

Title: Obliging Ofgem to assess future electricity capacity requirements Lead department or agency: DECC Other departments or agencies: Ofgem	Impact Assessment (IA)
	IA No: DECC0017
	Date: 09/12/2010
	Stage: Final
	Source of intervention: Domestic
	Type of measure: Primary legislation
Contact for enquiries: Angela Venters	

Summary: Intervention and Options

What is the problem under consideration? Why is government intervention necessary?

The Government is responsible for monitoring security of supply issues. The Government would like to enable a more comprehensive assessment of the degree to which the market is likely to supply enough electricity generation capacity. In assessing capacity need, current arrangements provide estimates of future demand but do not provide an adequate reference against which monitoring can take place because they are quite broad and do not estimate the required margin above this. The Government also believes that it would be desirable for it to have available a greater level of information.

What are the policy objectives and the intended effects?

The objectives of the policy are to assess future capacity requirements to enable a comparison of the degree to which the market will supply enough electricity generation capacity over the next few years relative to anticipated capacity need. This will allow more effective monitoring and provide better information to market participants about future investment requirements.

What policy options have been considered? Please justify preferred option (further details in Evidence Base)

The policy option seeks the following measures:

- (a) To oblige Ofgem to report to the Secretary of State on future capacity (based upon existing plans of market participants), peak demand in the future and its assessment of the effect of different capacity margins on the probability of demand not being met
- (b) an obligation of the Secretary of State to publish his assessment of the need for capacity in the following four years.

The EU Electricity Directive notes that monitoring may be delegated to the regulatory authority. However they are likely to continue to draw on National Grid as in the current monitoring arrangements.

When will the policy be reviewed to establish its impact and the extent to which the policy objectives have been achieved?	It will not be reviewed
Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?	Yes

SELECT SIGNATORY Sign-off For consultation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.



Signed by the responsible minister:

Date: 09/12/2010

Summary: Analysis and Evidence

Policy Option 1

Description:

Price Base Year 2011	PV Base Year 2011	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -0.8	High: -2	Best Estimate: -1.4

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0.3	0.08	0.8
High	0.6	0.16	2
Best Estimate			

Description and scale of key monetised costs by 'main affected groups'

We anticipate that the costs of this exercise broadly fall into two categories; a) upfront once-off costs in 2010-11 to run a consultation seeking input in a number of specific areas; b) annual/ongoing costs to Ofgem to collect required information, conduct analysis and produce report for Secretary of State. In total, Ofgem estimate costs in the range £319,000 to £638,000 to conduct an upfront consultation on methodological issues, and ongoing annual costs in the range £82,000 to £164,000

Other key non-monetised costs by 'main affected groups'

Costs to industry are not anticipated to be material given current system information/reporting requirements to NGET undertaken as part of the Seven Year Statement, Winter Outlook and other processes. If there is a need for further clarification on any data/analysis provided by industry, Ofgem anticipates engaging alongside NGET as part of existing processes, minimising duplication wherever possible. At this stage it is not possible to determine what incremental data (if any) will be required.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	N/A		

Description and scale of key monetised benefits by 'main affected groups'

Other key non-monetised benefits by 'main affected groups'

Benefits derive from the provision of better information to the Government with which it can make more informed policy choices to ensure electricity security supply needs are met. Also with a publication of the assesment there could be some benefits to market participants from being able to make more informed choices with regards to when and how they chose to invest and operate in the market. Enhanced information could also reduce some barriers to entry into the market for new entrants.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5%

The costings allow for some of the costs Ofgem may face should it wish to engage extrenal consultants to assist with discrete pieces of work.

Impact on admin burden (AB) (£m):		Impact on policy cost savings (£m):		In scope
New AB:	AB savings:	Net:	Policy cost savings:	Yes/No

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?	Great Britain				
From what date will the policy be implemented?	01/07/2011				
Which organisation(s) will enforce the policy?	Ofgem/DECC				
What is the annual change in enforcement cost (£m)?	0				
Does enforcement comply with Hampton principles?	Yes				
Does implementation go beyond minimum EU requirements?	No				
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded:		Non-traded:		
Does the proposal have an impact on competition?	Yes				
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?	Costs:		Benefits:		
Annual cost (£m) per organisation (excl. Transition) (Constant Price)	Micro	< 20	Small	Medium	Large
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
Statutory equality duties ¹ Statutory Equality Duties Impact Test guidance	No	
Economic impacts		
Competition Competition Assessment Impact Test guidance	Yes	
Small firms Small Firms Impact Test guidance	No	
Environmental impacts		
Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	No	
Wider environmental issues Wider Environmental Issues Impact Test guidance	No	
Social impacts		
Health and well-being Health and Well-being Impact Test guidance	No	
Human rights Human Rights Impact Test guidance	No	
Justice system Justice Impact Test guidance	No	
Rural proofing Rural Proofing Impact Test guidance	No	
Sustainable development Sustainable Development Impact Test guidance	No	

