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Summary of responses to the consultation entitled 'Improving the energy performance of domestic cooking appliances'

July 2008

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1 Introduction

1. On 5 December 2007, following the publication of the Energy White Paper, the Government launched a domestic cooking products consultation paper¹. Interested parties were invited to provide comments by the end of February 2008. AEA Energy and Environment managed this consultation, as lead contractor of the Government's Market Transformation Programme (MTP).

2. The paper (chapter 4 of the consultation paper) set out the Government's current evidence, analysis, indicative targets and eco-design standards for domestic cooking products that are sold and brought into use in the UK. The consultation paper was directly circulated to over 350 organisations and individuals. In addition, it was published on the MTP website and open to all interested parties for comment. This consultation is part of a wider annual review and policy development process, supporting delivery of the Government's objectives for energy and for sustainable consumption and production.

3. The responses have been reviewed and are reported in the following sections:

- Section 2 summarises the quantity and nature of responses received.
- Section 3 gives a summary of the responses by consultation question and the Government's response.
- Section 4 details the next steps in the process.

4. Appendix 1 lists the stakeholders who provided a response. None wished to remain anonymous.

2 Overview of responses

5. A total of 6 responses were received representing one government organisation, one university, two appliance manufacturers and two trade associations. These were the Energy Saving Trust (EST), Loughborough University, SBGI (on behalf of gas cooker manufacturers), 2D Heat Ltd, Sabaf and AMDEA.

6. One stakeholder did not directly address the questions however we have aimed to structure their comments in response to the questions in this document. Their main comments related to their perceived inequality in the market between gas and electric products and the lack of information on hobs. They supported a single efficiency label for equivalent products. One stakeholder's comments related mainly to gas product issues.

¹ The original domestic cooking products consultation document can be downloaded at www.mtprog.com/cms/whitepaper/

7. One stakeholder provided information on a new innovative development in electric elements and the potential impact of these new developments on the sector.

8. Another stakeholder referred to the ongoing work on EuP and some recent initiatives looking to improve the efficiency of kettles.

3 Summary of topics raised and the Government's response.

Question 1: Are there any other market or technological trends or factors that should be taken into account in this market overview?

Summary table for Question 1

Key topics raised	Number of comments
Suggests that paper focuses on electrical products at expense of gas products	2
Questions whether household practice had been considered	1
New technological trends described	2
Work on testing methodology for kettles	1

9. This question relates to the information provided in the consultation document which sets out the current trends in the domestic cooking product market (electric and gas ovens and hobs, microwave ovens and kettles) in terms of energy efficiency, innovation in these products and prices paid by consumers for these products.

Five stakeholders responded to this question.

10. One stakeholder questioned whether the anecdotal tendency towards multiple cooking events in households, rather than cooking one meal for a family, had been taken into account in the projections.

11. Two stakeholders felt the focus was on electrical products. One mentioned the lack of gas products statistics in the market overview section. The other stakeholder felt that it was lucky that householders tended to favour gas hobs, as gas hobs are considered more energy efficient, despite the focus on electrical products in this paper and by electrical products manufacturers and retailers.

12. In terms of technological trends or factors, two stakeholders pointed out new developments. One mentioned the new Series III gas burners which are shown to be around 9% more efficient than the Series II burners. Series III burners are available on the market although the market is still dominated by Series II, yet there is no price difference if the same quantities are purchased. Another stakeholder mentioned their novel flat heating technology which they are targeting as replacements for traditional sheathed coil wire heating elements. A main difference is the expected 40-45% energy savings over traditional technology. Other expected improvements are: that they are expected to be as rapid as equivalent gas

appliances, they are easy to clean and have other enhanced design features.

13. One stakeholder is currently in discussions with EST and other interested parties regarding the energy consumption of kettles. The aim is to develop a standard test methodology that is more practical, consistent and cost effective, and that allows product designers / manufacturers to predict the energy consumption of their products with greater confidence.

Government response

14. The MTP models make assumptions about average energy used by products in the preparation of food in the home. The figures were derived from studies in the UK and EU undertaken some time ago. Since these figures were generated there may have been changes in individual household habits including more multiple cooking events, spending less time in food preparation and cooking, and changes to the types of food purchased. It is not known if there has been an impact on typical household energy consumption in the cooking phase as a result of these changes. Cost and time restraints prevent further detailed modelling. However, in our view, there still needs to be a focus on reducing the energy consumed each time the appliance is used.

15. The perceived bias regarding gas and electric appliances has come about because the lack of data available regarding gas appliances. As gas appliances are likely to have lower CO₂ emissions in use than electric ones we consider that we need to continue to focus on reducing the consumption of electric products in the first instance.

