

Goal 2: To understand how different means of sourcing energy from outside the UK would impact ecosystem services from a global perspective and to identify options for managing these impacts.

Several key gaps and approaches were identified across goal 2 – the international impact of UK energy service supply.

1. Metrics were considered critical to consider a basket of ecosystem services in a global context, but were often missing, with the exception of Intergovernmental Panel on Climate Change data for CO₂ emissions. The basket of ecosystem services included regulating, provisioning, cultural, supporting and underpinning biodiversity require good data sets in many areas of the world. If this programme cannot measure all of these ecosystem services, then it was considered appropriate to use available datasets – where were such data sets? Who owned them? What were useful proxies?
2. A balance sheet/accounting/import/export approach to ecosystem services was thought appropriate. This would enable the static metrics described above to be turned into dynamic assessments of stocks and flows. However it was realised that the ability to validate model approaches was limited but that it might be possible to do some sort of sensitivity analysis to attach risks to some of the ecosystem services.
3. The goal represents a joining of two very different modelling communities and integrating these two approaches and developing some common framework for analysis was considered essential in the first phase of the project. The energy system models MARKAL and UK TIMES, based on cost optimisation should be carefully considered in the context of this project.
4. From these discussions it became clear that methodological processes will be critical as an output from the project. That a framework to consider ecosystem services in a global context should be focussed on 2015 rather than 2050, since methods were required prior to considering long-term futures.
5. There was some consideration of ‘who should pay’? And that the costs of ecosystem services would eventually be met by consumers. There was some thought that monetisation was questionable for some ecosystem services, particularly cultural ecosystem services. Qualitative approaches would be mixed with the quantitative modelling.
6. The workshop discussed scenarios and pathways and how these should be developed. The Committee on Climate Change, Department of Energy & Climate Change and the UK Energy Research Centre all have a contribution to make and a set of low, medium and high carbon reduction scenarios and a ‘plan B’ or failed target- based pathways were all considered in- scope. These would be applied in a context relevant for the UK with different mixtures of energy technologies contributing to both UK energy supply and demand.

7. There was a plea to ensure that demand reduction and increased energy efficiencies were also considered as part of scenarios and that energy supply was not considered in isolation.
8. It was recognised that Life Cycle Analysis (LCA) have a role to play, at least for carbon and there was some interest in developing new LCA approaches further so that they can be linked to ecosystem service metrics.