¹ Race, disability and gender Impact assessments are statutory requirements for relevant policies. Equality statutory requirements will be expanded 2011, once the Equality Bill comes into force. Statutory equality duties part of the Equality Bill apply to GB only. The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in **References** section.

References

Include the links to relevant legislation and publications, such as public impact assessment of earlier stages (e.g. Consultation, Final, Enactment).

No.	Legislation or publication
1	
2	
3	
4	

+ Add another row

Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

Annual profile of monetised costs and benefits* - (£m) constant prices

	Y ₀	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₆	Y ₇	Y ₈	Y ₉
Transition costs	0.45									
Annual recurring cost	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Total annual costs	0.57	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Transition benefits										
Annual recurring benefits										
Total annual benefits										

* For non-monetised benefits please see summary pages and main evidence base section



Microsoft Office
Excel Worksheet

Evidence Base (for summary sheets)

Policy background

1. The Government would like to enable a more comprehensive assessment of the degree to which the market is likely to supply enough electricity generation capacity. Current monitoring of security of supply is limited because it does not have a clear picture of future capacity need, since it only has broad estimates of future demand and no estimates of the required margin. The Government believes that it would be desirable for it to have available a greater level of information.
2. The Government therefore wishes to oblige Ofgem to provide the Secretary of State with an assessment of future electricity generation capacity need. In practice this would entail an estimate of the level of future peak demand (based on National Grid SYS data) and an estimate of the capacity need using a range of different methodologies for the capacity margin. The government would then publish its own assessment as part of the annual Energy Markets Outlook publication
3. The Government is responsible for monitoring security of supply issues. The EU Electricity Directive notes that monitoring may be delegated to the regulatory authority. Given their technical expertise this is a sensible allocation for these measures. However, Ofgem are likely to continue to draw on National Grid as in the current monitoring arrangements, for example they currently require National Grid to carry out the Seven Year Statement.

Proposals

1. The policy proposal is to introduce the following measures:
 - (a) An obligation placed on Ofgem to report to the Secretary of State on peak demand in the future, its assessment of what capacity margin the market ought to provide and its assessment of the effect of different capacity margins on the probability of demand not being met;
 - (b) An obligation of the Secretary of State to publish his assessment of the need for capacity in the following four years.

a) Obligation on Ofgem to estimate and report to Government on future capacity need

Requirement

2. The level of future capacity need is the level of future peak demand for electricity (GW) plus a capacity margin². The responsibility to estimate future capacity need would therefore require both an assessment of future demand and an estimate of the capacity margin.
3. Demand fluctuates with time owing to a number of factors. It is typically higher in the winter than the summer and during the day than at night. Demand and supply are measured for half-hour periods. Annual peak demand is the average demand in the half-hour in which the highest amount of electricity is demanded by all consumers in a year (averaged over 3 half-hours) and is measured by National Grid Electricity Transmission Plc ("**NGET**"), the licensed operator of the transmission system in Great Britain. Peak demand currently occurs at tea-time in the winter.
4. In its role as GB transmission system operator, NGET is authorised to coordinate and direct the flow of electricity at high voltage through network infrastructure. It is also tasked with ensuring that demand and supply balance in real time. It is authorised under a transmission licence to

² Sufficient capacity is needed to meet peak demand plus a margin. This margin is necessary to, for example, deal with unexpected power station outages.

carry out these activities and is regulated by Ofgem³. NGET is obliged under its transmission licence to provide a Seven Year Statement (“**SYS**”). The SYS must include a forecasts of demand on each part of the national electricity system.

