

5.0 Appendix 2 - Interview Programme

5.1 Aims of the Interview Programme

The interview programme designed by the project team had two main aims. Firstly, the interviews were intended to ensure that the scenarios were plausible, internally consistent, and appropriate for the function of supporting a two day workshop to identify relevant subjects and methods for research under the Towards a Sustainable Energy Economy Programme. Secondly, the interviews encouraged respondents to begin the process of identifying appropriate subjects for research, a process which the workshop itself was meant to complete.

The interviews were carried out by Mr. Robert Olson for IAF, Dr. John Rigby for PREST/CRIC and by Dr. Sarah Mander of UMIST (working to the direction of Dr. Simon Shackley and Dr. Kevin Anderson). The interviews took place in the four weeks preceding the workshop in London, giving time for amendments to the scenarios to be adopted and for the responses from the interviewees on the questions of appropriate social science topics to be noted prior to the opening of the workshop.

5.2 The Interview Programme Questionnaire and Protocol

The interviewers developed a set of questions to obtain information that would satisfy the aims of the programme and a set of general guidelines which the interviewer was to follow in order to apply the questionnaire consistently. The guidelines also included instructions that were directed towards ensuring that an interviewee's specialist knowledge was used effectively. The guidelines included the following notes:

- The interviewer will attempt to tailor questions to your expertise – and will bear in mind the fact that, for example, academics may wish to answer the questions only in relation to their own field of social science, or users/policymakers may only wish to discuss developments in structures and policies.
- Interviewees should be asked to reflect in advance about at least one scenario that especially interests them.
- Interviewees may also request to choose a driver or two that they're most knowledgeable about, and then prepare some answers to driver questions in the protocol in advance.

5.3 Confidentiality of Interview Notes

The interview notes made are to be retained by IAF and PREST/CRIC as the comments made within them are in confidence and made under Chatham House Rules.

5.4 General Comment on the Interviews

In the event, the interviewees viewed all four scenarios as plausible, but not equally likely. Several small changes to the scenarios were recommended by the interviewees and adopted by the project team. A few more fundamental suggestions were made that were not adopted because it was felt they would change the character of the scenarios. For example, some said that a revival of nuclear energy should not be included in Scenario 1, because the Government has no plans to do that and is treating nuclear as an “only if absolutely necessary” fallback energy source. But nuclear was kept in the scenario to support its overall theme of mobilizing all large scale supply options. Comments were also made that the scenarios generally assumed rising energy prices, and it was proposed that not all scenarios should assume this. Some scenarios were modified to extend a period of low energy prices further into the future, but the idea that energy prices might stay low over a fifty year period was rejected as unlikely.

5.5 The Interviewees

The interviewees consulted for the Energy Scenarios Project were as follows:

Interviewee	Organisation	Interviewer
Professor Paul Ekins	PSI, university of Westminster	Rigby
Mr Adrian Bull	BNFL	Olson
Dr David Toke	Birmingham University	Olson
Dr Jim Watson	SPRU	Olson
Dr Joanne Wade	ACE	Rigby
Dr Tim Foxon	Imperial College	Olson
Professor David Elliott	Open University	Olson
Professor John Chesshire	Formerly SPRU	Rigby
Dr Andrew Dlugolecki	Energy Consultancy	Mander
Dr Elaine Jones	Tyndall Centre	Rigby
Mr Ken Green	Energy Consultancy	Mander
Mr Duncan Eggar	UK Sustainable Development Commission	Olson
Dr David Bailey	ALSTOM	Rigby
David Greenwood	Riccardo Consulting Engineers	Rigby

5.6 Research Questions Generated from Interviews

A list of 27 priority topics for economic and social research was generated based on the project interviews. These topics were used as a “starter list” for an initial voting exercise at the Scenario Workshop using the *Council* groupware. This initial exercise was intended to focus participants on the range of topics raised thus far, and to give them an initial experience in sorting their preferences for one topic vs. another.

Each participant had 9 items they could support with a check, and could put only one check on each item. (Generally, in ranking and voting exercises using *Council*, participants are given a number of votes equal to one third the total – n/3.) The

“starter list” of research questions generated from the interviews was grouped into these seven initial categories:

1. **Supply Side**
2. **Demand Side (technical efficiency and behaviour)**
3. **Processes of Long-Run Change in Socio-Technical Systems**
4. **Policy Processes**
5. **Responses to Policy**
6. **Social Impacts of Changes**
7. **Risk, Vulnerability and Uncertainty**

Each of the 27 research topics was numbered within its category. Thus 6.1, the first on the list below, was a topic within the “Social Impacts of Changes” category. The table below lists the 27 research topics in the priority order that emerged in the initial ranking exercise.

