

National Endowment for Science, Technology and the Arts : a follow-up : report, together with proceedings of the Committee, minutes of evidence and appendices / Science and Technology Committee.

Contributors

Great Britain. Parliament. House of Commons. Select Committee on Science and Technology.

Publication/Creation

London : Stationery Office, 2002.

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House of Commons

Science and Technology
Committee

**NATIONAL
ENDOWMENT FOR
SCIENCE, TECHNOLOGY
AND THE ARTS:
A FOLLOW-UP**

Sixth Report of Session 2001–02

HC 1064

LIST OF REPORTS

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Third Report: Science Education from 14 to 19 (HC 508-I)

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Fifth Report: Government Funding of the Sciences (HC 774-I)

First Special Report: The Government's Response to the Science and Technology Committee's Fourth Report, Session 2000–01, on The Scientific Advisory System (HC 360);

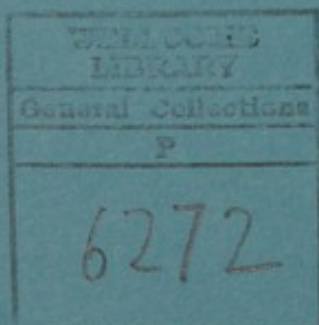
Second Special Report: The Government's Response to the Science and Technology Committee's Sixth Report, Session 2000–01, Are We Realising Our Potential? (HC 361);

Third Special Report: The Government's Response to the Science and Technology Committee's Seventh Report, Session 2000–01, on Wave and Tidal Energy (HC 377).

Fourth Special Report: Government Response to the Committee's Third Report of Session 2000-01, on Scientific Advisory System: Scientific Advice on Climate Change (HC 493).

Fifth Special Report: The Research Assessment Exercise: Government Response to the Committee's Second Report, Session 2001–02 (HC 995)

Sixth Special Report: Science Education from 14 to 19: Government's Response to the Committee's Third Report, Session 2001–02 (HC 1204)



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Sixth Report of Session 2001–02

*Report, together with
Proceedings of the Committee,
Minutes of Evidence and Appendices*

Ordered by The House of Commons to be printed 21 October 2002

HC 1064

Published on 31 October 2002 by authority of the House of Commons
WELLCOME L
INFORMATION SERVICE
London : The Stationery Office Limited
£12.00

- 7 NOV 2002

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SCIENCE AND TECHNOLOGY COMMITTEE

The Science and Technology Committee is appointed by the House of Commons to examine the expenditure, administration and policy of the Office of Science and Technology and its associated public bodies.

Current Membership

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 Mr Parmjit Dhanda MP (*Labour, Gloucester*)
 Mr Tom Harris MP (*Labour, Glasgow Cathcart*)
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The Committee is one of the departmental select committees, the powers of which are set out in House of Commons Standing Orders, principally in SO No.152. These are available on the Internet via www.parliament.uk.

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The Reports and evidence of the Committee are published by The Stationery Office by Order of the House. All publications of the Committee (including press notices) are on the Internet at www.parliament.uk/parliamentary_committees/science_and_technology_committee.cfm

A list of Reports of the Committee in the present Parliament is on the inside front cover of this volume.

Contacts

All correspondence should be addressed to The Clerk of the Science and Technology Committee, Committee Office, 7 Millbank, London SW1P 3JA. The telephone number for general inquiries is: 020-7219-2794; the Committee's e-mail address is: scitechcom@parliament.uk.

Footnotes

In the footnotes of this Report, references to oral evidence are indicated by 'Q' followed by the question number. References to written evidence are indicated by the page number as in 'Ev 12'.

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¹ National Lottery Act 1998, section 17(1).

² National Lottery Act 1998, section 17(2).

³ The National Endowment for Science, Technology and the Arts: Second Report of the Science and Technology Committee, Session 1998-99, HC 473 (London: HMSO, 1999).

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in response to a request from the Committee for the Science and Technology
Panel 2 to conduct an inquiry into the activities of the
Panel 2 and the National Lottery Act 1998

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SIXTH REPORT

The Science and Technology Committee has agreed to the following Report:

NATIONAL ENDOWMENT FOR SCIENCE, TECHNOLOGY AND THE ARTS: A FOLLOW-UP

I. INTRODUCTION

NESTA and the National Lottery Act 1998

1. In 1997, the White Paper *The People's Lottery* set out the case for an organisation which would identify and foster innovation and creativity, in order to develop and commercialise original artistic and technological ideas. The National Endowment for Science, Technology and the Arts (NESTA) was set up under the National Lottery Act 1998. Under the provisions of the Act, NESTA's objective is to "support and promote talent, innovation and creativity in the fields of science, technology and the arts":¹

- by helping talented individuals or groups in the fields of science, technology and the arts to realise their potential;
- by helping to turn inventions or ideas in these fields into products and services which can be effectively exploited and the rights to which can be effectively protected; and
- by contributing to public knowledge and appreciation of science, technology and the arts.²

Funding and status

2. Funding for NESTA took the form of a one-off endowment of £200 million, derived from the profits of the National Lottery. In 1998, this was expected to provide NESTA with an annual income of around £12 million.

3. NESTA was launched on 30 June 1999; its programmes became active in December 1999. It is an executive non-departmental public body of the Department for Culture, Media and Sport. NESTA is governed by a board of up to thirteen trustees, which meets five times a year, chaired by Lord Puttnam of Queensgate. The staff are led by Jeremy Newton, the Chief Executive. NESTA's core work comprises three distinct programmes: Invention and Innovation; Fellowships; and Education.

Our inquiry

4. Our predecessor Science and Technology Committee reported on NESTA in 1999, shortly after NESTA announced its first schemes.³ The Committee welcomed NESTA and urged it to take a strategic approach to its activities. It encouraged NESTA to take a high risk approach and suggested that NESTA should be evaluated over the long term "on a

¹ National Lottery Act 1998, section 17 (1)

² National Lottery Act 1998, section 17 (2)

³ *The National Endowment for Science, Technology and the Arts*, Second Report of the Science and Technology Committee, Session 1998-99, HC 472 (hereafter HC 472)

basis of output and value for money rather than operational cost efficiency".⁴ As NESTA approached its first quinquennial review, we decided to follow up that Report and examine NESTA's progress.

5. Lord Puttnam of Queensgate, Chair of NESTA, Mr Jeremy Newton, Chief Executive and Mr Mike Tomlinson, Director of Science Year and Education Committee member, appeared before us on 8 July 2002. We received written memoranda from NESTA and also the British Antarctic Survey and Braunarts; the Arts and Humanities Research Board; the Department for Culture, Media and Sport; the Particle Physics and Astronomy Research Council; the Royal Academy of Engineering and the Royal Society. We are grateful to all those who provided evidence to us and especially to our specialist adviser Professor Michael Elves, former Director of the Office of Scientific and Educational Affairs, Glaxo Wellcome plc.

1. In 1997, the White Paper *The People's Lottery* set out the case for an organisation which would identify and foster innovation and creativity, in order to develop and commercialise original artistic and technological ideas. The National Endowment for Science, Technology and the Arts (NESTA) was set up under the National Lottery Act 1998. Under the provisions of the Act, NESTA's objective is to "support and promote talent, innovation and creativity in the fields of science, technology and the arts".¹

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² The National Endowment for Science, Technology and the Arts: Second Report of the Science and Technology Committee, Session 1998-99, HC 472 (London: HC 472).

⁴ HC 472, para 9

II. PROVISION OF INFORMATION

Reports

6. NESTA has produced three Annual Reports and a three year Strategy Plan for 2000–2003. All are available on NESTA's website. We looked to these for information about NESTA and its activities. The Annual Report 1998–1999 is brief, as is reasonable for such a young organisation, and contains information about its plans for future work and targets for its administration and award schemes. *Journeys*, the Annual Report for 1999–2000, and *Take the Plunge*, the Annual Report for 2000–2001, might be expected to contain more factual information. Both have chapters dedicated to describing current projects and award recipients. Neither have detailed information about costs or programme objectives. *Journeys*, for example, includes two 'think' pieces, "Patronage – creative space or creative shackles" and "Are UK investors brave enough?" which although relevant in subject to the work of NESTA are of no value in describing or assessing what NESTA has achieved in the past financial year. "Patronage," for example, tells us –

"Design and the emotional and aesthetic responses that it provokes, together with a whole set of hard-to-define qualities known as "symbolic values" are what give products, and the economies that produce them, their competitive edge".⁵

The section containing the summary financial statement however warns the reader "This summarised statement does not contain sufficient information to allow as full an understanding of the results and state of affairs of NESTA as would be provided by the full Annual Accounts".⁶ It explains that the full Accounts can be provided on written request from NESTA.

7. *Take the Plunge* is divided into three parts: "Talking the talk", "Walking the walk" and "Putting our money where our mouth is". "Talking the talk" is comprised mostly of a "conversation" between Lord Puttnam, Chair of NESTA and Jeremy Newton, Chief Executive, with an outline of NESTA's future plans. "Walking the walk" contains short descriptions of various projects and "Putting our money where our mouth is", the shortest section by far, contains outline financial statements and targets for the coming year in the form of a Business Plan.

8. NESTA's Annual Reports are a break from the norm. While it is refreshing to see a creative approach in these documents, the cost of these publications and the need to convey essential information to the reader make it important that they be clear and concise in style. An Annual Report which contains essays but lacks full financial statements is of no assistance to those attempting to evaluate the work of a publicly funded organisation. **Annual Reports should not read like the production notes in a theatre programme. Creativity should not be at the expense of clarity. We recommend that NESTA in future provide Annual Reports which contain clear and full information on expenditure, including awards made; the targets; and expenditure plans.**

⁵ *Journeys*, NESTA's Annual Report 1998–1999, Patronage – creative space or creative shackles

⁶ *Journeys*, NESTA's Annual Report 1998–1999, Summary Financial Statement

Website

9. NESTA's website has information about its programmes and how to apply for grants. It also has an archive of press releases and brief background information. Those interested in NESTA's work are able to find information about its programmes and advice on making an application. Information about how NESTA makes its awards and the financing behind them is harder to find. We would like to see NESTA making greater use of its website in order to enhance its accountability to the public in a transparent manner. For example, full accounts should be made available online, to accompany the Annual Reports. **We urge NESTA to make greater use of its website in conveying important information to those seeking to evaluate its work.**

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III. WORK OF NESTA

Programmes

Invention and Innovation

10. The Invention and Innovation programme is designed to help inventors develop ideas into commercial products and services. Funding supports a range of activities such as research and development, patenting and securing intellectual property right and general business costs. Since funding began, in 1999, to the end of June 2002, NESTA had spent £5.3 million on 94 awards.⁷ As part of the programme, NESTA takes a stake in each business. Any returns generated are invested in new projects.

11. NESTA's Annual Report 2000-2001 contains a variety of 'success stories' from the Invention and Innovation programme. The memorandum we received detailed some of the projects funded by NESTA. These varied from the production of a device to simplify key hole surgery to the development of a method of making music from the structures of protein molecules.⁸

12. 2,000 applications have so far been received for the awards. The number of awards given each year has steadily increased.

Table 1: Invention and Innovation awards distributed

Financial Year (April to March)	Number of Awards	Amount spent (£ million)
1999-2000	7	0.5
2000-2001	34	2.3
2001-2002	40	1.7
1 April 2002 – 20 June 2002	13	0.8

Source: NESTA⁹

Lord Puttnam told us that NESTA decided at its inception to devote around 40% of its annual income to its Invention and Innovation programme.¹⁰ Mike Tomlinson, Director of Science Year and a member of NESTA's education committee, explained "you have to accept that from the point at which an idea is developed to its actual production, the selling of that product and the making of it, is not a short period of time. It can be lengthy and it can be quick, but there is a period of time. I think it takes about two years between an idea going through to actual production".¹¹ NESTA has now received its first royalty cheque although Jeremy Newton told us that it was worth "less than £1,000".¹²

⁷ Ev 18

⁸ Ev 21-23

⁹ Ev 24

¹⁰ Q 15

¹¹ Q 49

¹² Q 48

13. Jeremy Newton told us in detail about some of NESTA's most successful projects. In addition to the one project already producing royalties for NESTA, he estimated that five or six would begin to show a return within a year. He said –

“Most of the successful invention and innovation projects, interestingly, are in the transport area. They are either very small-scale improvements to engine design, like the one that is already delivering income, or they are very, very large-scale ambitious projects like the amphibious vehicle, which is one of our first projects. That has now received its first million pound order for four large-scale vehicles from British Waterways, who are keen to buy more; and Mitsubishi are planning to order many more. There is a substantial amount of income that we are likely to derive from that project. Cardiff have just committed over £25 million to the Ultra Urban Light Transport Scheme that Martin Lowson developed—again, one of our early projects. Our equity participation in that will mean that we will start to derive income, and probably quite a substantial capital gain from that over the next few years”.¹³

We are encouraged to see that NESTA's Invention and Innovation programme has produced its first commercial success. We hope that it will continue to see a return on its investment as projects come to fruition and recommend NESTA state clearly in its annual reports the level of return it achieves.

14. Our predecessor Committee's Report stated “NESTA will have to take risks with its selection of individuals to be nurtured and ideas to be exploited. If NESTA is to succeed overall, it must dare to fail on specific projects”. We asked about the failure rate of projects so far. Jeremy Newton told us that four of the Invention and Innovation projects had so far been written off: “In two of those cases, they are fascinating failures, if you like, and we have learned more from them than we have learned from most of our successes”.¹⁴ We were worried that so few awards were made in the first years of NESTA and asked whether those in charge at NESTA felt that they had been too cautious or had ‘dared to fail’. Lord Puttnam told us –

“in the past two years we have absolutely spent up on the sums of money available to us and we have taken some significant chances; and I am quite sure that we will fall on our faces on one or two occasions; but I now think that we have enough of a track record now to be able to deal with that. I was less confident that was the case two years ago”.¹⁵

We encourage NESTA to continue to take chances with its Invention and Innovation projects.

Fellowships

15. NESTA awards bursaries or Fellowships each year across the fields of science, technology and the arts. The value of these awards varies from £25,000 to £75,000 and they range from three to five years in length. Most Fellowships are awarded early in the individual's career and are made to those outside academia. Jeremy Newton said that “a small minority ... find their way to institution-based academics, university-based academics”.¹⁶ Funding is provided for different activities depending on the needs of the Fellow, such as financial assistance in attending courses, providing an income during research and development and research costs. A new Fellowship, the “Dreamtime” award,

¹³ Q 42

¹⁴ Q 51

¹⁵ Q 28

¹⁶ Q 33

is to be introduced in 2003. This will be a Fellowship lasting up to a year for individuals established in their careers to take a break from their work for personal development.

16. The number of Fellowships awarded has increased at a similar rate to the Invention and Innovation awards.

Table 2: Fellowships awarded

Year	Awards made	Amount spent (£ million)
1999–2000	6	0.5
2000–2001	15	1.3
2001–2002	35	2.4
1 April 2002–30 June 2002	3	0.2

Source: NESTA¹⁷

The Royal Academy of Engineering praised NESTA's Fellowship scheme, and mentioned the mentoring aspect of the award: "Most NESTA Fellowships involve the appointment of a mentor, who can act as a source of support and advice, as well as playing a role in assessment and monitoring. This scheme works well, with many mentors providing advice and assistance 'beyond the call of duty'".¹⁸

17. The Arts and Humanities Research Board (AHRB) expressed concerns about aspects of NESTA's Fellowships.¹⁹ In its business plans, NESTA has given targets for the number of Fellows it wishes to appoint each year. The AHRB was not sure why NESTA wanted to set targets. We asked NESTA if it had met its target of creating 30 Fellows in 2001–2002. Lord Puttnam told us that they had appointed 28, although figures provided after the evidence session state that 31 had in fact been appointed.²⁰ We too question the wisdom of targets for Fellowships, given that the length and amount awarded varies according to the recipient. **There is a risk that targets might lead to the appointment of NESTA Fellows for the sake of it.**

18. NESTA's first Fellowships are still ongoing. The AHRB told us "we are not clear as to the monitoring and evaluation strategies and mechanisms that have been put in place to enable NESTA to reach a rigorous assessment of whether the scheme has met the aims and objectives set when it was established".²¹ We share these concerns but appreciate that it will not be possible to carry out a full appraisal of the scheme until the conclusion of the first set of Fellowships. **We urge NESTA to identify the objectives of the Fellowships, and the basis of its monitoring and assessment of them, and to carry out an appraisal of its Fellowship programme once the first awards are completed.**

¹⁷ Ev 24

¹⁸ Ev 33

¹⁹ Ev 30

²⁰ Q 52, Ev 24

²¹ Ev 31

Education

19. NESTA's education programme aims to work through collaborative projects to further public understanding of science, technology and the arts. Each year a 'priority' area is selected and project proposals are then invited, which are put to the Education Committee. Successful bidding organisations then work in partnership with NESTA. In the last three years, these areas have included stimulating interest in design and technology and the re-engagement in learning of low-performing groups. NESTA told us "we seek out initiatives which improve the public's understanding of creativity and we pilot new methods of creative learning and support ways of fostering individual talents".²² The value of the award varies from project to project. From 1999 to 30 June 2002, NESTA spent £4.6 million on 69 education projects.²³ Examples include "Technogames", a robot-building exercise carried out with the BBC and others which is now in its second year, and Online Jemma, a 'cyber heroine' studying science who will take part in interactive online dramas featuring topical science related issues, invented by XPT Ltd.

