



**Association
for the
Conservation
of Energy**

Department for Business, Enterprise and Regulatory Reform Consultation: *“A consultation on smart & advanced metering for small and medium sized businesses and sites, and other non- domestic customers”*

ACE response – August 2008

Introduction to the views of ACE

The Association for the Conservation of Energy is a lobbying, campaigning and policy research organisation, and has worked in the field of energy efficiency since 1981. Our lobbying and campaigning work represents the interests of our membership: major manufacturers and distributors of energy saving equipment in the United Kingdom. Our policy research is funded independently, and is focused on three key themes: policies and programmes to encourage increased energy efficiency; the environmental, social and economic benefits of increased energy efficiency; and organisational roles in the process of implementing energy efficiency policy. We welcome this opportunity to respond to this consultation.

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Summary of the ACE's response to the consultation

1. The Association recognises that the current proposals on advanced and smart metering stem from the requirements of the EC Directive on Energy End Use Efficiency and Energy Services, which was due to be implemented in May 2008. As this deadline has already passed, the Association **stresses the need for prompt action to roll-out smart meters and improve billing for both domestic and business customers** so that the potential benefits can be realised as soon as possible.
2. The Association believes that Government should **mandate the roll-out of smart meters to all micro, small and medium sized businesses covered by this consultation within 10 years**. BERR's impact assessment shows that this option has the highest Net Present Value (the Association acknowledges that this impact assessment does not include micro-businesses, which are assessed as part of the domestic sector impact assessment). With regards to the other roll-out options, the Association believes that a 20 year timeframe is too long and that it would be illogical to roll-out advanced meters instead of smart meters (or a mixture of both types of meters) because a smart meter roll-out would be cheaper (because of the economies of scale from a combined domestic and micro, small & medium sized business roll-out) and smart meters allow suppliers to provide customers with real-time tariff information, which advanced meters do not. The Association also believes that **smart meters should also be rolled-out within the next 10 years to the domestic sector** (which is not covered by this consultation).
3. The Association is extremely concerned that **no billing requirements are being mandated for any businesses**, including the micro, small and medium sized businesses covered by this consultation. This is a **clear breach of Article 13(2) and 13(3) of the EC Directive on Energy End Use Efficiency and Energy Services**. Article 13(2) requires "*Billing on the basis of actual consumption shall be performed frequently enough to enable customers to regulate their own energy consumption*". The majority of micro, small and medium sized businesses only receive accurate bills once a year¹. ACE does not believe that this is anywhere near accurate or frequent enough to enable customers to respond to changes in energy prices, or seasonal variations affecting energy demand to regulate their own energy consumption - and therefore it is in contravention of the Directive.
4. In addition, ACE also believes that the Government is in contravention of Article 13(3)(b) of the Directive, which sets out the information that bills should

¹ BERR (August 2007). Energy Billing and Metering: Changing Consumer Behaviour. www.berr.gov.uk/files/file40456.pdf, page 19

contain, including: "...(a) current actual prices and actual consumption of energy; (b) comparisons of the final customer's current energy consumption with consumption for the same period in the previous year, preferably in graphic form; (c) wherever possible and useful, comparisons with an average normalised or benchmarked user of energy in the same user category; (d) contact information for consumers' organisations, energy agencies or similar bodies, including website addresses, from which information may be obtained on available energy efficiency improvement measures, comparative end-user profiles and/or objective technical specifications for energy-using equipment." There are currently no requirements for suppliers to provide this information to business customers and therefore this is in contravention of the Directive.

5. Below is a more detailed discussion of ACE's position on the smart meter roll-out to micro, small and medium sized businesses and better billing for businesses. We have also responded to specific questions from the consultation document (although only those questions of relevance to ACE are copied and answered below).