16. The gas hobs model will be revised to take account of the Series III gas burners. Information about technologies that are close to market is also always welcome.

17. Effective policy measures need reliable test methods and standards. Defra notes the work being done to develop a practical, consistent and cost effective test method for kettles.

Question 2: Do the performance values shown in the tables in the Appendix cover the right products and are they set at the right levels?

Summary table for Question 2

Key topics raised	Number of comments
Sought clarification on assumptions/definitions	1
Additional figures provided	2
Cautioned targets for specific technologies	1
Too simplistic to combine individual product types	1
Impact of energy prices on market	1

18. This question refers to the average energy consumption levels for electric ovens and standby consumption for microwave ovens and gas ovens that are anticipated under the P1 projection for the years 2000 to 2020.

Five stakeholders responded to these issues.

19. One felt that the standby energy consumption figures for gas ovens presented were realistic in principle. However, they sought clarification on exactly what kind of oven or cooking appliance the figures related to, the definition for 'standby' and the method of measuring the standby value.

20. One stakeholder provided additional data suggesting that the best available induction hobs use more than 500 kWh/year and that most UK hobs are traditional radiant heaters operating at more than 600 kWh/year. They also point out that the 3Wh standby consumption figure is 'good' as many operate much higher than this. They felt that even with efficiency improvements in induction hobs they still expect total consumption (operation and standby) to be more than 500 kWh/year.

21. The stakeholder also described a scenario if electric cooking appliances across Europe were replaced with 25% electric hobs and 75% gas hobs. This would result in primary energy savings of around 4 million tonnes of oil equivalent (according to their calculation). Another stakeholder provided their views on possible efficiency savings if their novel flat heating technology was introduced. By consuming 40% of the energy used by traditional electric cookers, they estimated a reduction of 2.5×10^9 kWh per year, if all 13.2 million electric cookers in the UK were replaced.

22. One stakeholder urged some caution when championing a certain technology in long-term targets. This may discourage some manufacturers from exploring other avenues of innovation and technologies if they can only receive Government incentives for using a certain type of technology.

23. The other stakeholder understood the lack of availability of performance values for hobs. However, remarked that if such tables are to be used in supply chain interaction (e.g. via the Red/Green calculator) then some form of performance indication is required; even if it is only technology differentiation.

24. One felt unable to comment due to the limited available data behind these graphs. They take the view that the rate of increase in energy price will, to some extent, determine the take up of energy efficient appliances. On standby, they felt that the transition to 1 watt by 2011 was debatable.

Government response

25. The definition of standby used is described in MTP Briefing Note BNCK01¹. An average standby of 5 W was found on electric ovens tested in 2004, and our current assumption is that gas ovens have similar levels of standby. The standby was measured when the oven was not performing any function, except for the clock or other display that is on all the time. It was measured using a calibrated power analyser.

¹ BNCK01: Assumptions underlying the energy projections of cooking appliances
<http://www.mtprog.com/cms/product-strategies/subsector/cooking-appliances>

26. The energy saving potential of induction hobs used in the models is based on the claims made by manufacturers. We would welcome test data that demonstrates real-life situations using different appliances. There is currently insufficient evidence available to develop a 'real life' figure.

27. Information about new technologies on the market is always welcome in order for changes to be made to estimates of potential savings.

28. Government policy to reduce energy consumption from products is intended to be technology neutral and would be based on achieving certain levels of performance rather than picking a particular technological solution.

29. More data on product performance would be required for a Red/Green calculator to be established for cooking products. The data would also have to be agreed by industry stakeholders before the calculator was implemented.

30. MTP data and assumptions are available on the MTP website. The assumptions do not quantify the contribution of particular policies or market conditions to energy saving or efficiency gains.

Question 3: In the areas of market analysis, projections and targets, should consideration be given to any additional measures, risks or strengthening initiatives?

Summary table for Question 3

Key topics raised	Number of comments
Realistic household practices	1

31. The consultation chapter outlines the intention to monitor progress against the P1 target. It acknowledges that the market may develop in a different direction and the real life performance of products may not reflect the performance of products under test conditions.

Only one stakeholder responded to this question.

32. They raised the issue of household practices and anecdotal evidence that consumers now cook not one 'family' meal but multiple 'meals'. They suggest it might be useful to consider a life cycle analysis to compare ready meal manufacture/preparation to traditional meal manufacture/preparation.