5. As mentioned above, Ofgem would need to estimate future demand in order to provide the Secretary of State with an estimate of capacity need. Whilst the information NGET produces in its SYS may assist Ofgem to do so, the proposals will require Ofgem to provide a ‘best guess’ figure
6. There are a number of ways that the appropriate capacity margin could be determined. This could either be done year by year, with the ‘optimal’ level determined by balancing the cost of additional capacity in that year with the benefits of the additional capacity or in a more static manner in which a constant margin is specified based on, for example, maintaining historic margins or international comparators. The proposals require Ofgem to develop an appropriate methodology to estimate capacity margins.
7. In order to transparently carry out the assessment Ofgem would most likely need to develop a methodology that set out how they would evaluate the contribution of a given type of resource. This is helpful experience for any future policy development, and may also be valuable in providing information and awareness of the role that demand side response can play. This is expected to be a one-off piece of work that would be carried out before the first estimate. The level of on-going work after this would depend on the choice of methodology.

Background

8. The Government wishes to understand the consequences of a margin at a particular level in terms of what level of security of electricity supply it gives (i.e. the likelihood of electricity black-outs) since there are some political trade offs for it to take account of in choosing different levels of security of supply. Through the measures, Ofgem will be tasked with assimilating and processing the information which enables the Government to see the consequences of having a capacity margin at a certain level.
9. These measures will require Ofgem to report to the Secretary of State on:
10. What capacity margin would be required to achieve a number of alternative security standards and the associated costs. In doing this they may take into consideration what capacity margin ought to be provided by the market. In determining this, Ofgem, for example, may take into account the economically optimal range, historical data and draw on any lessons from international experiences of margins and associated costs.
11. The capacity margin required to achieve a number of alternative security standards is fundamentally an assessment of the probability that there will be insufficient capacity to meet demand at any particular time. Where peak demand is less than the capacity of the system, even though the system should be capable of meeting the maximum demand which will be required in a year there still remains a risk that any part of the system could unexpectedly fail, or other unexpected events cause an imbalance of supply and demand. These measures would require Ofgem to assess what the probability of this happening is at a number of projected capacity margins.
12. Finally it should be noted that whilst NGET currently provide a Seven Year Statement of their estimation of future demand as part of their licence condition from Ofgem. These measures would go beyond this as it would require i) advice on the appropriate capacity margin that should be maintained (taking into account any minimum system standards and operational requirements) and ii) the provision of a range of most likely scenario’s rather than a much broader range.

³ The licence was granted by the Secretary of State as a result of an exercise in 2004 to regulate the electricity industry on a GB-wide basis but the majority of subsequent regulation is the remit of Ofgem.

b) An Obligation on the Government to publish its assessment based on Ofgem advice

13. The powers sought will oblige Ofgem to provide the Secretary of State with the information on capacity need and future capacity in a report every year. There are currently obligations on the Secretary of State to report on security of energy supplies. The measures require these reporting obligations to be extended to include an assessment of capacity need as part of that obligation. This is to ensure consistency in assessment and presentation of a holistic view of the electricity sector in view of policy development. In view of this the Government will publish the Secretary of State's overall assessment. Ofgem's assessments to Government, however, will not be published.

Summary of Costs and Benefits

Costs

14. The costs would arise from incremental resource costs that could be incurred by Ofgem, NGET, or other industry parties. However incremental costs to industry (including those of NGET), are not anticipated to be hugely material since an initial consideration by Ofgem and NGET of the likely requirements suggests much of the required information is already collected from industry for the Seven Year Statement (SYS) and Winter Outlook process, so provided Ofgem could access this information from NGET in a useful format they would not anticipate the need to collect much additional information from industry.
15. Therefore its anticipated that the costs of the measure broadly fall into the following categories:
 - Upfront once-off costs in 2010-11 to run a consultation seeking input in a number of specific areas; and
 - Annual and ongoing costs to Ofgem to collect required information, conduct analysis and produce report for Secretary of State.
16. In total, Ofgem estimate costs in the range £319,000 to £638,000 to conduct an upfront consultation on methodological issues, and ongoing annual costs in the range £82,000 to £164,000 to produce the report for the Secretary of State. It is important to note that the annual cost estimates assume that Ofgem will rely quite heavily on information from NGET collected for the purposes of the SYS and the Winter Outlook. These measures will give Ofgem the power to require information from NGET (as a licence holder) for these purposes, and Ofgem has indicated that, after initial discussions with NGET, much of the required information appears available in a suitable form.
17. It should be noted that the cost estimates are illustrative and approximate only at this stage. As such they should not be considered to represent a formal Ofgem position.