Smart meters for all micro, small & medium sized businesses in 10 years

6. The Association believes that **Government should mandate the roll-out of smart meters to all micro, small and medium sized businesses within 10 years**. In this context, small and medium sized businesses are those businesses with gas consumption between 73.2 MWh and 732 MWh per annum and those businesses in electricity profile classes 3 and 4 and micro-businesses are those in electricity profile classes 1 and 2 and those with gas consumption of less than 73.2 MWh per annum. The Association also believes that smart meters should be rolled out within 10 years to the domestic sector, although we acknowledge that this will form part of a separate consultation.
7. The Association also believes that **all smart meters should come with a portable display device**. A portable display device can be an important tool used for raising awareness of energy consumption and encouraging energy-saving behaviour amongst building users. The display must be able to:
 - a) Provide a maximum of half-hourly readings
 - b) Allow comparisons over time
 - c) Store data at least from the previous week
 - d) Show account data
 - e) Show energy consumption in terms of cost, kWh and CO₂ emissions
 - f) Provide alerts and peak pricing information
 - g) Not use more than 1-2W of electricity
8. **Customers should also be able to access their consumption information remotely, for example via a computer**. This enables more in-depth analysis of

the consumption data. Customers should automatically be able to remotely access their raw consumption data as well as basic information derived from this data, such as graphical energy consumption profiles over a day/week/month etc. This **basic information should be provided in real-time and free of charge**. Suppliers then have the option of offering customers further data analysis or data analysis tools and tailored information and advice, which they could charge customers for.

9. The Association considers that a roll-out of smart meters to all micro, small and medium sized businesses within 10 years is the best option for the following reasons:
 - a) It covers all micro, small and medium sized businesses, who are not currently required to have either advanced or smart metering
 - b) Smart meters are superior to advanced meters because they allow for two-way communication between the supplier and the meter, thereby giving customers access to accurate, real-time information on the cost of energy (communicated from the supplier to the meter), which is likely to be the greatest motivator to reduce energy consumption for business customers
 - c) There is greater incentive for suppliers to provide accurate bills than there would be if advanced meters were installed because customers are able to see the actual cost of their energy (however, the Association believes that suppliers should be required to provide frequent, accurate bills- see paragraphs 11 - 14 below)
 - d) Under a 10-year roll-out the benefits are realised faster than under a 20-year timeframe
 - e) Option 3a has the highest Net Present Value of all of the options assessed
 - f) There are likely to be less interoperability issues with a complete smart meter roll-out than there would be if a mixture of advanced and smart metering was installed
 - g) This option benefits from the economies of scale that would be provided from rolling-out smart meters in both the micro/small/medium sized business and domestic sectors
 - h) Customers can be offered time-of-use tariff options
 - i) Including all micro, small and medium sized businesses negates the need to segment this business market and would mean that there would be no need to change meters if businesses moved between electricity profile classes or gas consumption categories

10. As the consultation points out, *“Energy costs are of increasing importance to business customers, and their chief interest in smart or advanced metering is likely to be as a means of reducing or controlling these costs”*. ACE agrees with this statement and consequently we believe that it is therefore essential that ALL business customers covered by this consultation are provided with smart meters, not advanced meters, as soon as possible.

Better billing

11. The Association is extremely concerned that **no billing requirements are being mandated for the micro, small and medium sized businesses** covered by this consultation, or in fact for any business customers. This is a **clear breach of Article 13(2) and 13(3) of the EC Directive on Energy End Use Efficiency and Energy Services**, which state:

“2. Member States shall ensure that, where appropriate, billing performed by energy distributors, distribution system operators and retail energy sales companies is based on actual energy consumption, and is presented in clear and understandable terms. Appropriate information shall be made available with the bill to provide final customers with a comprehensive account of current energy costs. Billing on the basis of actual consumption shall be performed frequently enough to enable customers to regulate their own energy consumption.