20. The Royal Academy of Engineering told us "[we] would encourage NESTA to steer away from supporting educational projects, for which other sources of funds exist".²⁴ We put this suggestion to NESTA. Lord Puttnam rejected it, telling us "I would say that of all the relationships we have created in the last two years, the most dramatically successful and productive has been that with the Qualifications and Curriculum Agency over the re-design or support for the design technology curriculum".²⁵ We received a memorandum from the British Antarctic Survey and Braunarts who have been involved in Education projects for two years. They told us "Working with NESTA's education team has been a very positive experience for our production team. During the two years since we first approached NESTA for funding ... we have received an unprecedented level of support and encouragement as well as practical guidance".²⁶ **NESTA's Education programme appears to have found a niche in an overcrowded market and we are pleased to hear of its successes. We recommend that NESTA take steps to ensure that it is not funding projects which could be better funded by others.**

Applications for funding

21. Jeremy Newton explained the process used by NESTA in allocating awards across its programmes. Three committees, each comprising three to four trustees (members of NESTA's governing board) and the same number of non-trustees, decide which applications will be successful. The inventions and innovations committee meets monthly and the others every other month. Mr Newton told us –

"They receive quite a substantial amount of background information about all of the substantial proposals we have had in the previous couple of months, and they are discussed and decided on in detail at that stage. They have a reasonable degree of delegated authority to take smaller scale financial decisions. In larger scale cases they are remitted to the next full trustee meeting for final ratification. Most of the detailed discussions and assessments and decision-making is done at committee level".²⁷

²² Ev 16

²³ Ev 24

²⁴ Ev 33

²⁵ Q 71

²⁶ Ev 32

²⁷ Q 44

Applications for the Invention and Innovation and Education programmes are open to all. The Department for Media, Culture and Sport told us that NESTA was “seen as a model for electronic handling of applications”.²⁸

22. The AHRB perceived that “the majority of awards to date have been made in various areas of the arts”.²⁹ We would be concerned if this were indeed the case. Lord Puttnam told us that NESTA did not separate what was spent on the arts, technology and science, “as we believe that could lead us into making a series of wrong decisions, so we try very, very hard not to make decisions on that basis, certainly quarter-to-quarter”.³⁰ We asked if NESTA monitored its work across the categories. Lord Puttnam replied “we monitor very closely, but not in a category sense”.³¹ **NESTA covers science, technology and the arts. We recommend that NESTA give close attention to the distribution of its awards between those sectors as well as the quantity.**

Nominations for Fellowships

23. NESTA Fellows are selected by a network of nominators, experts who are asked to identify talented people in their areas; there are around 150 nominators at any one time. Each nominator may only make two nominations. Once nominated, the candidates are subject to consideration by a fellowship committee and an independent assessor. Applications are not openly sought and only those nominated by the nominators will go forward for consideration by the fellowship committee. Our predecessor Committee’s Report concluded that

“NESTA will have to be constantly alive to the risk of partiality in the selection of Fellows and projects. It must also be prepared for close scrutiny of its selection procedure and be able to demonstrate that it is operating in a fair and open manner”.³²

We heard no criticism about this method of selecting Fellows in the memoranda we received. The Department for Culture, Media and Sport told us “on the whole, the selection processes are open and fair”.³³ Professor Ian Halliday, the Chief Executive of the Particle Physics and Astronomy Research Council (PPARC), who had acted as a NESTA nominator, pointed out that inviting applications for such Fellowships might well have resulted in many thousands of applications. He felt NESTA had acted wisely when it “chose instead to seek Fellowship nominations through organisations such as PPARC who already had highly competitive selection schemes in place for funding individuals”.³⁴ Lord Puttnam told us that NESTA had taken its system from the MacArthur Foundation in the United States because “it would have been very easy in years one and two to be flooded by an avalanche of inquiries, and then you are just dealing with the consequent situation in which many people are terribly disappointed”.³⁵

24. We asked how NESTA picked its nominators and Lord Puttnam told us the organisation had looked for people who were “full of energy and self-starters”.³⁶ NESTA told us in writing that “nominators are recruited for their level of expertise and achievement within a specific field...and for their knowledge of cutting edge practice ... Nominators

²⁸ Ev 29

²⁹ Ev 31

³⁰ Q 36

³¹ Q 37

³² HC 472, para 11

³³ Ev 29

³⁴ Ev 35

³⁵ Q 56

³⁶ Q 55

come to our attention through networking, suggestions (solicited and unsolicited), desk based research, our own contacts within the sector and through media attention".³⁷ Organisations such as PPARC have also been invited to become nominators and 50 are now registered. Having received almost no nomination from the East Midlands and appointing no Fellows from that region, NESTA has established a network of 'talent scouts' there to be more pro-active in finding nominations. Across the country it is also inviting organisations to nominate individuals. We note with approval that the new Dreamtime Fellowships will be open to applications from all.

25. We remain to be convinced that the nomination system does not rely too heavily on who knows whom. Nominators are not recruited through an open appointment system. We understand that NESTA's nomination system is designed to avoid a flood of applications which could overload its administrative capabilities. We have not heard any evidence of problems with applications to NESTA's Fellowship programme but we are nevertheless concerned that it lays the organisation open to accusations of networking or favouritism. Those who are not working in areas which have a nominator appointed within it, or do not move in the same circles, may not be given access to a Fellowship. We recommend a rethink of this system to ensure it does not discriminate against any suitable candidates.

Other work

26. Over the past four years, NESTA has also moved into other areas. It has taken the lead in the Government's *Science Year* project; developed the NESTA Futurelab, which is a project to discover new ways of using new technologies in education, and extended its awards programmes. Partnerships have been established with other bodies for a series of projects. For example, the Science Museum and the Royal College of Art have produced a 'Product of the Future' exhibition which showcased young designers' work. Channel 4 and Blackwatch Television have received backing for a digital animation project, MESH; and NESTA and the BBC, in partnership, distribute the Tomorrow's World Awards for inventions and innovations.

Science Year

27. NESTA was awarded the contract to manage Science Year by the Department for Education and Skills (DfES). Funding for Science Year was initially £3.35 million.³⁸ It was to run from 7 September 2001 to 31 August 2002 and was aimed at 10 to 19 year olds. In July 2002, DfES announced that it intended to extend Science Year to July 2003 and rename the project Planet Science. We asked NESTA whether Science Year had cost it any money, in terms of extra staff or programme costs. Jeremy Newton told us

"it is all paid for from the DfES. We have allocated some of our programme money towards projects that relate to Science Year, so some of NESTA's education programme money has been allocated to the Science Year project; but the total operating bill has been picked up by DfES".³⁹

We were told that NESTA would retain management of the project for as long as it runs. Lord Puttnam told us that NESTA would sign a new contract and "see it through".⁴⁰

³⁷ Ev 27

³⁸ Q 45

³⁹ Q 82

⁴⁰ Q 83

28. Mike Tomlinson, Director of Science Year, told us "I am worried at the moment how one is going to say to schools in September that we are not finished and we are starting again with a second year ... We are faced with a challenge".⁴¹ The profile of Science Year has not been as high as its organisers had hoped. NESTA told us that there had not yet been any formal evaluation of the success or otherwise of the project but that "quantitative measures, for example the numbers of schools, teachers and pupils involved in different activities" appeared to show a good level of involvement.⁴² We are concerned that the public awareness of Science Year/Planet Science, a project to which well over £4 million has already been committed, may be low, even among those in the target age range. We recommend a thorough analysis of Planet Science be carried out as soon as practicable, and an assessment of its impact in the media and in schools made to inform future projects of this nature.

Non-programme costs (£ million)	Education (£ million)	Innovation and Innovation (£ million)	Fellowships (£ million)
1.4	3.4	4.6	3.4
	1.8	1.7	2.4

29. In our evidence with NESTA in July we tried to get a clearer picture of what had been spent where. We found confusion on the subject. For example, we asked about the £8 million that had been committed in the Business Plan to innovation and innovation and innovation. NESTA told us "and Education. The figure definitely was spread across all three [programmes]". We asked about the £5 million which had been committed to innovation and innovation projects since 1999, according to NESTA's memorandum. "That splits across both the Innovation and Innovation and the Education programme". Both these replies were at odds with the information we had obtained from NESTA's Business Plan and memorandum. Lord Newton said: "The figures NESTA gave us appear to be those for provision for hard commitments". The figures NESTA gave us appear to be those for hard commitments. We recommend that NESTA be clearer in its terminology when presenting financial information.

30. In our evidence with NESTA in July we tried to get a clearer picture of what had been spent where. We found confusion on the subject. For example, we asked about the £8 million that had been committed in the Business Plan to innovation and innovation and innovation. NESTA told us "and Education. The figure definitely was spread across all three [programmes]". We asked about the £5 million which had been committed to innovation and innovation projects since 1999, according to NESTA's memorandum. "That splits across both the Innovation and Innovation and the Education programme". Both these replies were at odds with the information we had obtained from NESTA's Business Plan and memorandum. Lord Newton said: "The figures NESTA gave us appear to be those for provision for hard commitments". The figures NESTA gave us appear to be those for hard commitments. We recommend that NESTA be clearer in its terminology when presenting financial information.

⁴¹ Q 78

⁴² Q 77

IV. FUNDING

Expenditure

General

29. NESTA's expenditure and its funding commitments for 2001-2002 are contained in its Business Plan, which is found in its Annual Report for 2000-2001.⁴³ More detail is provided in the full published accounts.⁴⁴ NESTA's Business Plan also contains targets for the number of awards it intends to distribute over the coming year. The Business Plan for 2001-2002 was the most recent available to us. It shows a total commitment of £12.8 million, broken down over the three main programmes and non-programme related costs. However, the figures we received from NESTA after our evidence session were significantly different.

Table 3: Costs for year 2001-2002

	Fellowships (£ million)	Invention and Innovation (£ million)	Education (£ million)	Non- programme costs (£ million)
Business Plan	3.4	4.6	3.4	1.4
Memorandum	2.4	1.7	1.6	

In its initial memorandum, NESTA gave us figures for total expenditure to April 2002. These showed a total commitment since 1999 of £4.45 million to Fellowships, £5 million to Invention and Innovation and £4.49 million to Education. Lord Puttnam told us that NESTA spent 30% of its programme expenditure on Fellowships, 30% on Education and 40 % on Invention and Innovation.⁴⁵ This does not appear to be reflected in the figures we were given after the evidence session. We suspect that this confusion stems from the differences between "expenditure" and "commitment". NESTA's full financial accounts for 2000-2001 include breakdowns for "soft commitments", "hard commitments" and "provision for hard commitments".⁴⁶ The figures NESTA gave us appear to be those for hard commitments. **We recommend that NESTA be clearer in its terminology when presenting financial information.**

30. In oral evidence with NESTA in July we tried to get a clearer picture of what had been spent where. We found confusion on the subject. For example, we asked about the £8 million that had been committed in the Business Plan to Invention and Innovation and Fellowships in 2001-2002. Jeremy Newton told us "and Education. The figure definitely was spread across all three [programmes]".⁴⁷ We asked about the £5 million which had been committed to 81 Invention and Innovation projects since 1999, according to NESTA's memorandum.⁴⁸ Jeremy Newton replied "That splits across both the Invention and Innovation and the Education programme".⁴⁹ Both these replies were at odds with the information we had obtained from NESTA's Business Plan and memorandum. Lord

⁴³ Eg *Take the Plunge*, NESTA's Annual Report 2000-2001

⁴⁴ *National Endowment for Science, Technology and the Arts Account 2000-2001*, HC 285, published October 2001

⁴⁵ Q 15

⁴⁶ HC 285

⁴⁷ Q 30

⁴⁸ Ev 18

⁴⁹ Q 17

Puttnam then told us that “roughly £8 million has been spent on Invention and Innovation and £6 million each on Education and Fellowships”.⁵⁰ We were told these were the up-to-date figures, which included activity to the end of June 2002. It seems unlikely that the totals had increased so much in three months. We assume that NESTA’s accountants know how much it has spent and where, but it is worrying that the Chief Executive and Chairman can demonstrate such vagueness, not over thousands of pounds, but over millions. We note that NESTA’s business plan for 2002-03 is still not available on its website, even though we are six months into the financial year. **We are disturbed at NESTA’s lack of clarity surrounding its programme expenditure. We expect the next Annual Report to provide reliable figures, making it clear what has actually been spent and what is an estimate.**

Administration and staff

31. NESTA’s initial memorandum did not include a figure for its administrative costs. The Business Plan committed £1.4 million to non-programme related costs in 2001-2002. NESTA told us that expenditure on administration in 2000-2001 was £1.27 million, which represents 9.8% of income for the year.⁵¹ The AHRB told us that its running costs were subject to a cap of 5% of total expenditure.⁵² The Research Councils are required to spend less than 4% of their total expenditure on administration. The breakdown of NESTA’s expenditure on operating costs revealed that in 2000-2001 it spent substantial sums on agency staff and IT costs, respectively £149,000 and £185,000. NESTA explained to us in writing that this was in a period of development for NESTA. NESTA also has a target in its Business Plan for staff numbers which is set at 35. The 2001-2002 Business Plan included costs for 48 staff. We asked NESTA to explain. Jeremy Newton told us that the extra staff were partially made up by the Science Year team.⁵³ As we were told that these staff were funded by DfES, we do not see why they are accounted for in NESTA’s Business Plan. We were told other staff were working on ‘off-line arms’ length projects.⁵⁴ We asked whether or not staff levels would return to 35. Lord Puttnam replied “I do not think there is a hope in hell that we will keep to the 35”.⁵⁵ If this target is unrealistic, it needs to be readdressed and new targets made. **We understand that NESTA may have faced high operating costs during its development. Nevertheless we hope to see administration decreasing as a percentage of NESTA’s income in the future. We also urge NESTA to make a realistic estimate of its staffing needs in order to minimise the amount spent on agency staff and permit accurate financial planning.**

Endowment

32. NESTA was set up with an endowment from National Lottery funds of £200 million. The National Lottery Act requires NESTA to maintain, at least, the initial cash value of this endowment and to invest it via the National Debt Commissioners.⁵⁶ The core endowment can only be invested in very safe funds, as laid out in the Trustee Investment Act 1961. Income generated from the core endowment can then be invested in a far wider range of investments by an independent financial manager. In 1998, it was envisaged that the endowment would provide an annual income of around £12 million. In 2002, NESTA’s annual income was close to £8 million per annum. Lord Puttnam explained that this was due to “the lamentable regulations that require us to invest in the worst-yielding

⁵⁰ Q 18

⁵¹ Ev 23

⁵² Ev 31

⁵³ Q 45

⁵⁴ Q 45

⁵⁵ Q 46

⁵⁶ *Looking Ahead*, NESTA’s strategy 2000-2003, section 4

government stock. That has hurt us particularly in the present economic climate. Frankly, if our original regulations had been more flexible, we could have invested the same money equally safely in something that gave us a significantly better return".⁵⁷ Treasury Bills, where most of the endowment is invested, are linked to interest rates, so returns in 2002 are low.

33. NESTA told us "the original conception (before it ever appeared on the statute book) was of NESTA as a half a billion pound endowment".⁵⁸ Under the National Lottery Act 1998, the Secretary of State for Culture, Media and Sport has the power to increase NESTA's endowment. NESTA has applied to the Department for Culture, Media and Sport for a graduated increase of its endowment to £500 million. It would like to expand its work in its different programmes, for example to create junior fellowships, provide second stage funding for projects in Invention and Innovation and expand the funding currently provided under that scheme. Lord Puttnam told us –

"I am making a very, very powerful case to DCMS: I think they will be making a shocking mistake not to increase our funding. It does not mean that they will not make a mistake, because there are many, many mistakes made in government, but I think they would be making a tremendous mistake, and it is, I am afraid, whether you like it or not, a remarkably small sum of money to be tackling the brief we have been given".⁵⁹

34. The Department for Culture, Media and Sport's memorandum states that it supports "in principle, some elements" of NESTA's bid for an increase in its endowment by £300 million and "is considering carefully the funding options".⁶⁰ We formed the opinion from the evidence given by Jeremy Newton that DCMS might be interested in expanding some of NESTA's schemes, such as the Fellowships and the Invention and Innovation awards, but had not given a blanket go-ahead for the increase in funding. Lord Puttnam estimated that DCMS would meet NESTA "half-way" in the first instance.⁶¹ **We believe it is premature for NESTA to request a significant increase in its endowment. First it must better demonstrate its cost-effectiveness and be clear about how it would use its extra funds. It is a bit rich for an organisation getting £8 million a year to distribute in grants and bursaries, to go asking for more, when it is unable to maintain a clear grasp of how much it is spending and on what.**

⁵⁷ Q 12

⁵⁸ Ev 21

⁵⁹ Q 50

⁶⁰ Ev 30

⁶¹ Q 12

LIST OF RECOMMENDATIONS V. PROFILE AND CONCLUSIONS

35. The Royal Academy of Engineering told us – “of over 130 Fellows of this Academy who responded to our call for comments, 110 professed no knowledge or awareness of NESTA whatsoever. Given that the Academy’s Fellows occupy senior positions in academia and in major engineering companies...it is disappointing that so few are aware of the opportunities”.⁶²

The AHRB commented “in the higher education sector at least, we believe that there is as yet very little understanding of what NESTA’s distinctive role is, and of how, if at all, its activities are intended to complement those of other bodies”.⁶³ We note that most of NESTA’s Fellowships are distributed outside academia. We were interested to know whether obscurity concerned NESTA. Lord Puttnam explained “we were very conscious of the resources we had and the fact that we could very easily be criticised for spending significant sums on promoting ourselves as opposed to making sure the bulk of the money got into the hands of our awardees. There is now a realisation that we have to make more noise”.⁶⁴ We think that NESTA’s lack of profile in the academic community could lead to a failure to attract talented Fellows, awardees and nominators. A publicity campaign conducted jointly with bodies such as the Royal Academy of Engineering would not necessarily be very costly. **We urge NESTA to make efforts to raise its profile by ensuring that it has made itself better known to all relevant organisations and higher education institutions.**

5. There is a risk that targets might lead to the appointment of NESTA Fellows for the sake of it (paragraph 17).

6. We urge NESTA to identify the objectives of the Fellowships, and the basis of its monitoring and assessment of them, and to carry out an appraisal of its Fellowship programme once the first awards are completed (paragraph 18).

Education

7. NESTA’s Education programme appears to have found a niche in a overcrowded market and we are pleased to hear of its successes. We recommend that NESTA take steps to ensure that it is not funding projects which could be better funded by others (paragraph 20).

8. NESTA covers science, technology and the arts. We recommend that NESTA give close attention to the distribution of its awards between those sectors as well as the quantity (paragraph 22).