Upfront consultation process

18. Ofgem anticipate a need to conduct quite a substantial upfront consultation process in 2010-11 to establish the methodological approach. Their initial thinking is that the consultation would need to focus on key methodological issues, including (but not necessarily limited to):
 - Methodologies for estimating a capacity margin in accordance with the draft Policy Instruction, which would include an examination of the value of lost load (VoLL) for electricity consumers;

- Approach to estimating peak demand in the SYS, whether alternatives to the NG SYS approach should be considered including with respect to treatment of Distributed Generation (DG) and Demand Side Response (DSR), and issues associated with generating a central estimate (e.g. probabilistic modelling);
- De-rating factors for different generation technologies (and interconnectors), which would include an examination of historical peak availability in GB, international examples, academic and engineering studies; and
- How to measure the contribution from DSR to security of supply, building on Ofgem's existing work on DSR, looking in particular at the 'firmness' provided by demand side resources at times of peak demand.

19. These are significant and complex issues, worthy of substantive consideration. Ofgem would anticipate a consultation process comprising some or all of the following stages:

- Issues / discussion paper(s),
- Draft framework and approach paper,
- Final framework and approach paper.

20. In total, Ofgem would anticipate the process running for 6-12 months.

21. In developing the analysis Ofgem may also wish to engage consultants to assist on discrete pieces of work, with expertise across both economics and engineering. This has been reflected in the cost estimates.

22. The table below provides a rough estimate of the resources required to carry out such a consultation exercise, with the range reflecting an exercise of between 6 and 12 months. All estimates provided are approximate and should not be taken as definitive.

Table 1: Upfront consultation – approximate administrative costs (£, 2010)

Resources	FTEs	Approx rate (£ per day)	Days (per week)	Cost	
				Low (26 weeks)	High (52 weeks)
<u>Ofgem*</u>					
Management	2	£600	2	£62,400	£124,800
Band D	2	£330	5	£85,800	£171,600
Band C	3	£225	5	£87,750	£175,500
<u>Consultants</u>					
Economic	1	£1600	1.5	£62,400	£124,800
Engineering	1	£1600	0.5	£20,800	£41,600
<u>Total</u>				£319,150	£638,300

*Ofgem costs include overheads (e.g. pensions, National Insurance)

23. Ofgem would anticipate that interested parties would also incur some incremental costs in preparing responses to the consultation documents; however they have not attempted to estimate these costs given the uncertainties. However it should be noted that most interested parties are likely to maintain a resource dedicated to regulatory and policy matters, therefore preparing responses to this consultation could be considered part of 'day-to-day business'.

Preparation of annual report

24. The policy requires Ofgem to provide a report to the Secretary of State by 1 September of each year. At a high-level the report must contain, for each of the four following years:

- 1) An assessment of forecast annual peak demand (in MW);
- 2) An assessment of the theoretical capacity margin the market is most likely to provide; and
- 3) An assessment of the effect of different capacity margins on the probability of demand not being met.
- 4) Assessments/estimates to include a narrow range of most likely scenario's

25. Ofgem anticipate that, to a large extent, they could utilise information collected by NGET on an annual basis for the purposes of producing 1) and 2) listed above. However there may be a need

to collect more information from industry on demand side response (DSR) and distributed generation (DG), which may incur some costs. However much of this information already exists for Balancing Mechanism purposes (e.g. interruptible contracts) and/or other regulatory purposes (e.g. Ofgem DG incentive under DPCR5), therefore at a high level Ofgem do not anticipate any material incremental costs in terms of information collection on an annual basis. If there is a need for further clarification on any data or analysis provided by industry, Ofgem anticipates engaging alongside NGET as part of the SYS process, minimising duplication of effort wherever possible. Moreover where requests are made these measures will aim to ensure its proportionate to the cost and requests are carefully targeted to the information required.

26. Subject to quality assurance, Ofgem state they could utilise NGET's analysis and modelling capabilities, however there would likely be some incremental costs incurred producing analysis for inclusion in the report, in particular incorporating their analysis on de-rating factors. As part of this exercise they may utilise their internal security of supply modelling capability, as well as potentially data from external sources, both to test the NGET assumptions and to conduct their own analysis as appropriate.

27. Ofgem anticipate that the assessments at 3) and 4) above will constitute the major incremental exercise on an annual basis, and would anticipate the need to dedicate incremental resources to these tasks.

28. In sum, they would anticipate the need to devote resources to the following tasks:

- DSR and DG information collection, including ongoing development of templates, information requests, and analysing responses;
- Data analysis and modelling of peak demand and future capacity;
- Assessment of capacity need, including estimation of capacity margins under methodologies;
- Coordinating all input (including from NGET) and drafting the report.