3. Member States shall ensure that, where appropriate, the following information is made available to final customers in clear and understandable terms by energy distributors, distribution system operators or retail energy sales companies in or with their bills, contracts, transactions, and/or receipts at distribution stations:

- (a) current actual prices and actual consumption of energy;*
- (b) comparisons of the final customer's current energy consumption with consumption for the same period in the previous year, preferably in graphic form;*
- (c) wherever possible and useful, comparisons with an average normalised or benchmarked user of energy in the same user category;*
- (d) contact information for consumers' organisations, energy agencies or similar bodies, including website addresses, from which information may be obtained on available energy efficiency improvement measures, comparative end-user profiles and/or objective technical specifications for energy-using equipment.”*

12. **The majority of micro, small and medium sized businesses only receive accurate bills once a year.** The Association strongly disagrees with the Government's view that *“billing on the basis of an annual accurate meter read is sufficiently frequent to enable customers to regulate their energy consumption²”*. **ACE does not believe that this is anywhere near accurate or frequent enough** to enable customers to respond to changes in energy prices, or seasonal variations affecting energy demand to regulate their own energy consumption - and therefore it is in contravention of the Directive.

13. There is also a clear breach of Article 13(3) of the Directive because **there are no requirements for energy bills for businesses to contain comparisons** either

² BERR (August 2007). Energy Billing and Metering: Changing Consumer Behaviour. www.berr.gov.uk/files/file40456.pdf, page 19

between their own consumption in different years or with an average user. It is impossible for the provision of one accurate bill per year, with no requirements on its contents, to meet the requirements of Article 13(3) of the Directive.

14. **With the installation of smart meters there is absolutely no reason not to mandate the provision of frequent (i.e. monthly), accurate bills to all business customers.** It is important that smart metering is accompanied by accurate and frequent billing because they both provide valuable forms of feedback on consumption and different customers may respond better to different forms of feedback.

Specific questions and answers

Market segmentation

15. **Do you have any views, based on your experience, on our market segmentation and the options we have set out?**

If all micro, small and medium sized businesses are provided with smart meters, as the Association believes they should be, there would be no need to segment the market and no associated issues with businesses that move between segments.

Economics of smart and advanced metering and roll-out options

16. **Based on your experience, do you believe that there is already an economic case for providing advanced or smart metering to business customers or segments of the business market?**

The Association believes that Government intervention is required to mandate the roll-out of smart meters because there are externalities (such as the social and environmental benefits of reducing energy consumption and the associated CO₂ emissions and benefits to businesses from reduced energy bills) associated with smart meters that do not form part of the business case for suppliers to roll-out smart meters to all businesses.

17. **If arrangements separate from those for the domestic market were made for small business sites, when should those arrangements begin?**

The Association believes that smart meters should be rolled-out to all micro, small and medium sized businesses and the domestic sector and therefore separate arrangements would not be necessary. The roll-out in the domestic and micro/small/medium sized business sectors should occur at the same time to maximise the economies of scale and it should begin as soon as possible in order for the benefits to be realised as soon as possible.

18. **Are there drawbacks to an accelerated roll-out? If so, what are they?**

The only drawback to an accelerated roll-out is the cost associated with stranded assets, but this is outweighed by the faster realisation of the benefits.

Impact assessment

19. Assuming choice on behalf of both customers and suppliers, do you have any views on the likely division between smart and advanced metering?

The Association believes that suppliers should have to provide smart meters, which have more functionality than advance meters, rather than giving customers a choice.

Choice of meter and supply of information

20. For modelling purposes, we have assumed that businesses within a particular category would receive a smart or advanced meter. Would it be helpful to offer customers and suppliers a choice between an advanced or smart meter, where a smart meter is practicable?

No. This would create issues in terms of interoperability, systems required to support the different meter types and uncertainty in the market for the levels of smart versus advanced meters required. This would also require customers to be fully informed of the benefits associated with the different types of meters before they made their choice. The primary aim of rolling out smart meters should be to maximise energy savings by providing feedback on consumption, and therefore smart meters are superior because they also provide cost information, which is a key concern for business customers.

21. If smart metering were required for smaller sites, should customers with larger sites have the choice of installing advanced, rather than smart metering at smaller sites?

It would be preferable if they could choose to have smart metering installed at their larger sites.

22. Would customers like to see information about your gas or electricity use stored and shown on a display, or would they prefer to access information about your use remotely?

As a small organisation, the Association would like to see our consumption information displayed on a portable display as well as being able to access information remotely via a computer.

