made for de-rated capacity, so would need to be adjusted downwards from gross capacity.