

20 Years of the Parliamentary Office of Science and Technology (POST)

Part 1: the First 10 Years

Next year marks the 20th anniversary of POST's services to Parliament, but it is already over 20 years since the Parliamentary and Scientific Committee (P&S) established the charitable foundation which allowed POST to be created. Dr Michael Clark, who was Treasurer at the time and later became Chairman of POST's Board until 1997, and Prof Michael Norton, POST's first director, look back on initial objectives and early experience, and how relevant these were to Parliament's current needs. In the next issue of SiP, the current Chairman and Director will bring the story up to the present and offer some thoughts about the future.

A Brief History of POST

Since 1939, the P&S had encouraged Parliamentarians to explore the implications of scientific developments for society and public policy, but as our economy became more dependent on technological progress, and the negative effects of technology (especially on the environment) became more apparent, some felt that Parliament needed its own resources on such issues. Parliamentarians not only required access to knowledge and insights into the implications of technology for their constituents and society, but also needed to exercise their scrutiny functions over legislation and administration. This thinking was also influenced by the fact that specialised parliamentary science and technology organisations already existed overseas.

Some P&S members (Sir Ian Lloyd MP, Sir Trevor Skeet MP, Sir Gerry Vaughan MP, Lords Kennet, Gregson and Flowers among others) visited already-established organisations in the US, Germany and France, and this reinforced their view that modern Parliaments needed their own 'intelligence' on science and technology-related issues. Initially they asked the then Thatcher government to fund such services at Westminster but were asked first to demonstrate a real need. This led to the P&S creating a charitable foundation to raise funds from P&S members; the reaction was

sufficiently positive to be able to recruit a Director from April 1 1989.

POST's Original Mission

POST's formation followed overseas models by adopting the principle that it should **serve both Houses**, and its output should be apolitical and of potential value to Parliamentarians of all parties. POST should access external scientific expertise, and should deliver clear, easy to understand, accurate and objective reviews. Thorough quality-control should ensure that MPs and Peers could have confidence in the information should they wish to cite it in debate. These principles were reflected in the structure of POST's Board with members from the Commons and Lords together with distinguished scientists and engineers from the wider world.

Overseas models were internally funded (the US Congress' Office of

Technology Assessment (OTA) had over 100 staff, and European equivalents typically 10 to 15); in contrast, POST in 1989 had one director, a secretary and also needed to raise its own funds. The new POST thus faced a serious conundrum! POST's founders had been inspired by detailed and lengthy 'technology assessments' (TA) carried out overseas (Table 1), however POST lacked the resources to do the same. This forced us to think carefully about the real needs of our Parliament. These seemed to fall into two categories. Firstly there was the individual MP or Peer for whom information and analysis had to be delivered in a form that could be absorbed quickly. Lengthy reports were not likely to be much use to the busy Parliamentarian juggling many tasks every day and lacking support staff. We thus decided to focus initial briefings into a 2-4 page 'POSTnote' format.

Table 1 Principles of Technology Assessment¹

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- interpret, analyse and anticipate technological issues of interest to Parliament
 - set out the facts and identify where agreements and disagreements exist
 - analyse the interactions between policy and scientific and technological developments
 - discuss potential options for parliamentary action, and their ramifications
 - assure objectivity and relevance to the parliamentary process
 - contribute to the effectiveness and credibility of the parliamentary process by helping decisions to be better informed.
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A fundamental precondition was relevance to Parliament; thus POST's agenda was always decided by the Board which, through its structure, could assess both parliamentary and scientific relevance. Early subjects related to short-term issues (eg human embryo research, computer misuse, oil rig disposal, Kuwaiti oil fires, etc), while others contributed to longer term awareness (eg ozone layer depletion, global warming, antibacterial resistance, risk assessment, etc). Both types helped Parliamentarians to contribute in debates and exert influence on government.

However POSTnotes, while useful for background understanding and for supporting brief interventions (eg in PQs or debates), did not allow subjects to be explored in sufficient depth for the detailed scrutiny role of Parliament. As soon as resources allowed, we thus supplemented POSTnotes with more detailed analyses where the Board believed it could help individual Parliamentarians or select committees to examine the policy aspects of science and technology issues in greater depth.

From Birth to Adoption

POST attracted more resources and by the time of the 1992 inquiry into the funding of POST, there were three specialists, as well as short-term secondments from organisations such as Research Councils. The Information Committee recommended that Parliament should adopt POST for an initial three years² and subsequently at a second inquiry for five years³. In both inquiries, the burden of proof was put on POST to demonstrate utility as well as output, so we used questionnaires to assess real interest and demand from Parliamentarians and committees.

The Commons Information Committee assessed the case for POST against the background that Parliament already had a Science and Environment Section in the Commons Library and that select committees (especially the Lords Science and

Technology Committee) also inquired into technological issues. However, thanks to close and friendly working contacts, we had ensured services remained complementary and endeavoured to create a proper position for POST between Library briefings and investigations by committees. An example of synergistic relationships with select committees was the POST study on radioactive waste which was taken as the 'basic text' for the Lords Science and Technology Committee's 1998 inquiry.

The first 10 years

With hindsight we can categorise POST's output as:

- helping individual Parliamentarians develop their own view on a scientific issue
- contributing to informed debate in the chamber
- providing information of value in reacting to constituents' concerns
- identifying potential subjects or laying the groundwork for committee inquiries
- providing support on particular issues during or after an inquiry.