23. Would customers prefer to access information by some other medium, eg television or mobile telephone.

No. We think that a portable display and remote access through a computer are the best ways for us to access consumption information.

24. What might business customers gain or lose from the provision of an advanced, rather than a smart, meter?

Advanced metering does not provide any benefits over smart metering. Business customers gain benefits from smart metering that are not available with advanced metering because smart meters allow for two-way communication between the supplier and the meter. Therefore customers can

be provide with real-time tariff information as well as time-of-use tariff offers, which is not available with advanced metering. Having access to real-time energy cost information is a crucial feature of meters for businesses. This can encourage energy savings and therefore financial savings, enabling businesses to increase their profitability.

25. What are your views on the economic, telecommunications or other impacts on a universal roll-out of smart meters of removing segments of the business market from such a roll-out?

It is illogical to remove segments of the business market from a “universal” roll-out of smart meters. Businesses have already been left out of better billing requirements, if they are excluded from a smart meter roll-out as well, they will be provided with no useful feedback on their energy consumption.

26. Should temporarily metered sites be excluded from the application of any requirement for advanced or smart metering?

This should depend on a cost benefit analysis taking into account how long the site will be in use.

27. Should sites that are currently unoccupied or used very occasionally be excluded, or are there benefits to suppliers and customers in providing advanced or smart metering for such sites?

The Association believes that it is justifiable not to install smart metering in dormant sites or sites only used occasionally, on the condition that if the site comes into permanent use, smart metering should be installed.

Experience of providing smart or advanced metering and other issues

28. What barriers to smart or advanced metering exist in the current market?

There are social and environmental benefits of smart meters, which do not form part of suppliers’ business case for rolling out smart meters. In addition, suppliers may feel threatened by the prospect of reduced energy demand from smart metering.

29. What would happen in these sectors if no mandate were given?

There would not be a wide-scale roll-out of smart meters- see response to question 16.

30. Providing smart or advanced metering at certain sites may carry unusually high costs. Should there be provision for exempting such sites from any requirement on the grounds of cost-effectiveness. If so, how might a trigger point for any exemption be set?

The Association does not believe that a complete exemption should be given in this case. Instead, evidence of why the costs are so high should be presented to, and approved by Ofgem, who could then grant an extension to the date by when the smart meter must be installed so that the cost issues can be resolved.

31. Would there be demand for dual-fuel metering in the sectors under discussion?

The Association can see no reason why there would not be.

32. How can continued innovation in smart and advanced metering be encouraged and promoted?

Government needs to finalise the smart metering policy as soon as possible in order to encourage innovation. Manufacturers and installers of smart metering and display technologies have been waiting for the go-ahead from Government for some time now, so once Government confirms the size of the market for their products by mandating a smart meter roll-out, manufacturers and installers will have the green light to develop and promote their products.

33. In light of increasing use of microgeneration technologies, should a requirement for an export measurement facility be incorporated in smart or advanced metering arrangements?

Yes, definitely.

34. Should meters have the capacity to measure carbon-saving?

Yes, definitely.

Information, services and support

35. What support in terms of publicity or other activities should be provided in any roll-out of advanced or smart meters to small business?

The roll-out of smart meters alone will not necessarily result in behavioural change. The Association believes that a holistic approach should be taken, so that smart meters are rolled-out as part of a wider campaign to raise awareness and educate people on how to reduce energy use in the workplace and at home and also about climate change issues in general. It is also vital that businesses understand how to use their smart meter and display and the associated data (accessed remotely), in order to maximise the benefits of smart metering. Therefore businesses customers need to be provided with information or training on how to use their display device, how to access their data remotely and how to interpret information derived from their raw data. If diagnostic tools are provided for the customer to analyse their raw data, customers will also need training and/or information on how to use these tools. This is also an ideal opportunity to promote energy-saving measures and renewable energy technologies to business customers. The Carbon Trust should play a key role in this publicity and support.

36. Would business customers be able to evaluate and apply usage information to change their energy use?

This is likely to depend on whether or not they have time to do this. Providing basic information derived from a customer's raw consumption data, such as

graphical energy consumption profiles over a day/week/month etc, would help business customers to evaluate their energy use.