Nomination of Fellows

9. We understand that NESTA’s nomination system is designed to avoid a flood of applications which could overload its administrative capabilities. We have not heard any evidence of problems with applications to NESTA’s Fellowship programme but we are nevertheless concerned that it lays the organisation open to accusations of networking or favouritism. Those who are not working in areas which have a nominator associated with it, or do not move in the same circles,

⁶² Ev 32

⁶³ Ev 30

⁶⁴ Q 6

VI. CONCLUSION

36. We welcome the work that NESTA has done so far. It has set up three distinct programmes which are now fully in operation. Awardees have filed 30 new patents and registered 25 new companies. The Invention and Innovation programme has produced its first return. Although 'risk-taking' is not easy to measure, the projects undertaken by NESTA are varied and we await the outcome of some with interest, but we remain to be convinced that NESTA is making the most of its less than expected income. We are not impressed by NESTA's lackadaisical attitude to figures. We have some concerns about the lack of open competition in the system for nominating Fellows. We call for NESTA to put more substance than spin into its reports to the public. We hope to see evidence of improvement in these areas over the next year and expect that the quinquennial review will provide assistance in helping NESTA improve its efficiency. NESTA needs to demonstrate greater control over its income as a whole before it can claim to merit a substantial increase in its endowment; we hope that this will be achieved as NESTA moves out of its initial period of development. NESTA may well be able to claim there is a need to expand its programmes once it has raised its profile and seen concrete outcomes from its first projects.

LIST OF RECOMMENDATIONS AND CONCLUSIONS

Provision of Information

1. Annual Reports should not read like the production notes in a theatre programme. Creativity should not be at the expense of clarity. We recommend that NESTA in future provide Annual Reports which contain clear and full information on expenditure, including awards made; the targets; and expenditure plans (paragraph 8).
2. We urge NESTA to make greater use of its website in conveying important information to those seeking to evaluate its work (paragraph 9).

Invention and Innovation

3. We are encouraged to see that NESTA's Invention and Innovation programme has produced its first commercial success. We hope that it will continue to see a return on its investment as projects come to fruition and recommend NESTA state clearly in its annual reports the level of return it achieves (paragraph 13).
4. We encourage NESTA to continue to take chances with its Invention and Innovation projects (paragraph 14).

Fellowships

5. There is a risk that targets might lead to the appointment of NESTA Fellows for the sake of it (paragraph 17).
6. We urge NESTA to identify the objectives of the Fellowships, and the basis of its monitoring and assessment of them, and to carry out an appraisal of its Fellowship programme once the first awards are completed (paragraph 18).

Education

7. NESTA's Education programme appears to have found a niche in an overcrowded market and we are pleased to hear of its successes. We recommend that NESTA take steps to ensure that it is not funding projects which could be better funded by others (paragraph 20).
8. NESTA covers science, technology and the arts. We recommend that NESTA give close attention to the distribution of its awards between those sectors as well as the quantity (paragraph 22).

Nomination of Fellows

9. We understand that NESTA's nomination system is designed to avoid a flood of applications which could overload its administrative capabilities. We have not heard any evidence of problems with applications to NESTA's Fellowship programme but we are nevertheless concerned that it lays the organisation open to accusations of networking or favouritism. Those who are not working in areas which have a nominator appointed within it, or do not move in the same circles, may not be given access to a Fellowship. We recommend a rethink of this system to ensure it does not discriminate against any suitable candidates (paragraph 25).

Science Year

10. We recommend a thorough analysis of Planet Science [Science Year] be carried out as soon as practicable, and an assessment of its impact in the media and in schools made to inform future projects of this nature (paragraph 28).

Expenditure

11. We recommend that NESTA be clearer in its terminology when presenting financial information (paragraph 29).
12. We are disturbed at NESTA's lack of clarity surrounding its programme expenditure. We expect the next Annual Report to provide reliable figures, making it clear what has actually been spent and what is an estimate (paragraph 30).
13. We understand that NESTA may have faced high operating costs during its development. Nevertheless we hope to see administration decreasing as a percentage of NESTA's income in the future. We also urge NESTA to make a realistic estimate of its staffing needs in order to minimise the amount spent on agency staff and permit accurate financial planning (paragraph 31).

Endowment

14. We believe it is premature for NESTA to request a significant increase in its endowment. First it must better demonstrate its cost-effectiveness and be clear about how it would use its extra funds. It is a bit rich for an organisation getting £8 million a year to distribute in grants and bursaries, to go asking for more, when it is unable to maintain a clear grasp of how much it is spending and on what (paragraph 34).

Profile

15. We urge NESTA to make efforts to raise its profile by ensuring that it has made itself better known to all relevant organisations and higher education institutions (paragraph 35).

PROCEEDINGS OF THE COMMITTEE RELATING TO THE REPORT

MONDAY 21 OCTOBER 2002

Members present:

Dr Ian Gibson, in the Chair

Mr David Heath
Mr Mark Hoban
Dr Brian Iddon

Mr Tony McWalter
Geraldine Smith
Bob Spink

The Committee deliberated.

Draft Report (National Endowment for Science, Technology and the Arts: a follow-up), proposed by the Chairman, brought up and read the first time.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 36 read and agreed to.

Resolved, That the Report be the Sixth Report of the Committee to the House.

Ordered, That the Chairman do make the Report to the House.

Ordered, That the provisions of Standing Order No. 134 (Select committees (reports)) be applied to the Report.

Several papers were ordered to be appended to the Minutes of Evidence.

Ordered, That the Appendices to the Minutes of Evidence taken before the Committee be reported to the House.—(*The Chairman*.)

[Adjourned till Wednesday 23 October at Four o'clock.]

LIST OF WITNESSES

Wednesday 8 July 2002

NATIONAL ENDOWMENT FOR SCIENCE, TECHNOLOGY AND THE ARTS

Lord Puttnam of Queensgate, Chair, Mr Jeremy Newton, Chief Executive, and Mr Mike Tomlinson, Education Committee Member and Director of Science Year Ev 1

LIST OF APPENDICES TO THE MINUTES OF EVIDENCE

1. National Endowment for Science, Technology and the Arts Ev 14
2. Lord Puttnam, Chair, National Endowment for Science, Technology
and the Arts Ev 23
3. John Connolly, Policy and Public Affairs Officer, National Endowment
for Science, Technology and the Arts Ev 28
4. Department for Culture, Media and Sport Ev 28
5. Arts and Humanities Research Board Ev 30
6. British Antarctic Survey and Braunarts Ev 32
7. Royal Academy of Engineering Ev 32
8. Royal Society Ev 33
9. Particle Physics and Astronomy Research Council Ev 34

MINUTES OF EVIDENCE

TAKEN BEFORE THE SCIENCE AND TECHNOLOGY COMMITTEE

MONDAY 8 JULY 2002

Members present:

Dr Ian Gibson, in the Chair

Mr Parmjit Dhanda
Mr Tom Harris
Mr Mark Hoban
Dr Brian Iddon

Mr Tony McWalter
Dr Andrew Murrison
Bob Spink
Dr Desmond Turner

Examination of Witnesses

LORD PUTTNAM OF QUEENSGATE, Chair, MR JEREMY NEWTON, Chief Executive, and MR MIKE TOMLINSON, Education Committee member and Director of Science Year, examined.

Chairman

1. Thank you very much for revisiting us. You were here almost three years ago, but you are very welcome because you will remember how supportive this Committee was of what you were up to, and we are looking down the line now to see what has happened. Lord Puttnam, would you like to say a few words to begin?

(Lord Puttnam) Chairman, may I start by introducing the NESTA delegation. Jeremy Newton is our Chief Executive and has been from NESTA since its birth. Also with us this afternoon is Mike Tomlinson, a member of our education committee and for the past three months head of our Science Year project. Mike, as you will know, was the former Chief Inspector of Schools but prior to that he was also a science teacher, which seems entirely appropriate. I have a short prepared text, which I give purely in self-defence, having discovered how incredibly garbled my evidence appears to be when I read it back.

2. You are used to shouting with a megaphone, no doubt!

3. It is an exciting time for NESTA. We have been up and running for three years and gave out our first tranche of awards a little over two years ago. In that time we have invested in over 200 awards: 90 invention and innovation; 60 fellowships and 60 education projects, with a total value of a little more than £20 million. We have a wide and diverse portfolio across science, technology, engineering and the arts, with a growing number of cross-disciplinary projects. We are starting to see a return on our investments: our awardees have filed 30 new patents; they have registered 25 new companies, and several have attracted substantial additional funding. We have even earned our first royalty cheque from an awardee who has developed a new diagnostic tool for fuel injection engines. Many awardees have created new works of artistic and cultural significance, and our education projects have made exciting inroads into new and, we hope, innovative ways of learning. We have also successfully launched NESTA Futurelab, to pioneer the development of a new generation of educational content for the broadband age. However, we are still in the very early stages of

our existence. We are investing for the long term, and it will be a few years before we see the full benefits of our investment policies. As we begin to see the results of our support we are also beginning to learn the lessons from what we are doing—acting as an intelligent investor, trying to build on both our successes and our failures. We have more to do, with limited resources, to evaluate our contribution and to share the lessons we are learning, both with practitioners and policy-makers. Given our limited resources, we will only ever be part of the solution, but we hope to be a significant and a catalytic one. I hope that this issue of being a catalytic influence is something that we can return to. NESTA gives a lot more than just money to awardees; we give business advice, mentoring and media support. We believe that this is the right thing to do, and awardees tell us that it is probably the most valuable aspect of working with us. Packages of tailored support increase chances of success, and if we did not provide it awardees would have to spend time and resources getting exactly the same advice from somewhere else. An important feature of NESTA's work is engaging the public and encouraging them to participate in science, technology and the arts. In this, we believe that we have made real progress. Through Science Year, we have engaged with thousands of school students, and the Committee will, I hope, remember its very special session at the Science Museum this spring to launch Science Year's student curriculum review. Our education programme has grown into a highly constructive intervention, with many projects designed to inspire people, especially young people, to consider careers in science and technology. We believe that this is a key part of our role, improving public awareness and participation in science and technology. If we can crack this, we will also make inroads into a number of the other issues we face—overall skills shortages in the sciences and engineering; making it easier for talented scientists to get the support they need in this country, rather than having to go overseas. There are a number of others, but we believe we have made a good start. However, there is still an enormous amount to do.

4. Thank you for setting the scene. *The Times* stated that your awards were "a superb collection of the zany, the inspired, the speculative and they might just change the world". Is that what you expected?

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LORD PUTTNAM OF QUEENSGATE,
MR JEREMY NEWTON AND MR MIKE TOMLINSON

[Continued]

[Chairman Cont]

(Lord Puttnam) We did not write it, but we were pretty delighted to receive that accolade. It sums up the quality and diversity of the types of things we are supporting.

5. The Royal Academy of Engineering went on and put out a call for comments on NESTA amongst its membership. We have seen them in many guises. They had a large response of 130, and 110 of them had never heard of you. I just wondered what you thought of that. You—bad PR? It is hard to imagine.

(Lord Puttnam) It is hard for me to comment on the Royal Academy of Engineering, but until recently I was a privy council member of the Engineering Council. As you may know, there is some discord within the engineering community. As a result of that the Government has decided, I think correctly, to form a single engineering entity. If I had been able to give one single piece of advice to the Prime Minister five years ago, it would have been, "spend your time being good, as opposed to looking good". I think that we have spent our time very, very well, being good. If to some we have not appeared visible enough, I have no particular regrets, and I would certainly hope that the new engineering body would feel very differently a few years from now. We have gone out of our way to engage with the engineering bodies. They have not proved to be the easiest people to tango with.

6. Do you think it may be more important to engage with the public? In other words, the Lottery has re-branded itself with Billy Connolly, of all people, and David Beckham—and it is all there for you. There are champions for science out there, and even the Royal Academy of Engineering must watch television now and again. Why not dumb it down a little and not just send it to the great and good in the engineering community?

(Lord Puttnam) We had a very good trustees' meeting a month or so ago where we decided for the first time that we had the sort of story to tell that would allow us to start banging the gong. I am not sure we have previously felt confident enough to do that. We also were very conscious of the resources we had and the fact that we could very easily be criticised for spending significant sums on promoting ourselves as opposed to making sure the bulk of the money got into the hands of our awardees. There is now a realisation that we have to make more noise.

Dr Turner

7. Lord Puttnam, I have the distinct impression that your ambitions are somewhat bigger than your budget. Indeed, your budget is currently smaller than you anticipated at the outset. Is this down to unfortunate investment, and what have you had to cut in order to live within that budget?

(Lord Puttnam) We have not thus far had to cut anything because we have seen ourselves as very much operating in a trial period. It is also true to say that the original announcement of NESTA was always conceived as a half billion pound endowment, and I would make the judgment that is the sort of sum you need to make significant inroads.

To put that in perspective, because it sounds like a hell of a lot of money, if we were a half billion pound endowment, in the United States we would come in no.67, which is just behind the Kansas City Community Fund; so these are not, on a global scale, vast sums. In the UK it would bring us in at about no.10 or no.11. That is what is basically needed. We have spent the past three years getting our house in order, organising structures and hiring staff. We are extremely happy with our staff: they are good and well-trained, and they are beginning to get on top of their briefs. That has taken time. Frankly, had we accelerated and tried to do it sooner, I would be much, much more concerned about giving evidence to you in the certain knowledge that we have begun to really get our act together.

8. You have spent £1.3 million on non-programme costs. This is 17.5 per cent of your annual income. Are these administration costs or something more than that? It is on the high side for any organisation to spend on administration, if that is what it is. Can you tell us more?

(Lord Puttnam) 9.9 per cent of that is administration and overhead. The balance is the most important sum, and the sum I referred to in my opening statement. It is the money that we are spending out of our resources to support our awardees—mentoring and in a number of other areas. Were I on your side of the table, knowing what I know now, I would urge us to spend more in that area, that 7+ per cent, than we are, because there is no question in my mind that that is where the real value lies for our awardees. When we just hand over money, we do not get anything like the same bang for our buck as when we hand over money combined with expertise and support.

9. You have 48 staff, a number that is more than you initially planned. Are they involved in the mentoring activities?

(Lord Puttnam) They are. We also utilise people outside. That is why the 7 per cent, which is the swing that we are talking about here, is spent additionally to our overheads, because we do hire outside support and outside help, mostly of a very specialist type.

10. We are told by DCMS that they have some sympathy with elements of your bid to get your endowment fund up to half a billion. Do you know which parts of your bid the DCMS are most interested in?

(Mr Newton) One area is the whole business of extending the age range of the people we are supporting, in both directions. We are looking at extending our fellowship programme downwards in terms of the age range to include junior fellowships, and at different approaches to support young teenagers in their development, whether it is in the arts or sciences or both. We are looking very much at people in their early to mid to late twenties, and people just coming out of colleges, universities, arts colleges or film schools, for example, and their early attempts to set up a new business or partnership or a consultancy through some form of graduate incubation scheme. Those kinds of schemes we have specified in some detail, and DCMS are very keen on those and are encouraging us to look at them. The other area is a degree of amplification of our

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LORD PUTTNAM OF QUEENSGATE,
MR JEREMY NEWTON AND MR MIKE TOMLINSON

[Continued]

[Dr Turner Cont]

programmes, particularly in the invention and innovation programme. We are finding those projects that we have given a relatively small amount of assistance to—perhaps between £40,000 to £70,000—the ones that look as though they are really going to be successful need more, inevitably. They are not yet strong enough to survive the venture capital market. Another priority we have been discussing with DCMS is the idea of second-stage funding of projects with real promise. Again, they are very sympathetic to that idea.

(*Lord Puttnam*) There are two important points worth making. During the three years we have been involved in making grants, the venture capital market itself has changed quite significantly, to the extent that it is almost entirely withdrawn from what used to be termed “seed core” or “early stage” funding. Their argument is not unreasonable; it is that the sheer cost of appraisal has skyrocketed, and therefore to make an appraisal for a tiny business is barely worth their while unless they are prepared to invest at least a quarter of a million or maybe more in it. The niche market that we went into has been abandoned to an extent by the traditional venture capital market.

11. You are practically the only people in it.

(*Lord Puttnam*) We are literally the only people in it.

12. I will not make any comments about the greed of the venture capital industry! How much do you think DCMS will give you? You have a quinquennial review coming down the tracks. Do you expect that to recommend any increase in funding? If you did not have a significant increase in your funding, do you think that you would be able to continue to operate successfully?

(*Lord Puttnam*) To answer the second part of the question first, we could operate successfully for a period of time. The thing that has hit us hardest is, I am afraid, the lamentable regulations that require us to invest in the worst-yielding government stock. That has hurt us particularly in the present economic climate. Frankly, if our original regulations had been more flexible, we could have invested the same money equally safely in something that gave us a significantly better return. I am not a seer, and I wish I could judge what the DCMS are likely to do. I would hope that in the shorter term they would meet us half-way, then wait for the quinquennial review; and, if they were satisfied with that, top the endowment up to its originally intended sum.

13. Plus inflation?

(*Lord Puttnam*) We would like to think so.

Mr Hoban

14. In the two years since you were formed, you have only awarded £5 million for 81 projects and £4.43 million for 53 fellowships. Why have you not created more awards and given more fellowships?

(*Lord Puttnam*) We made a judgment quite early on as to the balance. We are not rigid about it, but we made a judgment as to the balance of the sums available each year. We give roughly 30 per cent of the sums available to fellowships, and we are pretty well spent up on that. One of the disappointments,

which is worth mentioning, is the degree to which, having set a ceiling, most of the applicants are moved towards the ceiling—the £60,000-£80,000 mark. Part and parcel of our appeal to the DCMS is the opportunity to look, on a regional basis, at what can be achieved by a well targeted £5,000 or £6,000 or £8,000. We think there is another market out there that we are not able to touch because it is really quite cost-intensive to go after it. I think we are spent up on fellowships, in a way that I certainly find satisfying. The Fellowship Committee, under Dame Bridget Ogilvy, feel that they have done a good job and do not feel that there are people that they have turned down who they ought to have been supporting.

15. Does that mean you have underspent on the awards?

(*Lord Puttnam*) No, I am suggesting we have spent roughly 30 per cent of our total resources on fellowship, 40 per cent on invention and innovation and a further 30 per cent on education.

16. On top of the fellowships, you spent £5 million on 81 projects.

(*Lord Puttnam*) On top of?

17. Yes, that is my understanding.

(*Mr Newton*) That splits across both the invention and innovation and the education programme, but I think those figures are probably 12 months out of date now in terms of the actual commitment of money and the new projects that have been coming on-stream. The most up-to-date figures in total are well over 200 awards, approaching a value of about £20 million. There was a steady acceleration of our awards over the first 18 months, as the programmes got going and as we began to contract the new awards and so on; so at the moment we are committing about 100 per cent of the funds that we can and we are not retaining any kind of buffer. We retained a buffer in the first couple of years—we had two very good years in terms of investment return, where our income exceeded our expectations, and that did create a buffer. However, we are heavily digging into that now.