Table 1: Initial Ranking of Research Topics Identified in Interviews

After 18 Responses Up to 1 Checks per item 9 Checks per vote

# of Checks	Items
12	6.1 What are the potential social impacts and consequences of different transition paths to a 60 percent CO ₂ reduction by 2050?
10	2.5 How to change air travel behaviour? (Aviation has been left out of most energy analyses, but growth in aviation could swamp carbon reductions in other areas.)
9	2.1 What strategies can be most effective in influencing consumer behaviour and making energy considerations more important in their choices?
8	1.1 What changes are needed in the regulatory framework for electricity generation and distribution to create a balanced approach that gives as much opportunity to small generators/distributed generation as to large, centralized generators?
8	4.3. What are the "best practice" methods for making comprehensive comparative evaluations of different energy supply and efficiency options, taking into account economic costs, environmental impacts, and societal evaluations?
7	4.6 Which choices can best be achieved through the market, and which need to be guided through more deliberative and planned processes?

7	2.3 How to effectively organize area-based carbon reduction programs that work with a specific community to address all aspects of energy efficiency?
7	5.2 How rapidly can energy efficiency and renewables reasonably be expected to come on, given various policy measures?
7	5.3 What is the public reaction likely to be to policies that aim to revitalize the nuclear power industry?
7	7.1 How should the government communicate to the public and shape expectations in areas of high technical uncertainty such as hydrogen development and carbon sequestration?
7	1.3 What changes in taxation, subsidies and other areas of energy policy are needed to create a level playing field that allows consumers to make rational investments in energy efficiency vs. energy supply?
7	4.5 What are the relations between national and international energy policies, and how are these influenced by other policy considerations (e.g. geopolitics, international development) and the strategies of major companies and other actors?
7	3.2 How are new options and alternatives generated, how and when are they integrated within sociotechnical systems?
7	2.2 How much of a "step change" can occur in decoupling energy demand and economic growth by improving energy efficiency without hurting the economy?
6	1.2 What changes are needed to create a level playing field for different kinds of energy supply?
5	6.2 Can low-carbon pathways of development for poorer nations be created, and how can their ethical, social, economic and environmental consequences be examined?
5	2.4 What changes in regulations, policies, economic incentives, etc. are needed to influence different parts of the building industry (architects, developers, engineers, contractors, buyers) to significantly improve energy efficiency in new construction?
5	4.4 How can energy decision-making be both evidence-based (using the best available technical and scientific information), and widely participative, drawing on divergent interests and values?
5	7.2 What approaches are, and can be, developed and applied to characterise security, vulnerability and resilience?
4	3.1 How (and by whom) do technologies, infrastructures and institutions become stabilised or established so as to potentially and 'lock-out' alternatives?
4	4.1. How to improve foresight in government and create a more rational approach to managing the energy transition (e.g., better anticipate problems, agree on long-term goals, map out pathways, and set up technical and policy experiments to learn as we go)?

4	5.1 Why is current energy policy, with many small policy mechanisms, failing to get the needed level of investments and innovations? (lack of integration, absence of big mechanisms like a carbon tax, etc.?)
4	4.2. How to enlist the support of traditional industries that often resist restructuring the energy system, for moving to a sustainable energy economy?
3	5.4 How are UK markets influenced by international market and regulatory rules at the national, regional and local scales?
3	5.5 What are the implications of increasing interconnection between UK and European energy markets, for risk, prices and security?
2	7.3 What profiles of risks do energy suppliers and users confront, how are they managed, how might they change?
1	3.3 When are major system transitions necessitated? And, how can we identify turning points?

5.7 Interview Guide

The Interview Guide used by the interviewers is included on the following pages. This guide was sent to interviewees before the interviews to give them background information on what the project and the interviews were about and to allow people to reflect on the questions in advance. Interviews lasted a half hour at a minimum and more often went for 45 to 60 minutes. Even in hour-long interviews, it was difficult to deal thoroughly with all the questions. In general, the highest priority was given to gathering interviewees reactions to the scenarios and to asking them what economic and social research priorities they believe are most important for supporting a transition to a sustainable energy economy. As time permitted, additional questions were pursued dealing with research methods and specific driving forces.