Government response

33. Micro analysis of changes in domestic cooking habits is beyond the scope of the current consultation. The focus is on improving the energy consumption of products in use and assumes that savings will be delivered to consumers, although this may vary depending on how they use them. Under its Food Chain Programme, Defra has a number of initiatives aimed at measuring greenhouse gas emissions embedded in the food chain¹, this includes consumer use.

¹ Link to Defra Food Chain Programme <http://www.defra.gov.uk/foodrin/fcp/ghg.htm>

Question 4: In the area of engaging the supply chain, should consideration be given to any additional measures, risks or strengthening initiatives?

Summary table for Question 4

Key topics raised	Number of comments
Risk that electricity supply companies and retailers promote electrical products over gas	1

34. The consultation chapter outlines the Government's intention to encourage competition between manufacturers and retailers to supply products in line with the P1 standards. Yet it acknowledges that no tools exist for product designers to assess products energy efficiency performance, although a 'Red-Green' tool has been produced for consumer electronic products which could be adapted for cooking products.

Two stakeholders responded to this question.

35. One stakeholder referred to potential risks in the supply chain based on experience in other European countries. In some countries, privatised companies can increase profits by selling electrically-powered products rather than gas-powered products which has incentivised the sale of induction hobs over gas hobs. In their opinion, retailers are also encouraged to sell electric appliances as the installation costs are lower than for equivalent gas products. In Italy, domestic meters may restrict the availability of electrical power in homes. This can prevent a number of electrical appliances operating simultaneously and does not support the sale of multiple electrically-powered products which need to operate at the same time.

36. Another stakeholder referred again for the need for some kind of measure for hobs.

Government response

37. The supply chain is critical in delivering products that meet the proposed standards to consumers. It is not expected that moving towards the sale of more efficient appliances will impact negatively on the profitability of the businesses involved.

38. It is accepted that for a policy measure that involves hobs a method of identifying the most efficient will be required and that this will require the input of stakeholders to develop.

Question 5: In the area of EU and international policy actions, programmes and initiatives, should consideration be given to any additional measures, risks or strengthening initiatives?

Summary table for Question 5

Key topics raised	Number of comments
Support legislative requirement on labelling /new single label	1
New strengths offered by novel electric elements	1
Standby power and existing work on EuP	1

39. The consultation paper outlines the work of the ITFSP in the area of international collaboration, the potential impact of EuP developments on standby power and the related International Energy Agency's 1-Watt initiative. The section outlines the review of the mandatory EU labelling regime and possible voluntary initiatives on cooking products. It also mentions the current status of test methods for domestic cooking products. Question 5 refers to these measures and initiatives.

Three stakeholders responded to this question.

40. One stakeholder referred to the high number of gas cooking appliance manufacturers across Europe which is dominated by small companies. This is quite different to the cold and wet appliance industry which is dominated by a small number of high volume manufacturers. They do not believe a voluntary agreement would work in this sector and call for legislative action on labelling of cooking appliances.

41. They urged for more action on surface cooking (hobs) as this accounts for 70% of the energy used in cooking in the EU. In their view, cooking accounts for the equivalent domestic energy consumption to refrigeration and the lack of labelling is illogical.

42. In terms of labelling they strongly recommended the development of a single label for gas/electric ovens and gas /electric hobs. This will avoid customer confusion. They suggested a 'carbon type label' or at a minimum a label showing costs for a typical usage pattern. The introduction of a label for electric ovens has benefited this sector at the expense of gas ovens. They also questioned why an efficiency test for electric cooking appliances has not been developed, where a gas efficiency test was established more than 20 years ago.

43. Another stakeholder described how their novel electric elements offer substantial energy and environmental savings during the manufacturing process. The benefits include an estimated 55 fold reduction in energy use in production, the avoidance of highly acidic wastewater streams, low input material quantities, low capital investment, carbon benefits etc.

44. A further stakeholder referred to the issue of standby power and the fact that a definition for standby is being addressed within the EuP discussions and standards activity. They believe that the consideration of low power modes needs to take into account safety and other factors.

Government response

45. The EC has begun the process of revising the EU Energy Label and considering whether it should be extended to other products. There may therefore be an opportunity for gas cooking appliances and all surface cooking products to be covered by this scheme in future.

46. Surface cooking may be more important in terms of carbon emissions in EU countries other than the UK because of different cooking habits in those countries.

47. Demonstrating the relative carbon efficiency of gas and electric ovens and hobs in comparative label schemes will be difficult because each EU country will have a different mix of electricity generating and different carbon intensity. Stakeholder input to the revision of the EU Energy Label has recently rejected the inclusion of carbon emission data on the labels themselves. If the EC accepts this position, action by individual EU governments will be required to give this information to consumers.