Chairman

18. Where are the administration costs coming from, if that is 100 per cent?

(*Mr Newton*) After allowing for the 10 per cent of core costs. I meant of the money allocated to awards.

(*Lord Puttnam*) The £20 million I referred to in my opening statement is the 100 per cent of the money that we have spent on awards, of which roughly £8 million has been spent on invention and innovation and £6 million each on education and fellowships. That is where we are at present. There are 60 fellowships in total.

19. On page 11 of your submission under “fellowship, invention and innovation, education” a commitment of 4.43, 4.49 and so on, coming to 20. That is up to April 2002, so there is a difference in the figures you have given us.

(*Lord Puttnam*) The figures I have got are at the end of June 2002, so my figures are three months ahead of your figures.

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[Continued]

[Chairman Cont]

20. I would like to see those.

(Lord Puttnam) They will be in our annual report.

Dr Brian Iddon

21. I represent a north-west constituency. Can you say something about the regional distribution of all your funds: are they concentrated in the City of London, or do they get out to all the extremities of the country?

(Lord Puttnam) There are two answers. One is a healthy and one is a worrying. The healthy one is that we have done well in many of the regions. We have also done spectacularly badly in one or two regions, and this is one of the reasons why we have approached the Department about using talent scouts, where, frankly, there is a serious problem. We have already trialed it. We have someone in the north-west, Ruth Turner, who has been working for us for a year now, literally seeking out on the ground the areas of low-cost intervention that we think could best help. She was originally the founder of the *Big Issue* in the north. She had done a wonderful job for us. One of the things we have asked the Department for is the ability to replicate what she is doing in other parts of the country.

(Mr Newton) We were disappointed by the East Midlands and early on we were disappointed about the north-west, but Ruth has made a major difference there—and there is no doubt about it. We are very pleased by the return in Scotland, but Wales and Northern Ireland have been less active in putting together good proposals. We are working particularly with Northern Ireland at the moment on developing some ideas for education projects.

(Lord Puttnam) This is a two-way issue. We have tried very hard—and I have written twice to every single RDA chair to point out what we are trying to do and the kind of support and help we need to be able to engage with them. Some have been magnificent; some have not even bothered to reply.

Chairman

22. Do you have a list of those people? Have you a blacklist that you are prepared to give us, because MPs are in a position to chase RDA chairs?

(Lord Puttnam) Chairman, I would much rather give you the "magnificent" list, but if you press me I will give you both.

23. We would like to see it. I think that we would find it quite valuable, in terms of being helpful.

(Lord Puttnam) It is an area in which we have been very proactive. As I say, in some cases the rewards have been significant and in some cases—were I living in those regions, I would think it lamentable.

Mr Hoban

24. My understanding is that your business plan for 2001/2002 committed £8 million to invention and innovation awards and fellowships. Did you spend that money?

(Mr Newton) Yes, we slightly over committed in that year and it ended up being £8.2 million, the total awards committed in that year.

25. It does give the impression that you have been quite slow in getting going because in your evidence you spent £9.5 million to the end of May 2002, but £8.2 million of that was in one financial year, so in the first year you only spent about £1 million. Is that right?

(Lord Puttnam) We spent a very small sum of money on what we termed at the time "experimental projects". We were really testing our systems. They were projects that were available to us, but it was a systems test. I make no apology for that. I have had very bad experiences of start-up organisations, and in fact I had one quite recently, which attempt to hit the ground running when they were just not ready to do so. I take all responsibility and blame for this. I was determined it would not happen in the case of NESTA.

26. You went live in November 1999 and between then and the middle of 2001 you spent £1 million. That just seems very, very slow, and overly cautious, rather than rash.

(Lord Puttnam) I do not think those figures are right. I do not have to hand the year-by-year figures. I would be happy to submit those.

27. This is based on the evidence you have given, both oral and written.

(Lord Puttnam) Let me be very clear that I take all responsibility for this. We live in an extremely difficult environment. It is the easiest thing in the world to discredit a young organisation in its early months. We only needed one story in the media that we were mis-spending the money, misusing the money, or spending it on something frivolous; and, frankly, it would have done immense damage from which NESTA might never have recovered. It seems to me that I made absolutely the right judgment, and I stand by it.

Bob Spink

28. Notwithstanding the fact that this Committee in its second report, session 1998-1999, stated that NESTA should be prepared to take chances and risks. "It must dare to fail on specific projects." Are you now telling us that you dare not fail on specific projects?

(Lord Puttnam) No, I am saying that in the past two years we have absolutely spent up on the sums of money available to us and we have taken some significant chances; and I am quite sure that we will fall on our faces on one or two occasions; but I now think that we have enough of a track record now to be able to deal with that. I was less confident that was the case two years ago.

(Mr Newton) The £1 million figure was in 1999-2000. In 2000 and 2001 there was something like £5 million committed to awards and then £8 million in 2001-2002—£14 million so far in terms of the three programmes.

Mr Hoban

29. We have some figures on this and you also need to reconcile back to the table on page 11 of your submission, which states that awards to April 2002 are 9.5 million, which is not quite correct.

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[Continued]

[Mr Hoban Cont]

(Mr Newton) That is 9.5 across fellowships and invention and innovation, and then 4.5 on education. That is about 14 million across the three programmes.

30. My understanding is that your business plan 2002-2002—you spent 8 million on invention and innovation awards and fellowships together.

(Mr Newton) And education. The figure definitely was spread across all three.

31. Have you published your business plan for 2002-2003?

(Mr Newton) It exists and can certainly be made available.

(Lord Puttnam) It is awaiting approval at the next trustees' meeting.

32. Do you monitor the proportion of your awards that goes to academics and non-academics?

(Lord Puttnam) In those terms, no.

33. How do you know you are looking beyond academia and universities and their confines, because they seem to get quite a lot of grants as it is? There are those people who do not have access to this funding stream that you need to be helping.

(Lord Puttnam) I would not know how to clearly define an academic from a non-academic. What is absolutely certain is that we stretch out and make every effort to give awards to people who would not normally get them under any of the existing award granting bodies, particularly the big ones. We try to stretch out in areas that they do not cover. There are a number of these bodies. I am on the A.H.R.B award-granting body, so I am very conscious of the decisions they make and the criteria they set. We certainly work well outside of those criteria.

(Mr Newton) It is certainly a small minority of fellowships and invention and innovation awards that find their way to institutional-based academics, university-based academics. Most are outside the university sector.

Dr Murrison

34. The Royal Academy of Engineering was clearly concerned that they know nothing about you. The Royal Academy of Engineering has strong links not just with universities but with industry of all sizes. It seems to me sensible that you should ask an organisation like the RAE where it thinks innovations might spring from, and that might broaden your base.

(Lord Puttnam) I think we have engaged with all the learned bodies and all the bodies that we believe we can engage with, to make absolutely sure our message gets across. There is no point in going into it because they all have different views, but the engineering world is particularly complicated. As I said earlier, I think that the Government has done exactly the right thing in knocking their heads and pulling them together. We found them in our early years extremely difficult to deal with.

Chairman

35. Do you separate out what you spend on the arts, technology and sciences?

(Lord Puttnam) Budgetarily?

36. Yes.

(Lord Puttnam) We try very hard not to; because we believe that could lead us into making a series of wrong decisions, so we try very, very hard not to make decisions on that basis, certainly quarter-to-quarter.

Mr Hoban

37. Presumably, you record the grants you have given in those categories.

(Lord Puttnam) Yes, we monitor very closely, but not in a category sense.

Chairman

38. We will be asking you some specific questions about the financing of these years.

(Lord Puttnam) Mr Spink's question is a troubling one and it is one I am not wholly comfortable with, either our answer or where we are. Are we risking enough? It is a question we ask ourselves all the time, and we are trying to keep a balance between—dare I use the word—prudence on the one hand and risk on the other. There is a point at which you can be ridiculed for not being sufficiently prudent with public money; but equally there is a point, which is what I think Mr Spink is referring to, where you can be criticised for not taking enough chances. I am not entirely convinced we are taking enough chances, but I would like to think we are creating an environment in which we are increasingly prepared to.

Bob Spink

39. Your business is to court risk; you have been set up to do that. There are other bodies that can play safe. I am sure that Parliament and other people would protect you from unfair criticism if you fairly chanced your arm and took risks. That is what you are about, is it not? We are rather surprised to hear your initial cautious stance. Which of the engineering bodies do you find "very difficult to deal with"?

(Lord Puttnam) We found the engineering bodies themselves, as a group of bodies—and bear in mind there are quite a number of them—quite difficult to deal with because there is a lack of clarity between them as to who is responsible for what. We are hoping—and Jeremy is trying very hard indeed—to create a very good relationship with the new engineering body. I am very lucky; Sir Peter Williams, the new Chair, is an old colleague and a personal friend, so we start from a base that is workable. As we all know, candidly, there is a tremendous sense of "not invented here" that permeates all of these areas of our society. We found it—

40. As an engineer, I can guarantee that that is the case.

(Lord Puttnam) Thank you.

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[Continued]

[Bob Spink Cont]

Dr Murrison: Can I focus on some outcomes and also perhaps some opportunity costs. Richard Morrison in *The Times* on June 29, 2001, wrote a rather disobliging article, I think you would probably say. Remember that this is now a year ago. In his final paragraph he said: "For the moment, then, I have banned cynicism about NESTA from this column, if not from the world at large. But the organisation must start to deliver success stories soon. As the dismal recent history of the British film industry proves, it is all too easy to invest a sackful of Lottery money and good intentions in 'promising talents', sit back and wait for glory—and end up with a hundred duds, each one sinking with a more embarrassing gurgle than the one before."

Chairman

41. It sounds like something you might have said, David!

(Lord Puttnam) I think I did actually, Chairman.

Dr Murrison

42. Lord Puttnam, you mentioned patents and in terms of intermediate outcomes patents and companies formed are good news, but I wonder how many of those patents have been granted and how many of them have been exploited.

(Mr Newton) Certainly all of the thirty are granted. There are a number still outstanding, obviously, that will take another six months or a year before they are finalised. We said in our submission that we have begun to receive income, a royalty stream, from one of our projects, and there are at least five or six others where substantial orders have been made for the product and we stand to gain income either through equity participation or through royalty participation, in the two different kinds of contract we use, during the course of the next year. Most of the successful invention and innovation projects, interestingly, are in the transport area. They are either very small-scale improvements to engine design, like the one that is already delivering income, or they are very, very large-scale ambitious projects like the amphibious vehicle, which is one of our first projects. That has now received its first million pound order for four large-scale vehicles from British Waterways, who are keen to buy more; and Mitsubishi are planning to order many more. There is a substantial amount of income that we are likely to derive from that project. Cardiff have just committed over £25 million to the Ultra Urban Light Transport Scheme that Martin Lowson developed—again, one of our early projects. Our equity participation in that will mean that we will start to derive income, and probably quite a substantial capital gain from that over the next few years. I could go on, but there are a number of projects that at the outset did look extremely risky and highly unlikely to succeed, which are beginning to come off. There are four or five more I could list that have already failed. Obviously, we are not going to make all of them winners, but I am certain that we will be deriving a significant income from those projects.

43. I am interested in your board membership. It is a very eclectic board and I was wondering how many people at an average board of trustees meeting actually attended.

(Mr Newton) Attendance has been 70 per cent on average throughout the last three years. Similarly, trustee attendance at committee meetings and decision-making meetings has been at 71 per cent. So at any one meeting, roughly two-thirds to three-quarters of the members are there.

44. Can you take me through the decision-making process? Is a bright idea tossed into the arena, for example, and chewed over by the trustee board members? How is it done?

(Mr Newton) We have three committees, one for each programme—education, invention and innovation, and fellowship. They are made up of three or four trustees and three or four non-trustee members, experts from the particular field or the particular area that they are looking at. Those committees meet in the inventions and innovations case every month, and in the other two cases every other month. They receive quite a substantial amount of background information about all of the substantial proposals we have had in the previous couple of months, and they are discussed and decided on in detail at that stage. They have a reasonable degree of delegated authority to take smaller scale financial decisions. In larger scale cases they are remitted to the next full trustee meeting for final ratification. Most of the detailed discussions and assessments and decision-making is done at committee level.

45. You said that you would like to see the amount of money that you have in your endowment increased substantially. Clearly, the DCMS will be looking at results for the money you have had already. I have to say that in a parliamentary question on this subject, Mr Caborn was less than forthcoming because his rather stark reply in response to my question, which was to ask him what plans existed for the future funding of the National Endowment for Science, Technology and the Arts, was: "Plans for funding NESTA will be considered alongside other options for the future use of Lottery funds, and although government responses these days do tend to be fairly brief, that really is extremely brief." I am just wondering how confident you feel about extending the amount of money in your endowment. You will need to reflect, perhaps, on your outcomes and what you have produced for the money, and possibly on things like your projected increase in staff. I understand that at the moment that is 35 staff, but you want to go up to 48. Is that correct?

(Mr Newton) No, the gap between the two figures is largely made up of stand-alone teams. We have set up the Science Year team to run the Science Year project, and they are based at a separate location; and now we are setting up a Futurelab team in Bristol to run that project. There are some NESTA employees who are not part of the core administrative teams that are running the programmes, but who are managing off-line arms' length projects.

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[Continued]

[Dr Murrison Cont]

(*Lord Puttnam*) But resources are coming from elsewhere. Mike's budget for Science Year is funded directly from the Department for Education and Skills.

(*Mr Tomlinson*) The small team running Science Year—its funding comes primarily from the contract that NESTA successfully bid for from the DfES, which was £3.35 million. But we have also secured additional funding from external sources, from different companies and organisations, to support the work as well.

46. Are you saying that you will be keeping to the 35?

(*Lord Puttnam*) No, I do not think there is a hope in Hell that we will keep to the 35. Can I give you a better example? When the General Teaching Council was originally mooted, the minister at the time suggested that the General Teaching Council could be run by 30 people (I used this expression the other day to a Select Committee) from a relatively small office in Clerkenwell. The General Teaching Council today has two offices, one in Birmingham and one in London; it has 80 people and is responsible for one of the largest single databases in the whole of the UK. How anyone in Parliament imagines you could do that with 30 people is beyond me. It is, I am afraid, a parliamentary fantasy; that successful organisations delivering in very complex areas can accomplish anything on that sort of daft off-the-cuff notions of a head count.

47. I come back to my original comment about outcomes. I am looking for some green shoots that suggest to me that this huge sum of money—and despite your earlier comments I do regard £200 million of what is at the end of the day the public's money, as huge—what exactly we are getting for that. Frankly, the Chancellor, I am sure, could well do with such a sum elsewhere. What we are looking for at the moment are intermediate outcomes, some sign that some of this will actually give the public some payback. I am afraid that it is not coming across. You wrote to me a little while ago and said that one company has been set up and you are expecting a royalty cheque of £1,000 from that company.

(*Mr Newton*) We have had that cheque, but we are likely to get similar and growing cheques every quarter from now on for the next 15 years.

48. What was the size of that first cheque?

(*Mr Newton*) It was less than £1,000. I have not got the sum to hand.

49. I note your comments about fellowships and applaud them, but what I am really looking for, I suppose, is some Clockwork Oranges, or at least signs that we are likely to be getting some Clockwork Oranges.

(*Mr Tomlinson*) I think the signs are positive. First of all, you have to accept that from the point at which an idea is developed to its actual production, the selling of that product and the making of it, is not a short period of time. It can be lengthy and it can be quick, but there is a period of time. I think it takes about two years between an idea going through to actual production, which is not an unreasonable period of time in the engineering world in particular.

Bob Spink

50. Since you look at me, that is part of our problem, that our time to market has been too long compared to other nations, particularly in the Far East and America, who have shortened the time to market and beaten us competitively because of that; so I am sorry to hear you accept as part of our culture—

(*Mr Tomlinson*) No, I am not accepting it; I am saying—

(*Lord Puttnam*) Prototyping is our motto as an organisation.

(*Mr Tomlinson*) I guess that is part of why the other side of our help has been not just financial; it has been to try and get through this. As you have heard, it can take a long time just to get the patent registered, which is not the case in some other countries either. So there is a whole series of steps that can absorb time, unfortunately. As you quite rightly say, it can on occasions knock us back in terms of our competitors.

(*Lord Puttnam*) To avoid any misunderstanding, let us slice up this discussion accurately. Forty per cent of our invested sums go into invention and innovation. I do not know of your own past record in the private sector, but I spent 35 years of my life working in the private sector. It takes three and a half years to develop, produce and market one movie. I think we have done remarkably well, and I would very much like to map our development over the last three and a half years as a stable, solid organisation against any other. We have delivered successfully Science Year. We are awaiting a ministerial decision at the moment for Science Year to be rolled over to a second year because it has been so successful. We have discovered a clear market failure in the area of educational content. We have created and funded Futurelab from external sources. I think we have done magnificently actually. That is 40 per cent for invention and innovation. Thirty per cent is on what we think is a breakthrough programme of educational investment. It has not been done by anybody else at all. We have delivered an organisation that is capable of doing things that no other organisation in government or associated with government can do. I am making a very, very powerful case to DCMS: I think they will be making a shocking mistake not to increase our funding. It does not mean that they will not make a mistake, because there are many, many mistakes made in government, but I think they would be making a tremendous mistake, and it is, I am afraid, whether you like it or not, a remarkably small sum of money to be tackling the brief we have been given.

51. I should say that I was urging you to produce clockwork radios, not Clockwork Oranges. Can I bring you back to some failures, because I accept you are going to have failures, but we cannot just dismiss them. The chewing gum buster particularly caught my eye a little while ago, as did the comment by Dr Alison Staples, who was involved with this project. She said: "NESTA came along and they seemed to help lost causes." That was not much of an endorsement for her products, and we heard subsequently from your partner in this that this initiative which, on the face of it, had seemed smashing, had failed. I was wondering how many

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[Bob Spink Cont]

initiatives that you had funded had now been accepted as, to use Richard Morrison's words, "duds".

(*Mr Newton*) Four of the invention and innovation projects so far, of which Alison Staples's is one, have been written off. In two of those cases, they are fascinating failures, if you like, and we have learned more from them than we have learned from most of our successes. We have been able to turn them to very useful advantage in terms of informing us. A hospital communication project, which was a fantastic project, failed, through no failing of the product, but it simply had the enormity of the health procurement industry stacked against it. What we have learnt from that project is very potent, and we will use it.

