The Royal Academy of Engineering

Inquiry into the Draft Climate Change Bill

Response from The Royal Academy of Engineering to the Joint Committee on the Draft Climate Change Bill

May 2007

1. The Royal Academy of Engineering welcomes the opportunity to submit evidence to the Joint Committee on the Draft Climate Change Bill. The submission below has been formulated from the views of a number of Fellows of the Academy, with many years of experience working in the fields of energy and climate science. In addition to this submission, the Academy would be pleased to provide oral evidence to the Joint Committee in order to expand on any of the issues raised below.

2. The Academy supports both the intent to enshrine in law the long term target and also to set binding targets en route to the 2050 goal. This will create long term certainty in the minds of investors in industry and the public at large as to the legislative position in the UK for the foreseeable future.

3. The scale and timing of the intermediate targets need to be sufficient to stimulate both delivery of long term low carbon technologies on the supply side together with major adjustments on the demand side. On the supply side, the most important technologies include carbon capture and storage, nuclear power and longer term renewables such as tidal and offshore wind while action on the demand side must concentrate on reducing the fossil sourced component of these elements of UK energy use, particularly in the transport sector. Each intermediate target also needs to be realistic, bearing in mind that significant benefits may in fact flow in the 2020-30 period, although it must also be noted that the earlier the emissions reductions are implemented the more effective they will be.

4. Whilst the 5 year budget period has considerable merit for the reasons set out in the draft bill, it is important to recognise that the carbon emission profile is unlikely to have step changes year on year or to be a smooth predictable line. Care needs to be taken therefore to set targets which signal the desire and commitment to achieving the longer term 15, 30 and 50 year targets whilst not being liable for early failure.

5. The challenge in delivering the 26-32% reduction in carbon dioxide emissions by 2020, when the most recent figures indicate a rise relative to 2005 levels, is enormous. Notwithstanding policy and market mechanisms, which may in themselves represent significant deployment barriers, this challenge is significant in terms of delivery of the necessary engineered assets for both supply and demand side reductions of CO_2.

6. Recent evidence would also suggest that the target of a 60% reduction relative to 1990 levels by 2050 may not be sufficient to mitigate against catastrophic effects of climate change. This target, which originated from the Royal Commission on Environmental Pollution's report *Energy, the Changing Climate* and was itself derived from the perceived need to stabilise the concentration of CO_2 in the atmosphere at 550ppm has, since 2000, become controversial and many experts have revised their estimates of the required target downwards to between 450 and 500ppm. It is therefore important that the targets are reassessed in the light of the most current scientific research available into the concentration of greenhouse gases in the atmosphere, the global temperature and its effect on both local and global climates.

7. Mitigating climate change in terms of global as well as local consequences and ensuring security of energy supply are fundamental to the prosperity of the UK and the well being of its citizens. The timescales and responsibilities involved cut across a number of administrations. It is right therefore that short

term political imperatives should not interfere with the long term objectives outlined in the Climate Change Bill and in the previous two Energy Reviews. A new non-departmental public body appropriately mandated and resourced could be a way to assess, monitor and highlight progress and issues.

8. We would strongly advocate the inclusion of, or as a minimum guaranteed access to, suitably qualified and experienced engineering resources to ensure scenarios and options are appropriately scoped and costed and assessed for practicality of delivery. The Academy, with a membership drawn from all technologies relevant to the climate change challenge, would be pleased to assist Government in the detailed studies and analysis which will be required.

9. Given the depth and breadth of expertise needed, appointing a Committee on Climate Change of only 5-8 members capable of addressing all the relevant issues would be most difficult. Such is the complexity of the sector that access to experts in all the technology options will be an essential prerequisite. Here the Academy and the major engineering institutions can offer assistance through the nomination of appropriate experts.

10. Also, experience in recent years indicates the importance of stakeholder engagement and the engagement of science and engineering with society at large at the earliest opportunity. We would therefore encourage the Government to ensure that the Committee on Climate Change gives adequate attention to the public acceptability of measures introduced to tackle climate change and has access to experts in the fields of psychology and sociology. The Committee on Climate Change must also operate fully in the public domain and its procedures should be completely transparent. Also, it must be prepared to debate fully contentious issues and criticisms whenever they arise.

11. Whilst the draft Bill indicates a Government would be open to Judicial Review in failing to meet targets or stay within budget, it is difficult to see what this would actually mean and what meaningful sanction could be applied in the event of serious failure.

12. In global terms, it is right that the UK should take a lead in tackling emissions of greenhouse gases and this Bill will send a clear signal of the UK's commitment to achieving significant emissions reductions. It is, however, important that the price of energy is not driven up to a point where it adversely affects our economy relative to the rest of the world. Thus, achieving a world consensus remains a priority, particularly in countries such as USA, China and India and securing a successor to the Kyoto Protocol once the first commitment period runs out in 2012.

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