48. No efficiency test standard is currently available for electric surface cooking appliances. If these products are required to be labelled in the future such a standard will need to be developed.

49. Additional environmental benefits that come about through new technologies are to be welcomed. Any company making marketing claims about their products should abide by the information requirements of the Advertising Standards Authority¹ and the Defra Green Claims Code².

50. Defra is actively engaged in EuP negotiations on stand-by and off-mode losses. Where products are not yet subject to their own study and implementing measure, they will be covered by this measure.

Question 6: In the area of UK policy actions, programmes and initiatives, should consideration be given to any additional measures, risks or strengthening initiatives?

Summary table for Question 6

Key topics raised	Number of comments
Extension of ESR	1
Improved enforcement and policing	1

51. This questions follows a discussion of:

- the UK Government's and other public sector actions on procurement of energy efficient products;
- the EST's *Energy Saving Recommended (ESR)* scheme on product endorsement and labelling on kettles/water heaters and future initiative on electric and microwave ovens; and

¹ Advertising Standards Agency briefing on Environmental Claims

http://www.asa.org.uk/asa/focus/background_briefings/Environmental+Claims.htm

² Defra Green Claims Code <http://www.defra.gov.uk/environment/consumerprod/gcc/index.htm>

- the *Energy Efficiency Commitment* scheme's obligations on energy suppliers to improve household energy efficiency.

Two stakeholders responded to this question.

52. One stakeholder called for ESR to be extended to gas ovens and all hobs with ultimately some form of energy efficiency labelling for a range of smaller kitchen appliances e.g. toasters, bread-makers, coffee machines. They recognised this would need careful management and suggested perhaps some form of mass-market sign-posting label identifying products with energy saving features.

53. The other stakeholder suggested that more needs to be done in the area of surveillance and enforcement at a national level. They felt there is a risk that non-compliant products are entering the market. This could lead to increased risks to consumers, it threatens environmental and business sustainability and generally undermines the European legislative system.

Government response

54. The Energy Saving Trust's ESR scheme usually relies on publicly available test methods in order to set criteria for individual products. It may be possible for stakeholders to agree to other methods of assessing the energy consumption but any methods must be reproducible. The EST tests a sample of products that are listed on the ESR scheme, so the methods must be robust enough for this process.

55. Consumer information may help reduce the environmental impact of a range of small domestic appliance products. However, within the cooking sector these products have a low priority either because they are not used frequently or because they do not use large amounts of energy when they are used.

56. Defra has commissioned spot checks of samples of appliances on the UK market to check compliance with EU Energy Label declarations and other environmental information. Through the International Task Force for Sustainable Products (ITFSP) it has established an international Global Sustainable Product Network (GSPN) for compliance monitoring. This will enable data sharing and exchange between countries. The EUP framework directive requires governments to share intelligence on compliance matters, and the UK will undertake a leading role in this area

Question 7: Are there any other policies likely to impact on domestic cooking products which should be taken into account?

Summary table for Question 7

Key topics raised	Number of comments
Support smart metering	1

57. This question follows a summary of other policies which impact on domestic cooking appliances. These include the *Act on CO₂* initiative, possible reduced VAT rate for energy efficiency products and smart metering.

One stakeholder provided comments in response to this question.

58. They strongly supported the installation of smart metering requiring a clear statutory mandate from Government.

Government response

59. If smart metering becomes government policy, it will be included in the list of policies that could impact on this area.

Question 8: What additional measures would you suggest developing to drive forward sustainability in domestic cooking products?

60. This question followed a brief discussion on the possible inclusion of built in efficient cooking appliances in the Code for Sustainable Homes.

No stakeholders suggested additional measures in response to this question.

Question 9: Are there any other potential impacts resulting from these proposals that should be taken into account?

Summary table for Question 9

Key topics raised	Number of comments
Possible test methods BS EN30-2-1	2
Practical difficulties of realistic test methods	1

61. This final question follows the partial analysis of the potential impacts of the proposals outlined in the document. These include:

- the issue that consumers are reluctant to spend more on the initial cost of most efficient appliances, despite the ability to recoup these costs over the product lifecycle;
- the fact that most cooking appliances are manufactured overseas;
- possibly encouraging manufacturers to focus on efficiency of gas ovens and hobs when suitable test methods/energy labels are developed; and
- the end of life issues.

62. Three stakeholders provided comments in response to related issues.

63. One stakeholder highlighted the fact that the draft standard *prEN 15181 Measuring method of the energy consumption of gas fired ovens* is about to be sent to CEN for preparation for formal vote. They anticipate the standard will be accepted by National Standards Bodies and that CEN will publish the standard by the end of 2008. This should be considered in the annual re-assessment of this paper.