Tony McWalter

52. You put a target of 30 fellowships a year. Did you make it last year?

(*Lord Puttnam*) I think we made 28 last year.

53. Is that because there are not people around of sufficiently high quality? How many did you turn down—2,000 or 20? What is the scale of failures.

(*Lord Puttnam*) There are a number of stages at which they are rejected. There are those that do not even get past the start point; there are those that are assessed at phase 1 and those who are assessed at phase 2. They go through three processes. I would have to write to you and give you the number of failures for each of those phases.

54. That would be very helpful indeed. How do you pick your talent scouts, the people who decide whether these projects are really good? One can think of a lot of ways of picking talent scouts who would let you down.

(*Lord Puttnam*) The most important thing is to start with the human-being. In the case of Ruth Turner, she had run a successful organisation. At the time, she was starting a new trust that was specifically designed to look for exactly the type of people we were looking for—entrepreneurs in the Manchester/Liverpool area. What she was doing on a day-to-day basis fitted us very well. What she proved to have was incredible energy and incredible contacts, largely as a result of the magazine, and we were able to piggy-back that. What we are now intending to do is to find similar people. We have someone in Wales who we are trialing. We have an agreement in Northern Ireland with the Regional Executive to work with them, and that choice we will make jointly with them. What I am waiting for is the serious green light from the DCMS that agrees that this regional approach is the right one. We are very committed to it.

55. They do not need to be polymaths.

(*Lord Puttnam*) No—full of energy and self-starters.

56. What are the other mechanisms for identifying these fellowships? We are not terribly clear how people find out about them and how you process the things through. You talked about the three different stages.

(*Lord Puttnam*) During our start-up period we looked around the world at the variety of fellowship organisations and arrangements that had been made, and we opted for one modelled on the MacArthur

Foundation in the United States, which seemed to us to be the most admired and seemed to echo most what we both wanted to do and, more importantly, could be managed with the resources available to us. It would have been very easy in years one and two to be flooded by an avalanche of inquiries, and then you are just dealing with the consequent situation in which many people are terribly disappointed. We went through the nomination system as used by the MacArthur Foundation. They came over and were incredibly helpful to us. My own conviction is that we made the right decision. Our desire now is to stretch out and experiment with the application base in very specific areas. Indeed, these junior fellowships are very exciting. We have had nothing but enthusiasm for the notion of these graduate incubation grants, helping people as they leave university or college to spend a year or two attempting to be self-employed and attempting to get their own company off the ground, rather than necessarily going immediately into employment and losing what could be productive and interesting entrepreneurial years.

57. Are there not a lot of people out there who would massively benefit from these fellowships who are not in the know and do not know a suitable nominating person?

(*Lord Puttnam*) It does not quite work that way, Chairman.

(*Mr Newton*) We are just piloting our first open access application process for fellowships, the Dreamtime Awards, which we are promoting very widely through intermedia agencies and so on. We are constantly opening up the whole process of fellowship proposals, nominations and appointments through different routes. We have developed a network of 25 talent scouts in the East Midlands alone, just to target a particular geographical area at the grass roots in arts, science and technology. We are working with the regional arts councils and so on and asking them to nominate individuals from their fields and disciplines who do not fit into the existing round holes in their field but who want to spread across the boundaries with other disciplines. We have had a particular good response from the research councils and have received some very strong nominations from the Science Research Council. They are individuals who do not quite fit the existing modes of science research funding either because they are not within a university or because they work across two or three disciplines that are covered by different research councils. There are a number of those individuals around and they are beginning to provide us with information about what kinds of research they do.

58. That is potentially very exciting, but if in the end we get the old track nomination process, there are a lot of people around that you are going to miss out on. Are your talent scouts paid?

(*Mr Newton*) No, we give them a very small honorarium, a few tens of pounds, for doing the initial research and submission of information, but we do not pay them a daily rate.

59. It is a strange way to do it, is it not?

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[Tony McWalter Cont]

(Lord Puttnam) You would be amazed how much enthusiasm is out there, to be part of the process. It is one of the most fulfilling things that we have discovered: outside of London there is an incredible energy and belief in the ability to get things moving.

Chairman

60. How many talent scouts do you have?

(Lord Puttnam) We have Ruth Turner operating in the north-west as the closest thing to a full-time scout. Under the new scheme we have 25, but this is a targeted one-off scheme, working on a much more open application basis. We are putting our toe in the water.

(Mr Newton) We have appointed something like 150 nominators, so that number is going up all the time. The stand-alone nominators are only allowed to give us two names, so we are constantly refreshing the pool of nominators as well as adding to it by these other mechanisms for attracting proposals.

Tony McWalter

61. Presumably, the nominators of the three good people would just find someone else to do the nomination, would they?

(Mr Newton) Usually, they will discuss the three names with us and we will agree between us who the best two are. In most cases, we have found that it has not been difficult to identify the two that have something quite special about them. That has been the process so far.

(Lord Puttnam) The two great attractions to us of the MacArthur Foundation were that you could control the flow and you were not going to get overwhelmed—coming back to the issue about head counts—had we had an open access application process, we would have had to automatically adjust our head count to dealing with it in a satisfactory way. First of all, you can control the flow, but much more importantly, you can control the quality of the nominator. The MacArthur people made it clear to us over and over again that the quality of what you ended up with had everything to do with the people who are nominating. As Jeremy said, we constantly review it and constantly recycle it.

Mr Dhanda

62. Can you tell me about the quality of your monitoring process and how many of those nominees are women, how many are black, how many are from working class backgrounds, how many went to red-brick universities and all that kind of stuff?

(Mr Newton) We can tell you almost all of that data. Again, we are happy to respond in writing.

63. Can you tell me roughly, off the top of your head?

(Mr Newton) I think men and women are roughly equal, something like 55:45. There is a reasonably good geographical spread, although in the fellowship programme as opposed to the other two programmes there is quite a heavy number in London and the south-east. We tend to find, particularly in the arts disciplines, that there is a very heavy concentration of

the strong nominees in London and the south. We have a bit of a geographical imbalance in the fellowship programme, where we have not in the other two programmes. I cannot tell you offhand the proportion from minority communities and so on, but there is quite a substantial representation of all the communities you could imagine across the fellowship programme.

(Lord Puttnam) There is a dismal figure, which is worth mentioning, for invention and innovation, where less than 20 per cent are women.

(Mr Tomlinson) In fellowships there are 30 male and 26 female.

Tony McWalter

64. The process sounds to be a bit on the hoof compared to the peer review process that obtains in the research councils. You are dealing with some quite significant, high-quality submissions; are you not going to have to get more professional about it?

(Mr Newton) There is a whole independent assessment process that all of the proposals go through. We do not simply rely on the nominators. The nominations come to our fellowship committee, the committee that Dame Bridget has been chairing for the last three years. They identify those which we want to invite to make a proposal for fellowship, so there is a degree of whittling down at that stage. Equally, once the proposals come in, they are independently refereed. We appoint an expert assessor from the field who is not a nominator and is completely independent—or sometimes it is two people—with a real depth of expertise in the field that the person is working in, who writes a full report. Again, that comes back to the fellowship committee, which assesses the officer's views, the views of the independent assessor and the views of the original nominator. There is quite a degree of peer review in terms of the assessment of the potential of the individual. That is where I put the stress. It is not about identifying the quality of their track record as much as trying to give some measure of their potential. That is a much less exact science, I am afraid. We do take something of a leap of faith in the fellows that we appoint, but in many cases they are repaying us in spades.

(Lord Puttnam) I have enormous faith in our processes. I am very lucky in that my Deputy Chair and the Chair of the fellowship committee, since its inception, has been Dame Bridget. Without doubt she is the most experienced grant-giver in Britain. She was Director for many years of the Wellcome Trust. There are many views of Dame Bridget, but I have never heard it suggested that she is not rigorous.

Chairman

65. We have come across Dame Bridget in our relationship with the Royal Society.

(Lord Puttnam) Then I am sure you concur with my view!

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[Continued]

Tony McWalter

66. For all of that in the end, it just feels to me still as though this is moving gently towards an open process, and I do understand why you could not do that initially. It still sounds as if the resulting process is still not going to seem very open. My own background is in mathematics and philosophy, and you often find that notoriously the people who make these sorts of decisions know precious little about these things and are unable to make any sense of some of the suggestions made in that regard. People outside of your normal system will still get pretty short shrift.

(*Lord Puttnam*) The only thing that I can honestly suggest—and you would be more than welcome—would be for you to come down to NESTA and take a good, long detailed look at what we are doing, and talk to the director of the fellowship programme and talk to Dame Bridget. If you feel, having done that, that there is anything that is either insufficiently rigorous or that indicates we are not casting our net wide enough, we are not set in stone and would love to have a second view.

Dr Murrison

67. Richard Morrison, in his article, again disobligingly said: "NESTA seemed intent on bank-rolling Islington dinner-party darlings, politically-correct sociologists..." which was unkind.

(*Lord Puttnam*) It is also untrue, absolutely untrue, for the record.

68. The Committee needs to be clear that the very wide-ranging powers that you have to disperse this money are being used in a correct way. What checks and balances exist to ensure that particularly when you are looking at grants on the arts side, the money is given without regard to any political persuasion or bias that a potential grantee has? I can give you an example of where that could happen—not where it did happen but where it could. I refer to Tom Paulin's publication *The Invasion Handbook* funded by NESTA. What checks and balances do you put in place to ensure that any grant is impartial?

(*Lord Puttnam*) The assessment that is made is certainly not based on any political positions. It is quite interesting. Can I go back to the very first question about publicity, Chairman? We have made 60 fellowship awards now. Only one of them ever received any negative publicity whatsoever, and that was Tom Paulin; he was the only person that anyone ever heard of. I would suggest that tells you one of two things: either we should only give fellowships to very famous people so that no engineering council or anyone else in Britain could suggest that they had not heard of NESTA, or possibly they should not give it to anyone well known—as it happened, Tom's application was specifically to enable him to stop doing what he was doing in broadcasting to concentrate for a period of his life on writing an epic poem. The application was extremely well supported by, among others, his own university, and we went with it. We have no regrets at all. The fact that subsequently, and nothing to do with the book or the poem, he got embroiled in a mediafest over some other remarks he had made regarding the Arab/Israeli conflict, was not part and parcel of our

process. Nothing of that was in his book and nothing of that was in his application or in our decision to fund him. I believe very sincerely that we are politically agnostic and neutral. I have certainly tried to keep it that way, and if anyone has some evidence otherwise, I would love to hear it and be given the chance to defend it. We live in a difficult media climate. It is the cheapest shot in the world to suggest that myself, or any other Labour or, for that matter, Conservative peer chairing an organisation is in some way or other politically motivated. It is never a charge I have had to deal with, but if I do I hope I have the chance to rebut the evidence on which it is made. I am not suggesting you are saying that, but I am suggesting that possibly you are over influenced by the theatricality of Richard Morrison, Brian Sewell or anyone else. They are entertainers and not trying for one moment to supply accurate information to a committee like yours.

69. Lord Puttnam, I am not suggesting anything of the sort, but you will understand the concerns that this Committee rightly has that public money is dispersed in an equitable and non-political fashion. Thank you for giving that reassurance.

Mr Dhanda

70. The £3 million to £4 million spent on education programmes. What kind of programmes are they?

(*Mr Tomlinson*) I have only recently joined the committee, so am relatively new to it, but a particular thrust has been to find new, often cross-discipline ways of approaching teaching and learning in schools. ICT is an obvious point where we have looked at ways of developing access to information, teaching resources and the like. Equally, there is an acknowledgement that very often some of the things that we want to get across, for example literacy, numeracy and scientific understanding, can often be achieved through use of the arts. That can be a very rich area for motivating young people who want to move on in their language, their number work, and their science and technology work and the like. We have wanted to support cross-curricular projects that have been helping the development of young people's skills in other areas, sometimes indirectly as well as directly.

71. The Royal Academy of Engineering would rather that you did not get involved in educational projects/programmes at all. What do you say to that?

(*Mr Tomlinson*) I do not accept that we should not. There may be a reason why they would like us not to of course.

(*Lord Puttnam*) Can I answer that question fully? I would say that of all the relationships we have created in the last two years, the most dramatically successful and productive has been that with the Qualifications Agency over the re-design or support for the design technology curriculum. If the Royal Academy of Engineering has any pride whatsoever in what it has achieved in design technology over the last year or so, I would be delighted to hear it. We walked into a situation that was on its knees. We worked extremely hard to pull it around.

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[Continued]

Bob Spink

72. Would your help of the Qualifications Council in this extend to the new vocational qualifications at about AS level for the new engineering course?

(Lord Puttnam) I hope they eventually might. We have a series of programmes up and running that I am particularly proud of, helping young people to engage with design technology. In some ways it is rather unusual. We have actively pursued a robot competition for young people. We discovered, unsurprisingly, that young people are enormously influenced by what they see on television. We took Robot Wars, a pretty violent and relatively unpleasant programme, and turned it into Technogames, which is an Olympic competition among schools, designing and creating robots. It has had incredible success and taken off like a rocket. It is certainly something that frankly any of the engineering organisations and councils over the last few years could have done, and I'd say should have done. We have a terrific programme that we have worked on with Lego, the QCA and others, again engaging young people, particularly girls, in design technology by creating lessons where they are able to evaluate different power sources—wave power against wind power, against battery power. It has proved to be a tremendous success and already the results indicate that young girls are leaping two years ahead in terms of interest and activity in design technology. I spend half my life being lectured by all sorts of people over all sorts of things, but I do think that the engineering organisations have very little to accrue to their credit in the last few years in terms of their engagement with, enthusiasm for driving design technology as an interesting, exciting and innovative subject for young people. There were many things that I liked a lot about my years on the Engineering Council. But as I looked around the Council I think I remember seeing one non-white face and I never ever once saw a woman. I think that the engineering world has a lot to answer for and there is a lot of room for improvement.

(Mr Newton) We took the view that we should start at key stages 3 and 4 so almost all of our projects in design and technology have been in the 11-16 age range. They are not yet involved at AS level.

73. So you would not consider more funding through the BA rather than the smaller projects that you are involved in?

(Mr Tomlinson) Science Year has worked very closely with BA and the Association of Science Education, and we are looking, when Science Year comes to an end, at having a legacy that would be passed on to those bodies that would continue to be permanent parts of the landscape, of which the BA and ASE are two. I am meeting soon with both of them to discuss the next stage of our collaboration with Science Year. We do work very closely with them already. They do not have large sums of money to support the sorts of projects and ideas that we have; therefore there is a synergy between the bodies which is very helpful and productive.

(Lord Puttnam) Chairman, could I make one point, because you could help us here? We are at the moment actively engaged in discussing a joint venture with the Engineering and Technology Board, a new body, which we would very much like to

pursue as partners. I would like to think that eventually we will get a response, but it has been slow coming.

Dr Murrison

74. Lord Puttnam, you said in July 2001, "we will count what we have done as worthwhile if within five years we see three outstanding business successes from the entrepreneurs NESTA is backing". Does that remain your benchmark?

(Lord Puttnam) One of my benchmarks. I have only two more years to serve and I will have regarded my tenure, as the initial chairman of NESTA as being successful if within those years we have three genuine successes in terms of the outcomes of our inventions and innovations programme. Two to five of our fellows are clearly emerging as leaders in their fields, and we have begun the process of transforming education technology in the UK. These would be the three things I would seek as a legacy.

75. One year on from making those remarks, are you more or less confident that that will be fulfilled or exceeded?

(Lord Puttnam) I am exactly as confident as I was a year ago.

Mr Harris

76. Do you see Science Year as a success?

(Mr Tomlinson) Very much so, and so does the Government and so do our partners, so much so that in principle we may be asked to extend the Science Year for a further period. There are areas where we should in the next phase do a little more, particularly with parents, to attract them to the excitement of science so that can influence their children, but also support parents who are often taxed because of their lack of science education, in terms of their children doing science homework and the like. We have plans ahead with the National Body of Parent/Teacher Association to work closely with them on that. The other area where we certainly do want to focus, along with many other organisations as well, is the challenge of getting more young people to do the physical sciences at A level and proceed through to degrees, because we are in a somewhat serious position with regard to the supply of scientists and engineers.

77. Apart from NESTA itself, which obviously co-ordinates Science Year, has anyone else made an assessment of the success of Science Year? Can you point to other bodies? How do they evaluate that success?

(Mr Tomlinson) We do not have it yet but we are in the process of trying to get it from our partners, for example the ASE and BA. We also have a number of industrial so-called "friends" that are particular supporters of us, and we shall be asking them very soon for their evaluation of their involvement, given that the year will be coming to an end in September. We will be looking at that. We already feel that on a number of quantitative measures, for example the numbers of schools, teachers and pupils involved in different activities, that there have been signs of considerable success. It has attracted the attention of

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[Continued]

[Mr Harris Cont]

these people towards the activities of Science Year. There is a long way to go. I would not pretend that we have by any means cracked the problem.

78. You made reference to extending Science Year. I do not want to appear flippant, but it is not very scientific having a science year for only 365 days. Is there a danger that you might devalue Science Year by extending it for however long?

(*Mr Tomlinson*) No, and that is a decision yet to be made. There is a problem of having called it Science Year, to then extend it. It is illogical apart from anything else. It raises an issue for the Government in this regard, that in future it may not be pertinent to call it a year, because there is a continuing need for support in some areas, not necessarily through the same organisation. Once you have a successful initiative, such as this, which has generated a great deal of comment from schools and teachers and others, who say, "please do not let this end"—then inevitably you want it to go on. I am worried at the moment how one is going to say to schools in September that we are not finished and we are starting again with a second year. We could call it Science Year Plus. We are faced with a challenge.

(*Lord Puttnam*) We will be delivering to the Department an evaluation of the year this autumn, but we are also preparing a document that the Department has asked for, which is a critique of the whole concept of "the year of", and we do not think that it is the answer; we think that themed efforts where the time period relates to the depth or breadth of the problem is a much better way to go. We are rather critical of the concept of "the year of".

Chairman

79. Substance, not spin.

(*Lord Puttnam*) Not spin.

(*Mr Tomlinson*) One or two other countries are very interested in the idea. Canada has agreed to launch one, and we said, "Do not label it 'a year'."