37. What services - from your supplier or from a third party - would business customers be prepared to pay for?

Presumably businesses, particularly those that are time-limited and/or do not have an energy manager, would be willing to pay for additional analysis and monitoring of their energy consumption and advice on how to reduce consumption if a favourable payback period could be demonstrated.

38. What is users' and service providers' experience of the level and costs of energy management advice and the benefits accruing from it?

There are clear benefits from the provision of energy management advice, as demonstrated by the Carbon Trust study on advanced metering for SMEs, which found that the highest energy savings were achieved by providing advanced metering along with consumption profiles and energy saving recommendations via email³.

Information provision and costs

39. What level of information – half-hourly, daily etc – would particular types of business be likely to require?

The Association strongly believes that smart meters should provide a minimum of half-hourly data storage in order to maximise the potential for customers to identify energy saving opportunities. A Carbon Trust study⁴ on advanced metering for SMEs noted that *“Using metering for effective energy management requires consumption to be detailed at regular periods throughout the day”*. This allows customers to make accurate comparisons between different days and times of the day to identify potential energy saving opportunities including baseload reductions, process optimisation and peak usage reduction.

40. In what form would that information be helpful – eg accessing account on website, displayed in premises etc? Can conclusions be drawn about the sectors of the market that would find one approach more valuable than another?

The Association believes that micro, small and medium sized businesses should have access to information both via a display and remotely via a computer. These two methods of accessing information play different but valuable roles. A portable display device can be an important tool used for raising awareness of energy consumption and encouraging energy-saving behaviour amongst building users, whereas accessing information remotely via a computer allows for more in-depth analysis, which can be helpful for energy management and assessing the impact of energy saving measures.

³The Carbon Trust (2007). *Advanced metering for SMEs- Carbon and cost savings*.p.3. UK

⁴The Carbon Trust (2007). *Advanced metering for SMEs- Carbon and cost savings*.p.7. UK

41. What data or information do suppliers now provide free? What might they provide free in the event of a wider roll-out of smart or advanced metering to business customers?

The Association believes that suppliers should provide customers with a display device and remote access to their raw consumption data as well as basic information derived from this data, such as graphical energy consumption profiles over a day/week/month etc (see paragraph 8) for free.

42. Should Government regulate in broad terms – for example, by specifying cost reflectivity - the charges suppliers could make for data and information provision?

Yes, the Association believes that Government should mandate that basic information is provided for free (see question 41 for the type of information that we believe should be provided free of charge) and they should also regulate the cost of more detailed and tailored analysis and the provision of energy services that is charged for to ensure that businesses pay a fair price for the information provided.

43. Would business customers pay for any higher level information? To what extent would charging discourage access to detailed usage information?

See response to question 37. Whether or not charging would discourage access to detailed usage information would depend on the cost of the information and the perceived benefit arising from it. If the supplier can demonstrate that the information will help to reduce energy bills and has a favourable payback period so that the cost of the advice and the energy saving measure is offset by the energy savings, presumably businesses would be willing to pay for such advice.

Interoperability

44. Is interoperability of meters an essential part of any roll-out of advanced or smart meters to smaller business sites?

Yes, interoperability is important so that businesses are able to change suppliers without a problem.

45. If so, how should such interoperability be promoted?

Guidelines should be set by Ogem in consultation with relevant stakeholders. Interoperability issues can be reduced by rolling out smart meters to all micro, small and medium sized businesses, rather than rolling-out a mix of advanced and smart meters.

46. How might agreement on interoperability in the smaller business sector help deliver interoperability arrangements for smart meters in the domestic sector?

An interoperability agreement for the micro, small and medium sized business sector should also serve for the domestic sector.

Installation capacity

47. Could meter-providers install substantial volumes of advanced or smart meters for business customers over a fixed time-period?

Meter providers need to know the number of smart meters needed to ensure that supply meets demand. This is another benefit of mandating the roll-out of only smart meters, rather than allowing customers to choose between smart and advanced metering.