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Summary of responses to the consultation and indicative performance standards for commercial refrigeration products

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1 Introduction

1. On 5 December 2007, following the publication of the Energy White Paper, the Government launched a commercial refrigeration 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 8 of the consultation paper) set out the Government's current evidence, analysis, indicative targets and eco-design standards for commercial refrigeration 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 four responses were received representing one product end user and three appliance manufacturers. These were Marks and Spencer, Qualitair, the EPTA group and the Bond group.

6. EPTA group and Bond group provided the most detailed and comprehensive comments. Only Qualitair addressed the consultation questions directly, however, we have allocated all but one comment to the most relevant question in this document. The main comments related to establishing a robust basis for measurement of energy efficiency and ensuring any declarations made are regulated to ensure real saving are made for the product group.

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

7. Comments were received supporting a policy focus and standard-setting for refurbished display cabinets, as performance can be the same as new cabinets but with reduced life cycle carbon footprint.

8. There is also a need to re-educate users and provided incentives to purchase commercial refrigeration products on life costs rather than initial capital and installation costs.

9. 'Policing' of published data was the biggest concern for one stakeholder – to ensure reliable performance data that reflects true efficiency improvement.

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
Analysis required on relationship between product energy efficiency and type of refrigerant	1
Number of commercial refrigeration units in market analysis could be overestimated	1

10. This question relates to the information provided in the consultation document which provides a market overview, current trends in the commercial refrigeration product market (liquid chilling packages, retail display cabinets (remote and integral), catering service cabinets, cellar cooling, walk-in cold stores, vending machines and ice machines) in terms of energy efficiency, innovation in these products and prices paid by consumers for these products.

One stakeholder responded directly to this question and one other comment was received.

11. One stakeholder questioned why the affect of refrigerant changes in the market (on both the environment and unit performance) has been omitted from the analysis.

12. One respondent suggested the market data included in the document regarding number of commercial refrigeration units in the UK (i.e. 208,000 remote, 586,000 integral, 432,000 catering and 77,000 vending machines) is overstated.

Government response

13. With regards refrigerants, MTP is technology neutral. Whilst the modelling process does incorporate emerging market trends within its projections, the programme does not discriminate or promote one technology over another. The

existing product performance standards are specified for the most commonly applied products & refrigerants. We acknowledge that more robust evidence would be valuable as to how new refrigerants will impact on performance, and this will be taken into account as it arises.

14. No specific new evidence on stock, sales and market characteristics was offered during the consultation, but the concern of possible over-estimation is noted, and better evidence will be sought prior to the next consultation document.

Question 2: Do these graphs accurately illustrate how key existing policy instruments could support delivery of more efficient new products?

15. This question refers to the accuracy of the analysis provided of key policies, risks and measures that are anticipated to impact commercial refrigeration products for the years 2000 to 2020.

No stakeholders responded directly to this question, although some consultation feedback is attributed to the most appropriate questions below.

Government response

16. N/A.

Question 3: 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 3

Key topics raised	Number of comments
The impact of the refurbished products market	2
Refurbished cabinets can also deliver the same efficiencies as new cabinets.	1
Development of a voluntary carbon footprinting code for display cabinets	1
TEC/TDA needs to be made more robust to avoid misuse if it is to become the basis of measurement	1
TDA value in Figure 3.1 unrepresentative.	1
Enquiry of how the 'average performance values' have been determined	1
Design and test standards of the equipment needs clarity, especially in terms of efficiency assessment and application standards in a true life environment.	1
Energy rating thresholds are not technically sound	1
30% efficiency savings can only be made through complete system design	1
More realistic COPs for Cellar Coolers, Compressors and Condensing units.	1

17. The question concerns the average performance level which commercial refrigeration products must achieve and the metrics for measuring market developments.

With regards to the right products;

18. One stakeholder stressed that because the refurbishment market for current equipment is a market probably as large as that of new, any efficiency challenges should also address this market sector. Furthermore, the respondent noted that the Bond group and BRA are preparing to produce a methodology for measuring and

voluntarily reporting the carbon footprint of display cabinets, which is being supported, and part funded by the DTI (BERR). This includes a study on potential energy savings for display cabinets. The other partners are Brunel University and the Carbon Trust.