Mr Harris

80. Nigel Payne left in April and went off to the BBC. Has that adversely affected Science Year and its activities?

(*Lord Puttnam*) I do not think so. Nigel got an offer that we could not possibly stand in his way from accepting and he was released from his contract early. Jeremy and Mike between them stepped in and so far we do not feel there has been any lack of energy—in fact quite the opposite: Mike has picked up at exactly the moment at which it may have benefited from a fresh vision.

81. Have you taken on extra staff for Science Year?

(*Mr Tomlinson*) We have a team that is located in Tufton Street, and many of those are on relatively short-term contracts and are funded through the monies that were given to us by the DfES to run Science Year. When Science Year ends, many of those people, although not all of them, will depart.

82. Have you had to use some of your normal budget to employ these extra people, or is it all paid from extra funds?

(*Mr Newton*) It is all paid for from the DfES. We have allocated some of our programme money towards projects that relate to Science Year, so some of NESTA's education programme money has been allocated to the Science Year project; but the total operating bill has been picked up by DfES.

(*Mr Tomlinson*) We have secured almost an equal amount to the DfES grant as support from other bodies. For example, we have managed to put in to nearly all primary schools a digital microscope which has been supplied free of charge to schools, and that was nearly £1.8 million from the company concerned; so we have managed to find other sources of funding.

83. Getting back to the idea of this 24-month year, if it is extended would you retain management of it? Is that your proposal?

(*Lord Puttnam*) We will sign a new contract with the Department and see it through.

Bob Spink

84. Your sponsoring department is Culture, Media and Sport. Notwithstanding the source of funds, do you not think that your activities indicate that you probably need to build strong relationships with perhaps the Department of Trade and Industry or the Department for Education?

(*Lord Puttnam*) We have built a very strong relationship with the Department for Education over the last 18 months. We have a good relationship with the DTI, which could be advanced upon. The DTI has been tremendously supportive in the creation of Futurelab.

85. What input does DCMS have to your activities?

(*Mr Newton*) To be frank with you, very little. They do not have the power to issue policy directions in the way they do with the other Lottery distributors, so there is no formal mechanism by which they would seek to influence our policy. In fact the informal mechanisms are much more to do with a sharing of information about their policy priorities and how there are occasions where they interrelate to ours. Those where they do not are not a problem.

86. Do you share with them important financial decisions before you go forward?

(*Mr Newton*) No. We have been given the power to take our own decisions on pretty well everything. The only decisions they take are the appointment of new trustees. Historically we have reported a great deal of detail in order to help them with their information-gathering about objective-setting and so on, but none of our decisions are subject to DCMS approval.

87. Your objectives and your mission statement are very clear. You have a business plan, and you are going to send us a copy of the latest one. They are not involved in your day-to-day activities or even sharing your major financial decisions, so why do you have to hold regular liaison meetings with them?

(*Mr Newton*) We see it as our responsibility to keep them informed about what we do, partly because of the historical statutory thing, but partly because there are important areas in which our interests overlap, particularly in relation to the creative industries and some of the more specific arts issues.

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[Continued]

[Bob Spink Cont]

There are those areas where it is important that we seek to influence their policy, if you like, rather than *vice versa*.

88. How much of your work is geared towards entertaining people—the creative industries—and how much is work and funding geared towards wealth creation eventually, or academia and wealth creation?

(Lord Puttnam) I would say it is 80:20 in terms of the wealth creation sector.

89. It is 80 towards wealth and 20 towards entertainment.

(Lord Puttnam) Yes, but I'd challenge the distinction. Creative industries are probably one of the best performing sectors that we have at the moment.

90. It is 80:20, and yet your major responsibility and reporting line and communication is through DCMS and not through DTI or the Department of Education.

(Lord Puttnam) Simply because DCMS inherited the responsibility for monitoring Lottery resources.

91. Are you happy with the structure as it is, with DCMS, or do you think it can be developed in some way?

(Lord Puttnam) The most honest answer I can give is that if we get our additional resources, I would be delighted to develop it; if we do not, I would like to have a good long think about it.

Chairman: We have come to the end of our questioning. Thank you very much for coming. You know this Committee maintains a great interest in NESTA not just on the science and technology side but the arts and its structures and relationships. That has been clear in the questioning today. We will continue to monitor you and see how it goes. We may produce a report from this but I will see how the Committee feel about that. I cannot thank you enough for being frank in answering our questions. Your enthusiasm certainly comes through and we wish you well. If we can help in enterprises, that is the spirit in which we have engaged with you today. Thank you very much.

APPENDICES TO THE MINUTES OF EVIDENCE

APPENDIX 1

Memorandum submitted by the National Endowment for Science, Technology and the Arts (NESTA)

AWARDEE FEEDBACK

"The NESTA award has given my project a life. Without this support I wouldn't be talking about my invention today, it simply wouldn't exist."

Dr Josaphat Kabukoba, who has created an innovative loop and clip device that could help make keyhole surgery more widely available, helping patients and saving the NHS money.

"I've got a lot from NESTA, I mean more than a lot. My levels of confidence have been transformed, my vision of what's possible has been transformed, but not changed, because actually the more I do with NESTA, the more committed to the vision that I proposed to them I am."

"My dedication to my vision is strengthening through NESTA, but my understanding of how I get there is becoming more creative, more relaxed, more confident, more flexible. And that's brilliant, it's really good. And I just wouldn't be there without NESTA—no question of that."

Paula Watson, a NESTA Fellowship awardee, working to enhance the opportunity for Black film-makers to create and distribute their films.

"I cannot stress how helpful the NESTA award was in taking forward the Centre of the Cell. It has helped us to achieve so much, particularly in supporting the design production with Central St Martin's College of Art and Alsop architects, and building a framework for the project that covers our relationship with the community and ongoing funding."

Dr Fran Balkwill, The Centre of the Cell project. This is set to become the world's first interactive science centre inside a working medical school.

"This is our first relationship with a funder that is a real collaboration. It is an amazing growth process for us. I feel like I'm 21 again and the world is my oyster, instead of being a beleaguered, forelock-tugging charity."

Susan Benn of Performing Arts Labs—supported by NESTA to develop ideas and talent across a range of creative industries.

"Medical Futures is honoured to be working with NESTA, whose support provides a great incentive for medical professionals wishing to commercialise their ideas. NESTA's commitment to supporting innovation at an early stage is essential in developing these ideas, that will hopefully bring valuable returns to the NHS increase productivity and boost morale. There is a tremendous amount of innovation within the medical industry—who better to think of new ways to improve healthcare than those individuals who deliver it."

Andy Goldberg FRCS, Founder of Medical Futures and a Specialist Registrar in Orthopaedics. NESTA works in partnership with Medical Futures to support innovation in medical science.

NESTA's HISTORY

NESTA was trailed in the 1997 Labour Party Manifesto. In the same year, the Government White Paper "The People's Lottery" developed the idea further, setting out a case for ensuring that the UK had a real resource for identifying and developing talent, innovation and creativity.

The White Paper recognised the importance to the economy of enhancing the nation's capacity to develop and commercialise ideas. This was, and continues to be, a pressing issue for the UK economy. The following indicators illustrate the potential gains which could be made:

- The UK has an excellent track record in the creativity of its individuals—the Japanese Government has estimated that 57% of the major technological innovations which have been of most benefit to the Japanese economy originated in the UK;¹
- Despite this, these creative ideas are not sufficiently developed into products and services: while we rank second in the world, and above Japan, in terms of producing papers in science, Japan had filed more than three times more patents in Europe than had the UK;²

¹ Japanese Ministry of International Trade and Industry (MITI) Report, 1985.

² *Science* Vol 275, February 1997 and *Annual Report of the European Patent Office*, 1996.

- There was a lack of support for inventive individuals—in the UK at any one time there are 50,000 private inventors, who submit around 20,000 initial patent applications each year. Of these 4,000 are granted full patents. Only 60-80 of these patented innovations make it to market each year.³

"The People's Lottery" therefore proposed that NESTA would help to address this loss of British talent and ideas overseas by providing investment and protecting intellectual property for the benefit of the UK. NESTA was established under the 1998 National Lottery Act to support and promote talent, innovation and creativity in the fields of science, technology and the arts. We were charged with achieving these objectives by:

- helping talented individuals (or groups of individuals) in the fields of science, technology and the arts to achieve their potential;
- helping persons to turn inventions or ideas in the fields of science, technology and the arts into products or services, which can be effectively exploited and the rights to which can be adequately protected; and
- contributing to public knowledge and appreciation of science, technology and the arts.⁴

NESTA is funded from the income from a £200 million endowment from the National Lottery, invested primarily in treasury bonds. At the time of our inception, we expected income to be around £12 million per annum. However, due to sustained low interest rates, income is currently running at around £8 million per annum.

NESTA's WORK

NESTA's work in Science and Technology

Since our inception, we have made a substantial contribution to the development of scientific expertise in the UK. We have begun to ensure that creative individuals in the sciences have the opportunity to bring their ideas to fruition. We have also made substantial progress in communicating science to the public. The work of our programmes is set out in more detail later in this document. However, the following section sets out some of our achievements in science since we made our first awards in 2000.

The NESTA Education Programme has been operating as a "think-lab" for the last two years and has successfully trialed new ways of stimulating creativity and learning. We have invested over five and half million pounds in 75 new education initiatives, many of which have become national models of excellence. Many of these awards use new technologies as a way of increasing participation in science, technology and the arts. For example, we are supporting the development of "Online Jemma", a web-based online drama, which will use new technology including email and text messaging to encourage teenage girls to participate in the sciences. We have also supported, in association with Lego, the development of resources for schools which allow pupils to design, build and programme robots for the home and classroom. These complement the Design and Technology Curriculum and allow young people of all abilities to engage with this technology in a user-friendly way.

NESTA has won the DfES contract to run its £3.35 million Science Year Project—following on from the National Year of Reading, and Maths Year 2000. This project aims to encourage participation in science, particularly among young people. Science Year has been such a success that discussions are ongoing with DfES to continue the project substantially beyond its initial end date.

Our Fellowship programme allows scientists working across disciplines time away from the work place to further develop their skills, which will be of benefit to them in their work for many years to come. For example Caroline Wilkinson, one of our Fellows who is a medical artist specialising in facial reconstruction, is in the process of developing a computer-based forensic tool which combines scientific and sculptural techniques which will increase accuracy and speed in facial reconstruction following accidents.

In addition, through our Invention and Innovation programme, we give practitioners in science, technology and engineering the chance to develop their ideas into products and services, which will be of benefit both to them and to society as a whole. For example, a NESTA award has enabled awardee Charlie Paton to develop a device which will allow sea-water to be used in the irrigation of plants. Another award will support research into the development of a new generation of robotic limbs.

One of the distinctive aspects of NESTA's work in science and technology is our ability to work across traditional disciplines and unleash synergies between different branches of the sciences, and between science and the arts. This gives us a distinctive role from other funders, who find it difficult to support projects which do not fall completely within their remit. A good example of this is with Mike Hobson, an astrophysicist specialising in work on cosmic microwave background. It was Michael's innovative techniques that gave us the strongest images yet obtained of the after glow of the Big Bang, which have helped expand our knowledge and understanding of the origins and structure of the universe. His Fellowship has enabled him to develop his work on image reconstruction algorithms (new methods of mathematical analysis providing a way of turning hundreds of complicated observations into one clear image) to bring benefits in other areas of science. For

³ Source: Institute of Patentees and Inventors.

⁴ National Lottery Act (1998).

example, they could help in the early detection of breast cancers, or be used in geographical mapping from low-orbit satellites.

Our risk-taking ethos also allows us to back innovations in the sciences and in technology which would find it hard to attract funding elsewhere. While there is no guarantee that these projects will all be successful, being able to fund them allows really creative innovators in the sciences to develop their ideas in ways which were not previously possible.

NESTA'S PROGRAMMES

From the outset, NESTA aimed to be an ambitious organisation. Our remit gives us broad scope to unleash individuals' creative potential, help realise innovative new ideas and bring about a shift in the understanding of creativity and innovation in science, technology and the arts.

We developed our statutory remit into three funding programmes—Fellowship, Invention and Innovation and Education, devised and developed after a period of public consultation from December 1998 to April 1999. Our first funded projects were announced in July 1999 and the programmes have rolled out progressively since then. We wanted to be a creative catalyst forging partnerships and collaborations to bring about new and unexpected approaches and an 'intelligent investor' that shared the lessons of our support through evaluation, dissemination and policy promotion.

Our three programmes work as follows:

Invention and Innovation:

Invention and Innovation helps to turn ground-breaking ideas into innovative products, services or techniques with commercial or social potential. It is an open-access programme, with individuals able to submit applications electronically via our website. We fund 50-100 projects per year, with financial packages ranging from £5,000-£150,000 (though most of the projects we fund are for amounts between £30,000 to £85,000). Support is tailored to the needs of the project and could include anything from research and development, to securing intellectual property rights and business development. We fund at a very early stage of project development, often much earlier than conventional venture capital or business angel support. In return for funding, we take a stake in any future commercial success of the invention. If the project makes money, then the return is invested into other awards. To date, we have received more than 2000 applications to this programme.

Fellowship:

Fellowship provides support for exceptionally talented and creative individuals in the fields of science, technology and the arts. We select 25-50 Fellows each year. Awards range from £25,000 to £75,000, spread over 3-5 years. Fellows are nominated by a network of 'talent scouts', experts in their field who are likely to come across new and developing talent. This process builds in refereed recommendations at the outset and enables NESTA to seek a range and spread of awards across disciplines and different communities. Each nominator can only make 2 nominations in their time working with us.

Support for Fellows is tailored to fit individual needs, but can include anything from attending courses and specialist advice to income substitution. We are continuing to develop our Fellowship programme, by introducing a number of initiatives to broaden the scope for identifying exceptional talent and making a range of interventions in the lives of creative people. Some recent initiatives include piloting a network of "talent scouts" in the East Midlands, inviting nominations from organisations and piloting a new "Dreamtime" award—a short-term award (from three months to a year) to allow individuals at the very top of their field to take some time out for personal development.

Education:

Our Education programme contributes to public understanding of science, technology and the arts through collaborative projects. We seek out initiatives which improve the public's understanding of creativity and we pilot new methods of creative learning and support ways of fostering individual talent. Each year, we have a list of priority areas for which we invite proposals. These include gifted and talented pupils, stimulating interest in Design and Technology, and the re-engagement in learning of low-performing groups. We aim to support 10-15 projects per year and funding levels are decided on a case-by-case basis.

Other partnerships and projects:

In addition to our core work, we've established a number of other activities and partnerships to take forward our statutory remit. We successfully won a Department for Education and Skills' contract to deliver the "Science Year" project which is aimed at increasing public knowledge of, and participation in, science in

the UK, particularly among school-age children. This project has been sufficiently successful that negotiations are currently ongoing to extend it significantly beyond its initial one-year lifespan.

We have also established NESTA Futurelab, a project to research and develop new ways of delivering education through the use of new technologies. NESTA Futurelab, established in 2001, has already attracted £3 million of additional funding from the DfES and the DTI.

A wide range of partnerships and competitions have also enabled us to extend our support to an even wider range of people. These include:

- the Tomorrow's World Awards for inventions/innovations, in association with the BBC;
- the Medical Futures Awards, for entrepreneurs and inventors in medicine;
- in association with the Millennium Commission, the Wellcome Trust and the British Association, we have developed a website which disseminates information and encourages visits to science centres and other scientific visitor attractions, such as zoos;
- with the Science Museum and the Royal College of Art, we have supported the "Product of the Future" exhibition which showcases the very best of young design talent;
- a digital animation project, MESH, which we have supported in association with Channel 4 and Blackwatch TV;
- with the Association for Science Education, we have developed a CD-Rom, which will be distributed free of charge to primary schools;
- we are currently preparing to create a digital film archive in Northern Ireland, in association with Apple Computers.
- the Design and Art Directors Students Awards, to stimulate new ideas in product design;
- the Lighthouse's Creative Entrepreneurs' Clubs in Scotland and Northern Ireland, providing business support and networking opportunities for people working in the creative industries.

WHAT MAKES US DISTINCTIVE

From our inception, NESTA has been determined to be distinctive from other funders. We have achieved this in a number of ways.

Taking risks

The bulk of support for science, technology and arts projects and programmes in the UK focuses on organisations, companies, businesses or academic institutions. NESTA is almost alone in being able to concentrate on the creative development of extremely talented and innovative individuals, wherever they are, enabling them to overcome economic and social barriers to success.

We can take managed risks with our awards in a way which other funders are not willing, or able, to. Through our Invention and Innovation programme, we provide support for projects at a very early stage of development, often when no other funding is available. By its very nature, this sort of support carries risk—while a number of these projects may be successful, others may not.

By way of comparison, venture capitalists (who operate at a much later stage of development) estimate that, out of any ten projects, two will be successful, another two or three will be the "living dead" (remaining in existence but with little hope of a substantial return), and the remainder will fail.

NESTA feels that it is necessary and desirable to take these risks—provided they are properly managed—in order to make the difference that we were set up to make. Not to do so would be to fail in our statutory duty. However, this means that not all projects will be successful. In the present risk-averse political and media climate, there is a danger that we could attract negative publicity if supported projects fail. However, when NESTA was investigated by this Committee in 1999, the members endorsed our risk-taking ethos. We hope that the Committee will re-affirm this endorsement now.

Acting as an investor

NESTA is not a traditional grant-giver. We match the risk we are taking in supporting specific projects with a stake in the potential returns from projects. This demonstrates our long-term commitment to the projects which we support.

We act as an "intelligent investor", an organisation which makes strategic interventions and learns from its experiences. Our experiences inform our actions—both the support of future projects and the way in which we seek to inform and influence public policy and popular debate.

Working across disciplines

NESTA is interested in projects which cut across traditional disciplines, believing they release original and imaginative ideas in science, technology and the arts. It is significant, for example, that NESTA does not have a "Science" or an "Arts" programme. Rather, all three programmes cut across all of science, technology and the arts.

We fund projects which take thinking forward in areas as diverse as health, education, transport and the environment. This allows us to support individuals whose talents cannot easily be pigeonholed, but who can make a real contribution to creativity in the UK. It is this ability which enables NESTA to make a different contribution to that made by the Research Councils. We are able to support scientists who take knowledge from one field and apply it in different areas. Among our awardees, a good example is Michael Hobson, an astrophysicist whose award is described above.