64. Two stakeholders also referred to the existence of BS EN 30-2-1 and paragraph 5 which refers to appropriate test methods which may offer a starting point when considered the efficiency of hobs.

65. The third stakeholder felt however, that it would be difficult to produce realistic test methods to measure the efficiency of all types of hobs given that users use very many types of cookware and cooking processes.

Government response

66. The availability of a test method will enable the development of policies related to gas ovens such as ESR and EU Energy Labelling. The status of the standard will be included in any future reviews of this paper.

67. The availability of BS EN 30-2-1 is noted.

68. It is noted that standard tests do not always reflect a realistic situation. However, any effort to devise a method to compare the efficiency of hobs is encouraged. As a first stage a representative type of cookware and cooking process could be selected, and work undertaken to compare the effect of different types of cookware.

General Responses

Summary Table for General responses

Key topics raised	Number of comments
Energy consumption for typical meals	1
Support the process outlined in the consultation document	1
Legislation is more effective than voluntary agreements – support stronger standards	1
Need to take into consideration European developments	1
Financial incentives for consumers	1
Support for open-ended numeric labelling system	1

69. Two stakeholders provided some general comments in support of their response.

70. One stakeholder refers to some recent tests showing that boiling 3 litres of water and 0.5kg of sauce needs 0.7kWh with an *induction* hob, and 0.127m³ of gas. They questioned whether the figures prepared by MTP which show 0.75kWh for preparing a meal with a *standard* electric hob is correct given these are considered to 30% less efficient than induction hobs. Their figures vary between from 1kWh to 1.2kWh depending on the meal (using laboratory pots and perfect positioning of pots over cooking zones).

71. One stakeholder

- supported the intention to monitor progress against projected technology and market development, to consult on the evidence and to annually review and update the published analysis and policy response, including indicative product performance levels for new products supplied to the UK market.

- recognised the advantages of voluntary agreements but also provide some comments on the different risks associated with them.
- agreed that legislation is more effective than voluntary agreements and urge for such legislation to set challenging but achievable long-term targets. They believe the UK Government needs to continue to push for more far stronger EU standards under the EuP Directive and advocate that UK Government should aim to bring in new EU legislation as early as practicable to do so.

72. A third stakeholder referred to the ongoing work of CECED at European level and the need to ensure that this UK work needs to take into account these European developments. They acknowledged the three focus areas (raising the energy performance standards, promoting better energy management and working with consumers to reduce wasteful usage in homes) and take the view that they should all carry equal weighting.

73. In relation to the revision of the current mandatory EU energy labelling regime, they pointed out that the European white goods industry, through CECED, has expressed its views on the revision and favours an open-ended numeric scale to replace the current system.

74. One stakeholder felt the goals need to be achievable and need to be accepted by the market (such as a willingness from consumers and retailers to accept higher costs). To get energy efficient product into UK homes requires a range of initiatives from manufacturers, retailers and consumers and Government. They believe financial incentives for consumers need to be seriously considered.

Government response

75. The energy consumption per hob or oven use that is used in the models and data supporting this paper is not related to preparing a specific meal or food. It is intended only as an 'average' figure across all households and cooking events.

76. With respect to EUP, the EU does not yet have any plans to include cooking products within its scope, except for those affected by the standby and/or off-mode losses implementing measure. They were identified within research for the workplan for future products as a potential product area, but the EU is yet to make public its intentions for further work.

77. The three areas of raising performance standards, promotion of better energy management and changing consumer habits cut across several government departments. This consultation focuses on performance standards, but it is acknowledged that the other areas could contribute to reduced energy use.

78. Defra will ask stakeholders for input on proposals for the revision of the EU energy labelling scheme.

79. As noted above, the CERT scheme can support the delivery of more efficient products into consumers' homes.

4 Next steps

80. The Market Transformation Programme has carefully reviewed the existing evidence and taken into account these stakeholder responses and any new information or data. The original projections for the future performance of domestic cooking products are being reviewed along with options for the ongoing improvement.

81. The outcome of this process is published in the separate document entitled 'Policy Brief for Domestic Cooking Products' which provides an update of the baseline information provided in the original Consultation Document. While the formal consultation process has closed, engagement on the standards will continue as part of an annual reviewing and updating process.

Appendix 1 - List of respondents

SBGI
2D Heat Ltd
Sabaf
The Energy Saving Trust
Loughborough University
AMDEA