19. One respondent commented that refurbished cabinets can also deliver the same efficiencies as new cabinets and, because they are refurbished, will have a much better life cycle carbon footprint (see answers under Question 5).

With regards to performance metrics;

20. One stakeholder emphasised that the TEC/TDA principle (for reporting market average performance values) can be abused.

21. Another emphasised that TDA values are an inadequate metric, since cabinets of 600mm depth and 1200mm depth share the same TDA value [but different storage volumes].

22. One stakeholder wanted to know how the 'average performance values' have been determined, since the only correctly policed information is [from] Eurovent.

23. One stakeholder commented on the need for test and design standards. It was stressed that because the components of refrigeration units can be applied differently, true efficiencies can only be measured if the complete system design (i.e. the array display cases and compressor as set up) is measured. The respondent suggested as a minimum, the compressor and associated condenser selection should be considered. Design and test standards of the equipment needs clarity, especially in terms of efficiency assessment and application standards in a true-life environment.

With regards to performance levels;

24. It was one respondent's opinion that energy rating thresholds are not technically sound.

25. Another questioned efficiency savings of 30% in Figure 3.1. In their view, this cannot be sustained because current cabinets are using the most efficient evaporator coils available and the electrical energy is virtually zero. It was felt the projected savings could only be made through complete system design not just cabinet design.

26. One stakeholder did not feel that continued component development would produce much higher Coefficients of Performance (COPs) than today for Cellar Coolers, Compressors and Condensing units.

Government response

With regards to the right products:

27. With regards to extending the scope to include refurbished cabinets, MTP at present does not treat refurbished cabinets differently to new cabinets in its analysis of stock and efficiency. Differences in environmental impact may become apparent if/as evidence on wider life cycle impacts (impact of manufacture & disposal etc) is taken into account. The programme will continue to set market average performance standards for energy performance in use, covering new and refurbished cabinets. It is recognised that the ECA scheme (the primary current policy measure) cannot cover refurbished products for tax reasons.

With regards to performance metrics:

28. Technical concerns over the use of the TEC/TDA metric are noted. This has been adopted as the only internationally recognised metric for display cabinets, and will continue until a more sophisticated metric can be agreed. MTP will continue to monitor the impact of this on energy projections.

29. We acknowledge interest to consider whole system efficiency, rather than just components, but no metric for this is presently agreed amongst suppliers and users. However, there is still merit in focus on standards and efficiency of components / sub-systems, until the broader system metrics become available. MTP will continue to investigate system metrics during the coming year.

30. The ‘average performance values’ have been set taking into account the range of products available on the EU and UK market (from Eurovent and other sources), combined with cross-checking with standards set in other schemes around the world. These levels have been discussed with suppliers over recent years, but a need for more detailed scrutiny and discussion in the light of any new evidence is acknowledged. The case for generating new evidence on this will be examined.

With regards to performance levels:

31. Regarding the comment on whether levels are, or are not, technically sound – the levels are set according to the evidence available to MTP. As soon as better evidence is made known, it can be assimilated. See also previous paragraph. We can offer to discuss the technical basis in more detail with the relevant industry groups.

32. MTP will review the co-efficient of performance values for refrigeration compressors, cellar cooling and condensing units in light of consultation feedback. This will require further discussion with industry to evaluate evidence and seek consensus.

Question 4: In the areas of market analysis, projections and targets, should consideration be given to any additional: Measures, Risks, Strengthening initiatives?

Summary table for Question 4

Key topics raised	Number of comments
“Biggest concern” is that policing of [performance data] will be necessary if real savings are to be made	1

33. This question follows a brief discussion of intention to monitor progress and to review and update the analysis on an annual basis. It is acknowledged that products will develop in a different direction and this is a risk to the process.

34. One response asserted that the biggest concern was policing. The UK ECA scheme and MTP is not policed, and the British Refrigeration Association has identified several areas of concern that have not been answered by the Carbon Trust. Unless base information is accurate, then all following proposals are worthless too. To make real savings then real improvement in performance is necessary. It is too easy to make “paper improvement” through declaration when there is no genuine efficiency benefit.