POST material¹ was cited in debate, used as a subject for an adjournment debate, provided initial analyses for committee inquiries, or actually brought future developments to the attention of Parliament for the first time. To be relevant to Parliament often means covering issues where there is fierce controversy, as can be seen in some of the subjects tackled – research involving human embryos, animal testing, illegal drugs, and radioactive waste.

But how did our experience compare with the other Parliaments on which POST's rationale had been based? Ironically, the US OTA (formed in 1971) was zero budgeted by the new Republican Congress of 1995. At that time we considered whether this had any implications for POST but concluded that this reflected US internal politics rather than a reduced

demand for analysis of science-based issues. Indeed, OTA's demise contributed to the era where science became "cherry picked" to support particular political ideologies rather than informing policy⁴. Congress has since had second thoughts by re-establishing a TA service. In contrast with the USA, TA in Europe has spread and the European Parliamentary TA Association (EPTA) network has grown from the 6 members in 1989 to 18 now⁵.

Present needs of Parliament - have they changed?

We wonder if Parliament's need for support has changed in these 20 years. Of course, science changes, but we do not believe its importance to society and Parliament has lessened. Science and technology continue to raise ethical issues where Parliament needs to consider what rules and norms to apply. Twenty years ago it was human embryo research; more recently stem cells. Twenty years ago there was debate over the human contribution to global warming; now it is over how on earth can we slow and adapt to it. Some, such as how to use IT effectively, seem to be fixtures!

Parliamentarians remain the target of lobbying – for example on global warming, there have been well-funded campaigns of 'spurious science'⁶ aimed at manufacturing uncertainty in the science which bodies like POST can help put into an objective perspective. Equally, 'joined-up' government remains elusive – there is a government target for greenhouse gas reduction but departmental decisions (whether on transport or on energy) remain fragmented. Such policy issues invite parliamentary scrutiny supported by detailed and objective policy analysis. Indeed one of the visions of POST's founders was to cut across disciplines and departments – a systems approach to policy analysis. Other examples are that there are often unintended consequences from actions – eg concerns over the scale of animal testing conflict with rules on testing more chemicals and food supplements. Our future changes

rapidly – eg what are the implications on transport demand projections of oil at current or even higher prices? As seas rise around our coasts with a growing population, some difficult technological and societal choices may also have to be made in the future. POST's founders would have seen POST, with its ability to access external networks of experts, stakeholder groups and professional societies, as well-placed to help Parliamentarians exert effective and insightful influence on such issues.

Finally, though it is right that POST be assessed on its value to Parliamentarians and committees, we

should not lose sight of the original objective to help raise the credibility of the parliamentary process as a whole. We believe that technology assessment, by engaging leading experts and stakeholders in the process, helps improve understanding of the parliamentary process. Some of the early POST reports (eg Tunnel Vision, Nanotechnology, Dealing with Drought, the BSE crisis, and Technology Foresight) had a significant impact outside Parliament¹. This, in our view, not only raised Parliament's credibility but also helped inform subsequent dialogues between Parliament and the stakeholders on the issue concerned.

Notes

1. POST's activities to 1998 and those of other countries' equivalent offices are described in "Parliaments and Technology-the development of Technology Assessment in Europe" (N. Vig and H. Paschen eds). SUNY Press, 2000.
2. Report of the Commons Information Committee on POST (Session 1991-2. HC325).
3. Report of the Commons Information Committee on POST (Session 1994-5. HC578).
4. Many examples are in Chris Mooney's "The Republican War on Science". Perseus Books, 2006.
5. <http://www.eptanetwork.org/EPTA/>
6. Norton, M.G., Kass, G., and Allum, N. "Combating Spurious Science". *Science and Public Affairs*, Dec 2007, p18.

The Severn Estuary: A Barrage or a Bore

Robert Freer

Using the very high tides in the Severn Estuary as a free and perpetual source of hydro-electric power looks very attractive at first sight. Until it is examined more closely. A new feasibility study commissioned by the Government has revived interest in this much discussed project.

The basic idea is straightforward and uses established technology. A barrage housing sluice gates and turbines would be built across the estuary. The gates would be opened as the tide floods in and closed at high tide to

impound the water behind the barrage. As the tide recedes the water would be released through the turbines to generate electricity for a few hours until the tide starts to rise again. The turbines would be generating electricity for about a quarter of the day.

But in practice there are some snags. Although the electrical output is predictable (because the tides are predictable) it would vary throughout the year. At the spring and autumn equinox the maximum tidal range at Avonmouth is 40 feet, but it is only about half that during neap tides at the summer and winter solstice. The electrical output would then be correspondingly less.

There is also the problem of matching the electrical output to the daily demand for electricity which is supplied by the Grid. The tides are generated by the moon and they rise and fall according to the lunar cycle. High tide occurs at a different time during the day and hence so does the



electrical output. The cycle repeats every two weeks. But we live our lives according to the solar cycle and our electrical demand follows a regular pattern every day.

The national electrical demand supplied by the Grid is low at night (about 35GW) but starts to rise from 5am to a plateau at mid morning. Then it rises to a peak at 6pm (60GW in winter) after which the demand falls again.

When the maximum output from the turbines coincides with the peak electrical demand the power generated (up to 8.6GW) is particularly valuable and would command a high price because it would replace expensive electricity from alternative stand-by plant. But this happens only once a fortnight. At other times the value of