Added value

NESTA gives much more support than simply money. We provide a raft of non-financial support, tailored to the needs of the individual awardee. This can include mentors, project champions, promotional and public relations support, advice on marketing, business planning and media relations, as well as introductions to potential business partners, investors or other funders.

It is these "extras" which awardees often say are the most useful part of their relationship with NESTA. For example, Norman Lindsay, an awardee who has received funding to develop a range of technologically advanced golf putters, has said:

"Obviously there's the money. But just as importantly, it gives me access to experts and puts me in contact with people who have so much knowledge and influence in the field. These kinds of introductions are priceless"

By tailoring our support in this way, we are able to do much more than traditional funders in bringing the creative potential of our awardees to the fore. We are able to support the long-term needs of the individual awardee, rather than prescribed inputs and outputs.

OUR ACHIEVEMENTS SO FAR

NESTA's key achievement has perhaps been the successful establishment of the organisation and delivery of what we were set up to do (operating in the spaces between other bodies interested in creativity and innovation, taking risks and adopting new approaches in order to make a real difference in the sectors covered by our remit).

Our programmes "went live" in November 1999 and we announced our first awards in May 2000. To date we've made around 200 awards, with a total commitment of £20.5 million. We've supported an extraordinary range of people and ideas covering everything from particle physics to poets, new media to new circus. Our awards have been described as "a superb collection of the zany, the inspired, the speculative and the might-just-change-the-world".

Breakdown of awards⁵

<i>Programme</i>	<i>Awards</i>	<i>Commitment (£ m)</i>
Fellowships	53	4.43
Invention and Innovation	81	5
Education	50	4.49
NESTA Corporate	7	0.17
NESTA Enterprises Ltd (including Science Year and NESTA Futurelab	2	6.35
Totals	193	20.45

Although it's still early days, we're delighted to be seeing some positive outcomes from our funding—economic, artistic, cultural and social. Our awardees have filed 30 new patents, registered 25 new companies and several have attracted substantial additional funding. Many new works of art, design and multi-media have been commissioned, exhibited, performed or written. We've even earned our first royalty cheque, from an awardee who has developed a new diagnostic tool for fuel injection engines.

This shows that high-risk public investment can generate real returns for the future. We believe that longer-term outcomes will demonstrate that our awardees will be of real value to the economy—not just in terms of patents and business start-up, but also in terms of wealth generated and jobs created. It is hard at this

⁵ These totals include all awards approved to 8 April 2002. It includes both hard commitments (contracted) and soft commitments (those approved but awaiting contract finalisation). The totals are comprised of the direct award to the awardee, contingency and non-cash support (cost of project mentors, media support etc).

relatively early stage to put a value on our portfolio, but we can already identify a number of promising ideas with considerable commercial potential. Our Fellows have produced, and are continuing to produce, a body of work which would not have been possible without our support. This includes poet Tom Paulin's, "The Invasion Handbook", which looks at the way we view the events of World War II; Jonathan Hare, who has established a "creative science" lab in Brighton and has produced a number of "Rough Science" programmes for the Open University and BBC; and Andrew Stone, who is producing a work of acoustic art—a "Sound Corridor" with the Royal Institution.

NESTA's Education Programme has been operating as a "think-lab" for the last two years and has successfully tested new ways of stimulating creativity and learning. We have invested over five and half million pounds in 75 new education initiatives, many of which have become national models of excellence.

Projects include "Motivate", video-conferencing in the classroom for talented maths pupils, which has now been rolled out across the UK; workshops to inspire robot building for the successful BBC series Technogames; "Drawing Power", a nationwide campaign for people of all ages to use drawing as a creative tool; "Amazing Children"—a conference to spark the debate on the best way to nurture talented and gifted pupils; and "Children's Palaces", developing a "Chinese approach that fosters and encourages creativity in very young people". A full list of our awards is enclosed.

As well as successes among our awardees, NESTA has also gained praise for the way it conducts its business. We won a Vision 100 award, sponsored by BT, Management Today, Sunday Business, and the Cranfield School of Management. These awards celebrate visionary companies, and we won an award for pioneering electronic business methods.

We believe that NESTA is filling a real gap in the public, charitable and private sector support structure. We have worked closely with a range of other bodies whose aims complement ours. Our profile has steadily risen and key networks such as Business Links, the Small Business Service, RDAs and UK Business Incubation are recognising that NESTA is the essential "missing link" in the chain of support and investment for the new, knowledge-based economy.

One of the great benefits of NESTA's status as a public body is the range of external expertise to which it gain access in order to add value to its work. Our Fellowship programme for example has used the expertise of 150 nominators to identify up and coming exceptional talent. NESTA has also made contacts with over 200 independent assessors—experts in their field—for our Invention and Innovation programme. Every awardee from each of these two programmes has the opportunity to work with a mentor or project champion, and education projects have dedicated project supervisors. The result of this wide network of experts is that prospective NESTA awardees are assessed by specialists in the applicants' field, and that our awardees gain the best possible support and guidance.

AREAS FOR IMPROVEMENT

Of course we've found it harder to make progress in some areas than others. It's been a challenge to balance competing demands. Areas of particular tension include:

- balancing the accountability requirements of a public sector body with the desire to respond quickly to opportunities in a commercial environment;
- needing to produce results, within the context of developing new approaches to supporting creativity and innovation;
- tempering the ambition of a small organisation with a huge remit to suit its capacity;
- developing a reputation in our areas of focus before we have been able to evaluate project outcomes; and
- the need to ensure that we add value to our awardees by giving more than just money, while at the same time balancing our expenditure on overheads.

Our experience of making and managing awards has also revealed that there are gaps in our support.

NESTA has a challenging UK-wide remit, yet we know from our monitoring of awards that there are gaps in our national and regional coverage. We believe that we are under a duty to find excellent people, ideas and projects from across all communities, regions and disciplines and that our methods of working should not create barriers to identifying and supporting potential. We therefore find it extremely disappointing that there are "hot" and "cold" spots for NESTA awards. For instance, we have received very low levels of applications from the East Midlands region and have not made any Fellowships awards in the region. We are attempting to address this in the Fellowship programme by appointing a number of "talent scouts" in the East Midlands, who will pro-actively seek out talent in the region. However, longer-term, we believe that national and regional representation is by far the most effective solution for locally promoting what we offer and finding the right local routes to talent. Our intention is to improve the spread of awards rather than generating additional demand for already over-subscribed programmes. We need to find an approach which allows us to target communities more effectively and to solicit the right kinds of approaches. In Wales, and in two English regions (North West, and Yorkshire and the Humber), we have been piloting different models of regional representation. In the next year we will be developing a UK-wide model.

In addition, we believe that NESTA could do more to champion potential excellence in young people and remove obstacles to their success. This would allow talented and innovative young people to be able to bring their ideas to fruition more easily than they can at present. Presently, most support mechanisms rely too much on a track-record of achievement, rather than potential, which inevitably disadvantages young people, while favouring the "usual suspects". We want to begin to redress this imbalance by focusing some resources on people at the beginning of their creative careers. Details of how we might be able to do this are discussed later in this memorandum.

Finally, we are aware that NESTA has not in these early years established a role as an "expert witness" on creativity and innovation. We are committed to learning the lessons from our support to feed back into both internal and external policy debate. However, to date, many of our people and projects have been at a very early stage of their development and we have not had the evidence upon which to draw. NESTA is now planning in-depth research and evaluation with our awardees which will enable us to draw out the lessons from their experiences to build the basis for wider dissemination and policy work.

HOPES FOR THE FUTURE

Our understanding about our role has naturally evolved since the early days of our existence, and the external environment has clearly changed too. We are now undertaking a process of widespread consultation on our future strategic priorities to inform the next three years of our development.

Our initial conclusions are that from 2003 to 2006 we should aim neither merely to consolidate our achievements to date, nor to use the freedoms of the Lottery Act by radically changing the way in which we try to fulfil its objects. We are still a relatively new organisation. We're therefore minded to continue with our programmes, since they have not yet been running long enough for us to evaluate the extent of their contribution to our mandate. On the other hand, we would like to tighten the focus of our programmes and other activities in order to maximise the value of our limited resources and make a significant impact in the sectors of our remit.

As part of this we are keen to demonstrate more effectively what we have learnt from our activities to date, and to use that as a basis for improving our own support across science, technology and the arts, and for influencing the policy and practice of others operating in these sectors.

At the same time we have identified several areas within our current focus in which we would like to make more of an impact than we have done to date. When and how we move forward in these areas very much depends on available resources. Some of the ideas we are considering include:

- Broadening and deepening our existing programmes. As well as continuing to distribute awards as at present, we will need to develop our core programmes further. As the first round of Invention and Innovation awards comes to an end, we will need to decide whether there is a case for funding a number of existing projects over a longer period. This would help to ensure their continued existence and to reduce the risk of good ideas "withering on the vine".
- We would like to do more to improve the effectiveness of our Fellowship programme by exploring more ways to identify exceptional talent and interventions in creative people's lives.
- In Education there is more we can do to build on the legacy of Science Year, improve imaginative interactive exhibitions in museums, galleries and Science Centres and promote entrepreneurship in education (complementing the results of the recent Davies review).
- Graduate Incubator Grants Scheme (GIGS). At present, many educators have told us that few degree courses in the sciences, art and design provide even very basic classes in business skills and, where they do, these are optional rather than required. Upon leaving college, many graduates do not know how or where to access support to take entrepreneurial ideas forwards. NESTA's core concept for GIGS is to give the best entrepreneurial talent, aged 21-30, the opportunity, knowledge and skills to succeed with their commercial ambitions. This can be done by combining mentoring opportunities with the financial support necessary for sound business preparation. The best ideas from this initial pool would then go on to receive a second round of assistance in the form of intensive business skills funding, combined with further funding. Independent research suggests that this proposal is a particularly attractive proposition to this cohort.⁶ There is also evidence that currently no-one is fulfilling this role.⁷ This is one model of how GIGS could be operated. In practice we would test and evaluate what works.
- Fellowships for young people. We propose a specific development of the existing fellowship programme to be targeted at young people. Financial awards of up to £25,000 over three years would be available to cover tuition, travel, equipment etc, with a particular emphasis on mentoring.

⁶ "...networking and mentoring is key. People who are a few years down the line can give valuable advice to those who are about to embark on the same path. It provides confidence and sound business knowledge". Caroline Underwood, Development Director, London Institute.

⁷ "The average cost of starting up is £13k—this is more than Shell Livewire or the Prince's trust is prepared to give, but too small to be considered by venture capitalists. If you're looking for a gap in the market, I reckon it's there" the Director of Shell Livewire offering his view on the GIGS idea.

The scheme would be aimed primarily at young people with exceptional promise, but whose development is likely to be hindered by various obstacles (poverty, lack of opportunity, lack of family support, geographical remoteness etc).

BARRIERS TO PROGRESS

As in so many cases, NESTA's main barrier to further development and improvement is lack of resources. The original conception (before it ever appeared on the statute book) was of NESTA as a half a billion pound endowment supporting talented and creative people and securing and exploiting intellectual property. As the idea for the organisation has evolved, NESTA's Trustees have held onto this original concept in the hope of maximising the value and impact of its contribution to UK culture and the economy.

However, at present, NESTA is a relatively small funder in UK terms, and tiny in world terms. With its present £200 million endowment, NESTA would lie 31st in a table of UK charitable funds, between the Rank Foundation (£209 million) and the Rhodes Trust (£197 million). To put this in context, the largest UK charitable fund is the Wellcome Trust with £11.26 billion.⁸ As such, NESTA finds it relatively difficult to lever economies of scale which would deliver more "bangs for the buck". Allied to this is the fact that, as public money, NESTA's endowments must primarily be invested in low risk (and low return) Treasury Bills, linked to interest rates. With interest rates currently running at a 40 year low, this means that NESTA's income, which was forecast to be £12-13 million p.a., is currently around £8 million.

As a result, NESTA is currently able to do much less than we would like - or envisaged that we would be able to do at our inception. At present, without a fairly dramatic increase in UK interest rates, it is unlikely that we will be able to deliver any of our desired additional work, as set out above. It is for this reason that we are currently seeking an increase to our endowment, in line with the powers given to the Secretary of State in the 1998 National Lottery legislation. Initially, it was envisaged that NESTA's endowment would be £500 million. We are seeking a graduated increase to this level in order to allow us better to fulfil our statutory remit, and have submitted a document setting out the case for extra funding to the Department. Ministers are currently considering this document. We hope to achieve the Committee's support in achieving this aim.

June 2002

Annex A

CASE STUDIES OF FUNDED PROJECTS

INVENTION AND INNOVATION

Urban transport for the 21st century

Professor Martin Lowson and his colleagues at Advanced Transport Systems Ltd (ATS) have designed a whole new type of urban transport—the ULTra (Urban Light Transport) system, which is cheaper, quicker, more energy efficient and more passenger-friendly than buses, taxis or trains.

NESTA's award of £75,000 made a vital contribution to the project—by helping ATS to develop a marketing and business approach that attracted the attention of Cardiff County Council. The system is now being piloted in Cardiff and should be operational by 2005.

New developments in keyhole surgery

Keyhole surgery is accepted as being much better for patients than open surgery because recovery time is quicker. But it isn't offered as widely as it might due to its cost and complexity—something that frustrated surgeon Dr Josaphat Kabukoba so much that he decided to do something about it. The result is a new kind of loop and clip device that could make keyhole surgery a lot simpler and cheaper.

NESTA has given Dr Kabukoba funding of £65,500 to protect his intellectual property rights (prohibitive to an individual) and to help him develop his product to a stage where it can be tested and licensed.

Turning amphibious vehicle design on its head

Inventor David Royle has been involved with boats and cars all his life and like most amphibious vehicle designers strove towards the "holy grail"—a vehicle that could travel at high speeds on the land and the sea. His inspiration was to turn traditional amphibious vehicle design on its head. He stopped trying to adapt land vehicles for travel on water and instead adapted a boat to be driven on land.

NESTA's award of £124,172 has enabled David to test, complete and demonstrate his latest design and take an earlier design into the pre-production phase. These prototypes have now attracted the interest of a major company, and have considerable commercial potential.

⁸ Source: charities Direct Website: www.caritasdata.co.uk.

Molecular music

Biochemist Dr Linda Long is creating music derived from the human body's protein molecules to increase understanding of science and for therapeutic purposes. She uses a technique called x-ray crystallography which produces strings of numbers to represent the three dimensional structures of protein molecules. By passing these through a computer programme Linda is able to convert them into a sequence of musical notes. The advantage is that proteins with very similar complex mathematical formulas actually sound quite different to each other.

NESTA's award of £49,990 is helping Dr Long to develop the use of music as an innovative teaching method and to produce and market two commercial cds for therapeutic use (protein music sounds very nice). It has also funded an interactive exhibit at Bristol which encouraged people to take a fresh look at how their bodies work.

EDUCATION

Robotic Olympians

NESTA has worked with the BBC and others to develop Technogames, an exciting new robot-building challenge designed to stimulate interest in design and technology. The project involved young people, their schools and families and was recently televised on the BBC. NESTA's award funded prizes, workshops and taster sessions around the country aimed at stimulating uptake and interest in robot building. An ongoing event, the entries for this year's Technogames challenge are well up on last year, with over 360 robots in the making.

Online Jemma

How can you attract more girls to study science at school and continue into a science career? Interactive digital pioneers XPT Ltd have created a funky cyber heroine—online Jemma—to do just that. Jemma challenges the "white lab coat" image of science and encourages teenage girls to think more positively about taking science further.

XPT are creating an online drama which shows Jemma embarking on a life of scientific study and combining this with the usual social aspects of being a student—gossiping about potential boyfriends and the various "goings-on" on campus. She shares her experiences via an interactive website and email. XPT are enlisting the help of scientific advisers and writers to develop compelling plotlines which tackle science related issues of topical interest. NESTA's education award is enabling them to develop and test the site.

Inspire

Nobel prize winning scientist Sir Harry Kroto and Poet Laureate Andrew Motion are NESTA's first two "innovators on the move"—part of a new education programme called Inspire. This outreach programme uses inspiring individuals to share their experiences with audiences across the UK to promote fresh thinking in the education sector.

Science on show

NESTA is supporting the "Product of the Future" exhibition at the Science Museum in London to showcase the UK's best young design talent and to help increase public understanding of, and engagement with, science.

Eye-catching exhibitions include a tooth implant which can pick up transmissions from radios or mobile phones and transmit them directly to your ear via your jawbone.

FELLOWSHIP

Engaging the public in science

Physicist and exhibition curator Rachel Souhami is challenging traditional methods of engaging the public in a dialogue about science. She believes that visitors to museums have become accustomed to playing with lots of interactive press buttons and learning facts—but this doesn't necessarily increase their involvement and understanding. She wants to encourage a more personal, questioning and philosophical approach to science exhibitions; an approach which will lead to more discussion and debate. NESTA's support is giving Rachel time out to explore these approaches and funding travel, research and a mentor.

Reducing hospital stress for children

Medical procedures are traumatic for everyone, but especially children, as computer programmer Mark Jones knows only too well from personal experience—he spent two years in hospital as a twelve year old. He's using his computer programming and design skills (he worked on Red Dwarf and Teletubbies) to develop ways of helping people through the stress of serious medical procedures by designing on-screen games and puzzles which help children and parents to understand what's going to happen to them. Ultimately the technology could evolve for use on handheld computers like Gameboys and mobile phones, providing both fun and much needed emotional support. NESTA's award of £71,000 will enable him to further develop his innovative computer programme.

Story telling and science

In 1768 Captain James Cook set sail from Deptford on a journey that would see Britain making giant leaps forward in science, navigation, geography, natural history and art. Internationally renowned and innovative educator Bob Bloomfield is using Captain Cook's amazing adventures as a springboard for engaging a young audience in science. He's using his Fellowship to research original first person accounts of the Endeavour expedition, following the trail of Cook's voyage to gather new media and new content. He aims to use this to explore new ways of story telling as a means of communicating science.

COLLABORATIONS

Automated tissue engineering

It will not be long before tissue engineering allows routine replacement of failing organs, a breakthrough which could transform the realms of surgical possibilities and save hundreds of lives every year

Chris Mason, a medical research fellow at University College London, has developed a new process for mass-producing human tissue that could revolutionise cardiac surgery in Britain. Dr Mason was the overall winner at Medical Futures' second annual awards ceremony in London, in May, which was supported by NESTA. The award is one of the ways that NESTA hopes to uncover the wealth of innovation and inventiveness that exists within the NHS.