Government response

35. Compliance and ‘policing’ of published data is a common concern. It is Government’s intention to work with industry bodies to ensure that effective certification schemes are established and lead by business. Eurovent Certification, ASERCOM certification and the BRA Refrigerated Display Cabinet Performance Validation Scheme are examples in this respect. For its own part, Government may recognise and use such schemes in policy initiatives, and support their establishment if agreed as necessary to ensure achievement of the Government’s targets.

Question 5: In the area of engaging the supply chain, should consideration be given to any additional: Measures, Risks, Strengthening initiatives?

36. The consultation paper outlines the proposed measures for engaging the supply chain and asks whether initiatives should be strengthened.

No comments were received with respect to this question.

Government response

N/A

Question 6: In the area of EU and international policy actions, programmes and initiatives, should consideration be given to any additional: Measures, Risks, Strengthening initiatives?

Summary table for Question 6

Key topics raised	Number of comments
Challenge data provided in EuP Lot 12 report.	1
Major mistake for the UK to distance itself from the main European discussion [on reliability of published data]	1
Self-certification by European manufacturers cannot be trusted	1

37. The consultation paper outlines the work of the ITFSP in the area of international collaboration, the potential impact of EuP developments on commercial refrigerators and freezers, the mandatory standards on fluorinated greenhouse

gases, the voluntary product labelling initiatives (Eurovent and ASERCOM) and details on test methods and standards. Question 6 refers to these measures and initiatives.

38. One questioned the basis for the energy efficiency savings, stating that the report carried out under EuP Lot 12 is inaccurate, as it was based on aspirational marketing figures rather than sound engineering fact.

39. One stakeholder felt that it would be a major mistake for the UK to distance itself from “the main European discussion on this subject”. From its context, we have taken this to mean ‘discussion on the reliability of published data’.

40. It was felt the self-certification by European manufacturers could not be trusted.

Government response

41. MTP has been an active participant in the ongoing Energy Using Products Lot 12 preparatory study, and evidence available to MTP has been offered. The Lot 12 study is, however, based upon consensus across all member states. Equally, MTP takes note of the results of the EuP studies, but manages its own evidence base and does not rely solely on EuP studies as the basis for the Government’s performance standards and energy projections. Specific concerns and any issues with data for such studies must be taken up with the study managers, which can be done via MTP.

42. We acknowledge some additional differences with the rest of Europe for many retail display products: The UK retail sector has some of its own technical standards and temperature classes; several UK suppliers develop specific products for UK retailers. However, UK Government remains committed to developing effective product standards for use through the EuP directive.

43. The Government acknowledges the role of the voluntary Eurovent Certification Scheme in raising the reliability of product performance data. Evidence on the benefits of any additional policing of such schemes would have to be weighed against the cost of additional testing etc. Government is actively pursuing a more collaborative approach with other Governments to share compliance data in order to maximise the benefits of the testing that is done.

Question 7: In the area of UK policy actions, programmes and initiatives, should consideration be given to any additional: Measures, Risks, Strengthening initiatives?

Key topics raised	Number of comments
ECA scheme and the consultation paper actively discourage the reuse of equipment.	1
ECA needs to become more responsive, aligned to current technology and to respond faster to change	1

44. This question followed a summary of policy actions, programmes and initiatives. This includes the UK Government's and other public sector actions on procurement of energy efficient products; The UK Enhanced Capital Allowance scheme for products listed on the Energy Technology List (ETL).

45. One stakeholder emphasised that the ECA scheme and the consultation paper actively discourage the re-use of equipment.

46. One stakeholder commented that the ECA scheme is operating behind technology and innovation and currently may incentivise buyers away from the most energy efficient solutions. And that it needs to become more responsive, aligned to current technology and to respond faster to change

Government response

47. The present ECA scheme is unable to recognise refurbished products for tax reasons. As discussed under Question 3, MTP is seeking further evidence on the wider environmental benefits of refurbished cabinets, for consideration in future policy development.

