

A programme to be proud of

Keith Mason, chief executive of the UK's Science and Technology Facilities Council, admits that the last 18 months have been challenging for the fledgling council with tough decisions required following last year's spending review, but now says that his priority is focusing on delivering top-class science

There are aspects of the last 18 months that have been difficult for everybody at the Science and Technology Facilities Council (STFC) and for the university groups that it supports, both in terms of creating the necessary infrastructure for the new council and developing effective communication with the science community. It is clear that during this period there was a breakdown in the relationship with some parts of the science community. But I believe that, throughout this challenging period, the STFC, together with the scientists and engineers that it supports, has continued to do excellent work. In doing so, the council has delivered on its commitments to fund the very best science.

I would like to put the last 18 months in context and consider what we at the STFC have had to deal with. We had to manage the merger of two research councils – the Particle Physics and Astronomy Research Council (PPARC), which was a grant-funding body, and the Council for the Central Laboratory of the Research Councils (CCLRC), which operated laboratory facilities. These are two very different functions and the councils had very different cultures. Anybody who has ever had to manage a merger between two disparate organizations will tell you that the process requires a lot of time and effort to settle down.

Following fast on the heels of the merger, we also had to give a lot of attention to preparing for the Comprehensive Spending Review (CSR), the outcome of which was announced by the government in November last year. This required difficult decisions about the allocation of resources given that we had an ambitious programme that had to fit within a specific budget allocation. As a new council with an expanded science portfolio, there was also an imperative to conduct a thorough review of our programme – the so-called Programmatic Review – that



Stephen Kil/STFC

Cutting edge The new £140m second target station at the ISIS neutron source near Oxford.

we will now repeat every two years to guide future funding decisions.

I would be the first to admit that not all of our processes were as well established as we would have liked when we began the Programmatic Review in late 2007, just months after the merger. Our initial consultation with the science community was not as visible as it could have been, and some of our communication was found to be lacking. All of these issues were recognized at a senior level in the STFC, and we have since put a great deal of effort into building relations with the research community by developing and implementing an open consultation process.

We are ambitious, and like all scientists and science organizations we would welcome more money: there is no shortage of excellent research that we could fund with more resources. To make room for exciting new opportunities, we had to make some difficult but necessary reductions in some existing activities in order to balance the budget, including a cut in the planned volume of grant-funded activity. This is regrettable and painful, but we have to maintain a balance between the provision of new facilities and the ability to exploit both new and existing facilities.

Cutting-edge projects

Our attention is now correctly focused on the nearly £2bn over three years that we have been allocated by the government for an ambitious and exciting science programme that will deliver excellent research and posi-

tion the UK at the leading edge of international science. Building on the consultation with the community, the programme that was announced in July (see *Physics World* August p8) represents a balanced portfolio of projects. The funding includes support for fundamental science and research facilities as well as research and development in nuclear and particle physics, neutrino science, neutron scattering, lasers, light sources, space exploration and astronomy.

Among some of the exciting projects we are supporting, the STFC is helping to secure the future of UK ground-based astronomy through its investment in ambitious global projects, including the Atacama Large Millimetre Array in Chile, the Square Kilometre Array (SKA) and the European Extremely Large Telescope. The UK is also leading the development of one of the three instruments for the James Webb Space Telescope, the successor to the Hubble Space Telescope. The STFC is supporting the ExoMars mission – to search for evidence of past and present life on Mars – through its participation in the European Space Agency's Aurora Programme. In addition, we are at the heart of the search for gravitational waves with the GEO600 detector in Germany and the upgrade to LIGO in the US.

We are also supporting the Facility for Antiproton and Ion Research in Darmstadt, Germany, as a vital step for UK nuclear physicists to develop their understanding of nuclear structure, nuclear astrophysics and hadron physics. In particle physics, the UK

has substantial involvement in the Large Hadron Collider at CERN, the most ambitious particle-physics experiment ever undertaken, and the STFC is investing in T2K in Japan, which is soon to be the world's leading neutrino-physics experiment.

As for facilities based in the UK, the STFC has made a £140m investment in the second target station at the ISIS neutron spallation source at the Rutherford Appleton Laboratory in Oxfordshire, which will enable the science programme to expand into the key research areas of soft matter, advanced materials and bio-science (see *Physics World* July pp12–13). We are developing the new ULTRA laser facility to enable scientists to monitor, among other things, biological processes occurring on the femtosecond scale, and building a new world-class laser facility called Astra Gemini, which will have an intensity some 10 times greater than any other in the world. And of course the STFC is an 86% shareholder in the £260m DIAMOND synchrotron storage ring, which is the UK's biggest new facility of the last 30 years.

Vision for the future

Shortly after we announced the outcome of the Programmatic Review in July, with a three-year spending programme worth

over £1.9bn, we received the news that John Denham, secretary of state for Innovation, Universities and Skills, had approved an additional £236.5m of earmarked cash from the Large Capital Facilities Fund, which is separate from the CSR. This money is allocated by the Department for Innovation, Universities and Skills for large infrastructure capital projects based on the recommendations of Research Councils UK (RCUK).

This additional funding will be distributed across potential investments, such as a national centre for high-performance computing at the Daresbury Science and Innovation Campus. It will also fund a further 10 beamlines at DIAMOND, be used for another 18 instruments between 2012 and 2016 at the ISIS second target station, and support the development of SKA.

Although earmarking of money does not constitute an automatic commitment of funds—and each of these projects still needs a detailed science and business case before approval by RCUK—it is nevertheless an indication of the kind of resources that UK science can expect to benefit from.

Everybody at the STFC is committed to a deeper and more structured engagement with the science community, which will help us to build a strong case for science in the

UK. As part of this engagement, next month the STFC will start consulting with the community and its staff about its corporate vision and strategy, which we hope to finalize early in 2009.

The corporate vision recognizes our role in funding and delivering world-class science and facilities. It acknowledges the essential underpinning role of technology and engineering, and the creation of skills and new knowledge that benefit not just the science community but the whole UK economy.

Our vision includes the social and economic impact of our science; and our strategy will outline how we will ensure our fundamental research can be harnessed and exploited by innovators, entrepreneurs and industry. The STFC now has a world-class research programme and is meeting its responsibility to deliver the best science for the UK. We are committed to engagement with the science community, and to working together to build a common agenda that lets us look forward with confidence.



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