29. Table 2 below summarises approximate estimate of the annual resources required to produce the report for the Secretary of State, which is anticipated to take between 3 and 6 months. Ofgem do not at this stage anticipate the need for external consultancy input and all estimates relate to use of internal Ofgem resources. As above, all estimates are approximate only.⁴

⁴ Note that NG have advised that to coordinate and draft the SYS requires one dedicated full-time equivalent (FTE) resource for a period of approximately four months per annum. This does not take account of the substantial technical and system development resources at NG devoted to the analysis which feeds into the report.

Table 2: Annual report – approximate administrative costs (£, 2010)

Resources	FTEs	Approx rate (£ per day)	Days (per week)	Cost	
				Low (13 weeks)	High (26 weeks)
<u>Ofgem*</u>					
Management	2	£600	2	£31,200	£62,400
Band D	1	£330	5	£21,450	£42,900
Band C	2	£225	5	£29,250	£58,500
<u>Total</u>				£81,900	£163,800

*Ofgem costs include overheads (e.g. pensions, National Insurance)

33. There may be some incremental costs to NGET in conducting further analysis as requested by Ofgem, and also for DSR and DG providers to the extent they are providing information for the first time. Ofgem have not attempted to estimate these costs given the uncertainties.

Net Costs to Business

34. Costs of the proposal are primarily incurred by Ofgem. As already stated costs to business are not expected to be material, this is because much of the information is provided by business to NGET as part of the SYS process or other regulatory processes. These processes also necessitate a degree of dialogue with business on any queries or clarifications with regards to the data provided. Ofgem anticipates any requests to be made alongside these so at this stage it is not possible to determine what additional data (if any) might be incremental to this, moreover any requests that may be incremental are not likely to have a significant cost (if any) since these are likely to be an extension of existing dialogues that are in anycase taking place.

Benefits

35. The benefits would derive from more information provision to government with which it can make more informed assessments of future electricity capacity need, security of electricity supply and this would enhance policy development. In addition a publication of this assessment could derive some additional benefits to the market from enhanced information provision these could include the following;
- Could allow some market participants to make better choices with regards to when and how they chose to invest and operate in the market. There could be benefits to security of supply from this if the provision of information allows the market to act to deliver timely investments.
 - Could reduce some barriers to entry in the market, where information held by incumbents are not available or easily obtained by new entrants to make their investment decisions on.

Implementation, monitoring and evaluation

36. The proposals are to be implemented by 2011, following an industry consultation. Ofgem will be responsible for implementing, administering and monitoring the capacity need information reporting requirements on an annual basis.

Specific impact tests

Competition assessment

37. The benefits of enhanced information provision could assist new entrants and therefore this could act to reduce any barriers to entry. Particularly where this information is not easily available or collectable, hence this could enhance the general competitiveness of the market.

Other impacts

38. No additional impacts are expected on small firms, human rights, race equality, gender, disability, health, environment, legal aid, the judicial system, sustainable development or the rural economy.

Annexes

Annex 1 should be used to set out the Post Implementation Review Plan as detailed below. Further annexes may be added where the Specific Impact Tests yield information relevant to an overall understanding of policy options.

Annex 1: Post Implementation Review (PIR) Plan

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below. If there is no plan to do a PIR please provide reasons below.

<p>Basis of the review: [The basis of the review could be statutory (forming part of the legislation), it could be to review existing policy or there could be a political commitment to review];</p>
<p>Review objective: [Is it intended as a proportionate check that regulation is operating as expected to tackle the problem of concern?; or as a wider exploration of the policy approach taken?; or as a link from policy objective to outcome?]</p>
<p>Review approach and rationale: [e.g. describe here the review approach (in-depth evaluation, scope review of monitoring data, scan of stakeholder views, etc.) and the rationale that made choosing such an approach]</p>
<p>Baseline: [The current (baseline) position against which the change introduced by the legislation can be measured]</p>
<p>Success criteria: [Criteria showing achievement of the policy objectives as set out in the final impact assessment; criteria for modifying or replacing the policy if it does not achieve its objectives]</p>
<p>Monitoring information arrangements: [Provide further details of the planned/existing arrangements in place that will allow a systematic collection systematic collection of monitoring information for future policy review]</p>
<p>Reasons for not planning a PIR: [If there is no plan to do a PIR please provide reasons here] Ongoing monitoring. Evidence will become available with each assesment</p>

Add annexes here.