48. The standards published by Government are intended to be forward-looking and act to lead the market to higher efficiencies. Once these are established and recognised as such by stakeholders, policy-makers and scheme managers may adopt the standards as they see fit. Evidence on the impact of such schemes is sought out and published via MTP.

Question 8: Are there any other policies likely to impact on commercial refrigeration products, which should be taken into account?

Summary table for Question 8

Key topics raised	Number of comments
Statutory mandate for smart-metering	1

49. This question followed a summary of proposed policy measures concerning VAT on energy efficient products, smart-metering and promoting carbon reductions in industry and commerce.

50. One stakeholder felt that a clear statutory mandate was required from Government to establish smart-meters.

Government response

51. Noted.

Question 9: What measures would you suggest developing to drive forward sustainability in commercial refrigeration product?

Summary table for Question 9

Key topics raised	Number of comments
Reduce “open” refrigeration cabinets; reduced ambient shop temperatures	1

52. Stakeholders were asked for any additional measures for driving forward sustainability for commercial refrigeration products.

One stakeholder responded to the question.

53. It was emphasised reducing “open” cabinets and reducing ambient shop temperature would limit the heat flow from cabinets.

Government response

54. This has also been noted in the EuP Lot 12 paper. Government seeks to ensure that reliable information is available to buyers on which to base selection of cabinet type (eg open vs. with doors), including policies to encourage the more energy efficient choice.

Question 10: Are there any other potential impacts resulting from these proposals that should be taken into account?

Summary table for Question 10

Key topics raised	Number of comments
Need to re-educate/incentivise users to purchase on whole life costs	1
Life cycle costs data may be inaccurate	1
Refurbishment of equipment should be encouraged	1

55. This final question followed the partial analysis of the potential impacts of the proposals outlined in the document. This covered a consumer’s cost/benefit analysis, business, waste and health impacts analysis.

56. One response highlighted that there is a need to re-educate the user to look at life costs rather than initial installation costs and give some incentive to purchase products that offer lowest life cost but by nature are more expensive.

57. It was the opinion of one stakeholder that the view expressed in consultation paper paragraphs 157 and 158 (that over a ten-year life the total cost of ownership would be made up of 20% capital purchase, and 80% energy) was based on poor data as they were derived from self-certification performance figures.

58. One stakeholder felt that although the WEEE directive addresses management of waste, production of waste should be discouraged - through refurbishment of equipment.

Government response

59. We agree that life cycle cost should be taken into account when selecting products.

60. The views on life cycle balance between capital and energy costs are given as indicative of a broad range of cabinet types and usage situations. Individual cases will vary, sometimes significantly.

61. Use of refurbished cabinets has been discussed under Question 3 above.

General Responses

Summary table for General Responses

Key topics raised	Number of comments
Level of MTP consultants knowledge insufficient	1

62. Three of the four respondents provided overarching comments rather than responding specifically to the questions listed above. However, these comments have been reviewed and allocated where possible to the most relevant question above. One comment did not fit to a question and is given here.

63. It was felt that without extensive knowledge and experience, the consultants providing information to MTP cannot provide a recommendation that will engage support and achieve real savings. The stakeholder expressed very low confidence in the report and the proposed actions.

Government Response

64. The role of MTP and its consultants is to collate and procure evidence from a wide range of external sources and experts, and develop that through consensus with stakeholders to inform Government. These comments are acknowledged, and are considered to particularly reflect a need for a higher level of stakeholder engagement and discussion.

4 Next Steps

65. The Market Transformation Programme has carefully reviewed the existing evidence and is taking this account these stakeholder responses and any new information or data. The original projections for the future performance of commercial refrigeration products are being reviewed along with options for ongoing improvement.

66. The outcome of this process is published in the separate document entitled 'Policy Brief for Commercial Refrigeration Products' which provides an update of the baseline information provided in the original Consultation Document. Whilst the formal consultation process for 2007/08 has closed, engagement on the standards will continue as part of an annual reviewing and updating process, including the assimilation of any additional evidence gathered.

Appendix 1 - List of respondents

Qualitair
Marks and Spencer
The Epta Group
The Bond Group