Energy models for policy

The question is: How can energy models be made more relevant to, and accepted by, energy policy makers who do not have an energy modelling background? Two possible answers are suggested, based on the author's experience as both an energy policy maker and an energy modeller.

Energy policy makers must understand the economics, the engineering, and the political aspects of the energy system. Inevitably, they cannot be experts in all three and because their job involves satisfying political masters, they often focus on the politics. This leads them to commission energy models from economic or technical experts.

But policy makers have a set of (individually reasonable but collectively impossible) demands for these models. Models should:

- Cover all impacts of energy systems
- Be accurate and detailed
- Be consistent
- Be transparent
- Be simple and comprehensible

No single model can do all of these things. Models such as MARKAL and TIMES score well on accuracy, detail and impacts, but are not transparent to policy makers. Simpler tools such as LEAP and the DECC 2050 calculator score well on transparency, and potentially on covering all impacts, but are not as detailed as MARKAL or TIMES.

Two possible approaches are suggested: a hierarchy of models, and separation of objective function and constraints from optimisation engine.