5.8 Introduction to the Study

The study which IAF, PREST and UMIST are undertaking is intended to contribute to Economic and Social Research Council policy to identify research in the area of energy and sustainability. The aims of this project are to identify research areas, to decide priorities in respect of research subjects, to consider the ways in which such research should be carried out, including its interdisciplinary mode and support structures, and to ascertain how the research could be used most effectively and evaluated in the long-term.

Our interviewing programme and our scenario workshop will use the four scenarios we have developed to begin a process which will lead to the identification of research areas. During the interview phase of the work, we will encourage comments on what further possible alternative scenarios might be highly plausible and worth considering along with the existing scenarios during the scenario workshop. Interviews will though, focus mainly upon the research areas suggested by the scenarios presented by us. These areas of research will be those which will help the UK to deal with:

- a) events identified in the scenarios but which should be avoided;
- b) how the consequences of events which are identified in the scenarios and which cannot be avoided might be dealt with;
- c) how events which are identified might be better understood;
- d) how events which are identified in the scenarios and which are thought to be desirable can be made more likely to occur.

The remaining part of the interview will examine the following:

- 1) how identify the best ways in which this kind of research can be pursued in terms of research structures, modes of research;
- 2) how to identify the best ways in which this kind of research can be pursued in terms of structuring, methodology and funding [facilitation];
- 3) how to establish a sense of priorities in terms of what is most important, and when it will be most important [prioritization];
- 4) how the research can be delivered best and make most impact;
- 5) how the performance of such research and its impacts might be subject to evaluation;
- 6) specific questions on a driver.

5.9 Areas of Research Arising from the Scenarios [Research Topics]

5.9.1 Questions

- a) Thinking about the spectrum of scenarios we have given, do you believe that there are any substantially different images of a sustainable energy future that we should consider?
- b) In your view, what are the main **areas** where social research is necessary to help inform policy development, business strategy, informed public opinion, in the field of Energy and Sustainability?
- c) Based on the scenarios we have developed, and upon any further insight, what research will be those which will help the UK to deal with:
 - i) events identified in the scenarios but which should be avoided;
 - ii) how the consequences of events which are identified in the scenarios and which cannot be avoided might be dealt with;
 - iii) how events which are identified might be better understood;
 - iv) how events which are identified in the scenarios and which are thought to be desirable can be made more likely to occur.
- d) What extra role and scope for research is provided by the inclusion of EPSRC and NERC as partners in this project?

5.10 Carrying Out the Research [Facilitation]

- 1) How about the style and conduct of research? Are there methods that need to be developed or used more?
- 2) How about interdisciplinary work?
- 3) Do there need to be new relations among social sciences, or between social research and other types of research?
- 4) Are there new research paradigms, new conceptual approaches that need to be developed?
- 5) How could this be done?
- 6) The research identified in the previous section is likely to involve experts / scientists from a range of disciplines. How should the three research councils involved in the support of this programme (define and) organize their support?

5.11 Research Priorities and Opportunities [Prioritization]

- 1) Are there ways in which this needs to evolve in the future?
- 2) What about the management and funding of social research?
- 3) Are there other features of social research – topics, methods, concepts, styles or linkages to users – that should be taken into account in Energy?

5.12 Ownership and Use of Research [Delivery]

- 1) How should this research be communicated and used, and what form should the linkages between researchers and those who do or could use research knowledge take?

5.13 How will the research be known to be useful? [Evaluation]

- 1) What systems, should be used to assess whether such knowledge is useful in practical terms. Should evaluation be used?

5.14 Specific Questions on a Driver [Driver Questions]

- 1) How far is this something whose development into the next ten years or so can be relatively easily forecast?
- 2) What are the main uncertainties about how this issue may evolve? (pick up research needs here)
- 3) How far can the influences of this factor/set of factors on Energy be forecast?

- 4) What are the main influences it could have?
- 5) What are the main uncertainties about these influences? (pick up research needs here)
- 6) We'd like you to suggest a couple of alternative ways in which this set of influences might develop. First of all, what would you consider to be the most likely path of development, all things considered?
- 7) What would make for a reasonably plausible alternative course of development – perhaps one that by and large is better in your opinion?
- 8) Are there any major transformations that could happen in this set of factors, that would constitute a radical change, a paradigm shift in the way in which we see these things or undertake our activities here?