APPENDIX 2

Letter from Lord Puttnam, Chair, NESTA, to the Chairman of the Committee

Please find enclosed the additional information we promised to let you have for the Committee's enquiry into NESTA's work. Enclosed are:

- A breakdown of our spending on awards in each of our years of existence (Annex A);
- A breakdown of our running costs budget (Annex B);
- A copy of our 2002–03 business plan (Annex C);
- Further details of our Fellowship Programme (Annex D).

On the question of our contacts with Regional Development Agency Chairs, we have written to all RDA Chairs on a number of occasions to keep them up to date with our work. On the whole, responses have been favourable, and we have meaningful dialogue with the majority of RDAs. However, this is less the case with the RDAs in the South East, South West and the East of England.

I thought it might also be helpful to clear up two points which arose during our oral evidence session, which I think caused some confusion at the time. Firstly, there is the issue of how quickly we began to make awards—at one point Mark Hoban suggested that we had only made awards totalling around £1 million up to the middle of 2001. In fact we had made awards totalling £6.9 million by the end of the 2000–01 financial year, with an additional £13.8 million awarded since. I think that the £1 million figure referred to the period up to March 2000, rather than 2001.

Secondly, I feel there was some confusion around the figures which Dr Turner was using in his questioning. Our actual expenditure on administration in 2000–01 was £1.27 million, which represents 9.8 per cent of our income for that year.

I hope that you find this additional information useful, and that it helps to clear up any confusion which may have arisen during our oral evidence session. Finally, I would like to extend an invitation, through you, to all members of the committee, to visit NESTA and find out about our work in more detail.

22 August 2002

Annex A

PROGRAMME COMMITMENTS

	<i>Year to 31 March 2000 £ million (Number of awards)</i>	<i>Year to 31 March 2001 £ million (Number of awards)</i>	<i>Year to 31 March 2002 £ million (Number of awards)</i>	<i>1 April–30 June 2002 £ million (Number of awards)</i>	<i>Total to date £ million (Number of awards)</i>
Invention and Innovation	0.5 (7)	2.3 (34)	1.7 (40)	0.8 (13)	5.3 (94)
Fellowship	0.5 (6)	1.3 (15)	2.4 (31)	0.2 (3)	4.4 (55)
Education	1.0 (4)	1.3 (15)	1.6 (35)	0.7 (15)	4.6 (69)
Other Projects	—	—	3.2	3.2	6.4
TOTAL	2.0 (17)	4.9 (64)	8.9 (106)	4.9 (31)	£20.7 million (218)

Annex B

BREAKDOWN OF OPERATING COSTS FOR EACH OF THE YEARS SINCE NESTA'S INCEPTION

Running costs, year ending March:	1999	2000	2001
			£000
Agency staff costs	41	103	149
Communications and publicity	39	56	44
Consultancy fees	31	123	21
Depreciation	19	83	165
Current cost devaluation	0	13	16
Information Technology costs	87	87	185
Office and sundry	21	33	86
Financial and investment fees	—	82	46
Legal and audit fees	—	48	19
Relocation costs	45	31	—
Operating lease	137	99	—
—Land and buildings			54
Research and consultation	108	0	—
Staff recruitment	101	32	34
Staff training	7	13	10
Staff costs	242	149	251
Travel, subsistence and other staff costs	31	31	24
Recoverable VAT	—	—	(33)
NESTA Enterprises Ltd	—	—	199 ¹
TOTAL	909	983	1,270

Final audited figures for the year to March 2002 are not yet available. National Audit Office sign-off is anticipated in the early autumn and as soon as we receive this we will forward the figures to the Committee.

Annex C

ANNUAL OPERATING PLAN 2002–03

1. NESTA'S MISSION

'To support and promote talent, innovation and creativity in science, technology and the arts.'

2. STRATEGIC/CORPORATE OBJECTIVES (3-YEAR PLAN)

21. In 2002–03 NESTA will be in the final year of its 3-year corporate plan. The corporate aims set in the plan provide the framework for what we are setting out to achieve. These are:

Aim 1 To identify, nurture and promote creative, talented and inventive people and ideas to enable them to pursue excellence and generate benefit for the UK economy;

¹ NESTA Enterprises Ltd only came into existence during this financial year.

Aim 2 To contribute to public appreciation of, and the development of individuals' skills in, creativity and innovation in Science, Technology and the Arts;

Aim 3 To develop an understanding of the environment in which NESTA is operating and to learn the lessons from its strategic support and feed them back to policy makers;

Aim 4 To maximise the value of NESTA's endowment and secure our long-term financial viability;

Aim 5 To secure and sustain support services to enable NESTA to operate efficiently and effectively and promote its work.

3. SUMMARY OF ACHIEVEMENTS 2000–02

3.1 Progress against the corporate aims, which provide the framework for what NESTA has set out to achieve over the last two years, is summarised below:

Aim 1 To identify, nurture and promote creative, talented and inventive people and ideas to enable them to pursue excellence and generate benefit for the UK economy.

1. NESTA has employed a pool of over 100 nominators across disciplines, nations and regions to identify talent;

2. NESTA has implemented a proactive marketing campaign via networks of signposting organisations like business links, universities and arts networks to raise awareness and stimulate high quality applications;

3. NESTA has supported awardees to achieve their milestones by appointing mentors and project champions;

4. NESTA has committed at least £15 million in direct funding to over 200 awards;

5. NESTA has appointed around 45 Fellows and made around 80 Invention & Innovation awards;

6. NESTA is reviewing the strategies for the Fellowship and Invention & Innovation programmes to assess their effectiveness;

7. NESTA has established its website as the main gateway to NESTA for general information, applications to the Invention and Innovation programme and to share our stories. Further improvements are now being made to improve its usability for different audiences;

8. NESTA has built a profile for its awardees—over 350 positive stories (mainly features) have appeared in the print and broadcast media;

Aim 2 To contribute to public appreciation of, and the development of individuals' skills in, creativity and innovation in Science, Technology and the Arts.

1. NESTA has commissioned around 45 major education projects, together with smaller scale pilots and events, working collaboratively with other organisations;

2. NESTA has set up and secured over £3 million public funding for FutureLab which will be pioneering the interactive learning potential of broadband technologies and sponsorship in the form of equipment and facilities has been secured from Macromedia, Cisco Systems and Apple;

3. NESTA was appointed to run the DfES's Science Year and is now half way through delivering an exciting nationwide programme of events and initiatives;

4. NESTA has implemented a proactive Communications Strategy, building effective relationships with the media to convey our stories to the public—over 40 editors and journalists have received one to one briefings on NESTA's activities;

5. NESTA has made an impact in policy and practice within the education sector on such issues as Gifted and Talented Children and interactive learning through piloting innovative projects. We have worked closely with a range of other bodies whose aims complement ours—the Royal Society of Arts, British Association, the QCA and the Wellcome Trust.

Aim 3 To develop an understanding of the environment in which NESTA is operating and learn the lessons from its strategic support and feed them back to policy makers.

1. NESTA is in the process of beginning evaluation and review of the effectiveness of our programmes and funding arrangements;

2. We have carried out research into the creative barriers faced by art and design students and the support they might need to pursue entrepreneurial ideas.

Aim 4 To maximise the value of NESTA's endowment and secure our long-term financial viability.

1. NESTA has established Fund B;

2. NESTA is in the process of commissioning feasibility into fundraising opportunities from a wide range of sources;

3. Through its Invention and Innovation programme NESTA has pioneered an innovative approach to public investment and received its first royalty cheque in March;

4. NESTA is engaged in detailed discussions with the DCMS over an additional investment of resources into our endowment.

Aim 5 To secure and sustain support services to enable NESTA to operate efficiently and effectively and promote its work.

1. NESTA has developed and implemented a programme for the training and development of our workforce and has recruited 29 staff;

2. NESTA is one of the first public bodies to have an on-line application process;

3. NESTA has drawn in an enormous pool of external expertise from programme committee members to nominators, mentors, project champions, assessors and partners;

4. NESTA has won an award for our extranet capability;

5. NESTA has implemented a proactive Communications Strategy to differentiate it from other bodies, secure its brand values, protect its reputation and support awardees in promoting their work;

6. We have promoted the benefits of NESTA awardees and projects through a broad range of promotional activities—involving over 500 key influencers in NESTA events, sponsoring new awards and competitions, securing media coverage and generating broadcast opportunities through Tomorrow's World, BBC2's Technogames, Carlton's Future Now and the Discovery Channel's Inventors' Roadshows.

4 NESTA PRIORITIES FOR 2002–03

In this crucial year of our initial corporate strategy NESTA will particularly focus its energies on two key themes (derived from Aim 3 and 4 of the Corporate Plan):

4.1 To maximise the value of NESTA's investments/awards and secure the organisation's future sustainability.

We believe that it is essential that NESTA now secures its future financial sustainability to enable the organisation to continue to fill a gap in identifying and exploiting creativity and innovation. There are a number of avenues that we will need to explore to achieve this. The key priorities under this theme are to:

4.1.1 Maximise the value of the I&I investment portfolio. There is a political and commercial imperative for NESTA to prove the worth of its approach and its ability to generate income—by maximising the value of its portfolio of awards—particularly in I&I which has the potential to generate real returns for re-investment in future projects. In the past year we have been focusing on building the I&I team, developing their skills sets and reviewing processes for award management. It is now crucial that we review each of our investments individually and implement a targeted approach to achieve the best result from those with potential. By the end of the year we will need to be able to account for the progress of all awards and make tough decisions about those that are unlikely to succeed. We will need to have identified those investments with most potential for growth and focused our energies on creating value for both them and us.

4.1.2 Secure NESTA's future financial sustainability—through additional public and private funds. We will aim to secure additional public funding in the short-term and, equally importantly, develop medium and long-term strategies for attracting private sector assets and funding into NESTA.

4.1.3 Maximise the benefits (visible and invisible) created by our awards under the Fellowship and Education programmes.

4.2 To develop a thorough understanding of what NESTA has learned from its strategic support in order to shape future policy.

At this crucial stage, the effects of NESTA's policies and programmes are beginning to tell and we now have the opportunity, and an obligation, to learn from those experiences and re-focus our strategies accordingly. We are already aware of some key areas where work needs to be done.

The key priorities under this theme are to:

4.2.1 Develop, on the basis of what we have learn from our pilot regional representation, a model to maximise our effectiveness and impact in the nations and regions. There is a clear gap in NESTA's capacity to show that it can seek out and support creative excellence wherever it may be found. More can and must be done to fill those gaps and NESTA now needs to explore the most effective and efficient models for doing so. This is of particular importance with the expanding jurisdiction of the nations' and regions' governance structures and is essential to our continuing credibility as an effective and imaginative national talent scout and an influencer of public policy.

4.2.2 Build the public profile and reputation of NESTA based on its distinctive role and contribution and on the profile of its portfolio of awardees.

4.2.3 Review and evaluate what we have learnt from the deployment of all three programmes and NEL and the implications for both public and internal policy and set in place the next three-year organisational challenge—the 2003–06 corporate plan.

5. OPERATIONAL PLANS

5.1 Detailed operational plans for the year will also include a range of activities derived from our corporate aims. We will also improve systems and processes for award management and build on the benefits of a community of awardees, mentors, champions and supervisors.

6. RESOURCES

6.1 Programme award budgets for 2002–03 have been set at the 2001–02 level of £7.9 million. A significant tranche of further endowment funding is anticipated and the budget has been set at this level in order to maintain the momentum of the programmes and maximise their impact. Staffing and infrastructure levels have been established to cope with this level of awards.

6.2 The basis for allocating the programme expenditure between programmes remains the same as in the 2001–02 budget: the Invention and Innovation programme has been allocated 40 per cent of the total available programme expenditure. 30 per cent has been allocated to each of the Fellowship and Education programmes.

6.3 Non-award expenditure levels of £5.6 million represent a £660,000 increase on 2001–02, broadly representing staffing cost increases and inflationary pressures. The proportion of resources allocated to programmes has increased relative to 2001–02 with cuts being made within indirect support costs. The costs of implementing the long-term IT Strategy have been capitalised.

6.4 The budget excludes any additional lottery funding. When confirmation is received of further funding, the budget and annual operating plan will be updated.

Annex D

DETAILS OF THE NUMBERS NOMINATED FOR FELLOWSHIPS IN EACH FINANCIAL YEAR AND OF HOW MANY PROGRESS TO EACH STAGE OF THE PROCESS

<i>Year</i>	<i>Number nominated</i>	<i>Number invited to apply</i>	<i>Number awarded</i>
1999–2000	44	36	0*
2000–01	40	32	24
2001–02	34	19	28**
TOTAL	118	87	52

Notes:

* No awards were made in 1999–2000 as the Programme was not operational until August 1999.

** There was a higher number of awards than invitations to apply in 2001–02 due to the time lapse which generally occurs between invitation of awardees and submission of application forms.

INFORMATION ON THE NUMBER OF NESTA NOMINATORS RECRUITED EACH YEAR AND DETAILS OF THE APPOINTMENT PROCESS

	<i>Numbers invited</i>
1999–2000	72
2000–01	76
2001–02	35

Note:

Fewer nominators were invited in 2001–02 as we suspended recruitment of new nominators whilst we undertook an interim review of the programme.

Appointment Process

Nominators are recruited for their level of expertise and achievement within a specific field (Science, Technology and the Arts) and for their knowledge of cutting edge practice. It has taken us some time to build a balanced pool and the figures demonstrate this. We now recruit in line with proportions reflected by regional/national data gathered from the 1991 population census. These provide minimum levels and will be updated when the 2001 data becomes available. We are working towards having a pool of 150 nominators on our books (by March 2003) that are refreshed as they nominate. Each nominator is encouraged to make two nominations. We gather data from nominators regarding tertiary qualification and ethnic category as well as age and gender.

Nominators come to our attention through networking, suggestions (solicited and unsolicited), desk based research, our own contacts within the sector and through media attention. The idea of nominators was

supported by stakeholders during our initial consultation in 1998 as being a particularly effective way of recognising excellence in a number of fields.

We are currently trialling a number of other mechanisms for ensuring that our Fellowships go to the right people. Fifty Organisations have registered as Nominators, and we have recruited 25 people to act as talent scouts in the East Midlands—a region where we had previously made no Fellowship awards. Our new Dream Time Awards operate an open access policy.

APPENDIX 3

Letter from John Connolly, Policy and Public Affairs Officer, NESTA, to the Clerk of the Committee

I am writing in response to your request for some further information from NESTA, relating to our investment in IT resources and agency staff.

In the year to the end of March 2001—the most recent period for which we have audited accounts—NESTA was still at an early stage of its development. We were still setting up as an organisation, moving into new offices and establishing systems. As such, there were a large number of one-off set up costs incurred by the organisation. These are reflected in a number of areas in the accounts for that year, including the two which you have asked for further information on.

In the year to March 2001, NESTA invested substantial resources in setting up a high-quality IT system. This has enabled us, for example, to deliver a completely electronic applications procedure for our Invention and Innovation programme, and has saved substantial sums in the long term by reducing the amount of time needed to deal with applications. This approach has been cost-effective, and has also gained us plaudits: we have won a *Vision 100* award, sponsored by BT, *Management Today*, *Sunday Business*, and the Cranfield School of Management. These awards celebrate visionary companies, and we won an award for pioneering electronic business methods. Our electronic applications process has also been cited as an example of best practice in the recent DCMS consultation exercise on the future of Lottery Distribution policy. These achievements would not have been possible without substantial up-front investment.

As much of the set-up work for our IT system was of a one-off nature, it was more effective to have it carried out by agency staff. This was also true of a number of other set-up activities, resulting in relatively high expenditure on agency staff in this financial year. In addition, as a small organisation, we find it more cost-effective on an ongoing basis to deal with short-term increases in workload by taking on a small number of agency staff, rather than employing permanent members of staff to deal with a short-term need.

We do not yet have audited accounts for the financial year to 31 March 2002. However, we expect that they will show a substantial reduction in the sum spent by NESTA on these areas.

26 September 2002

APPENDIX 4

Memorandum submitted by the Department for Culture, Media and Sport

INTRODUCTION

The Government's response to the Science and Technology Committee's inquiry into NESTA in 1999 welcomed the Committee's interest at what was then the very early stages of development of this organisation. The Government was encouraged by the Committee's endorsement of this new approach to supporting creativity and innovation in the UK, and concurred with the view that NESTA should be a dynamic organisation which was strategic in its approach and able to take risks. We recognised that NESTA's relatively modest income compared with other public bodies, and its broad remit meant that it should target funding where it was likely to have the greatest impact and add most value. We also agreed that NESTA should be judged on outcomes likely to be delivered in the longer term.

Since NESTA's first major awards were announced in May 2000, over 200 awards worth over £15m have been made under its three main programmes—Invention and Innovation; Fellowships; and Education. Given that most awards are for 2-3 years, it is too soon to judge the long term impact of NESTA's funding. However, we believe that NESTA has made significant progress over the last three years and has clearly demonstrated success on a number of fronts, as well as clear potential to do more. The Committee's follow-up inquiry is, therefore, welcome and provides a timely opportunity to take stock of progress.

We understand that colleagues from NESTA will be submitting detailed evidence of its achievements and will be appearing before the Committee. Therefore, this memorandum focusses on the Government's role, particularly that of DCMS as the sponsoring Department; our view of NESTA's achievements; and on NESTA's future.

DCMS' SPONSORSHIP ROLE

It was recognised when NESTA was established that, in order to achieve its objectives, it would require a degree of freedom beyond that of other Lottery and public bodies. Accordingly, the Financial Directions and Accounts Directions issued by the Secretary of State for Culture, Media and Sport in 1998 and a Management Statement aimed to give NESTA as much freedom as possible, while ensuring that it was still publicly accountable and subject to proper scrutiny. Inevitably, there are some tensions resulting from the need for NESTA to be free to take risks and operate in the commercial world, and the need to demonstrate good use of public funds. There is also a balance to be struck between the desire to maximise income from the endowment and the need to safeguard public money. Close and constructive working between DCMS and NESTA, with support from HM Treasury and the NAO, has ensured that these issues are regularly discussed and resolved wherever possible. For example, during 2000-01 DCMS and NESTA agreed revisions to the Financial Directions which removed some unnecessary accounting burdens, particularly those that impacted adversely on NESTA awardees. In addition, NESTA was given freedom to manage the investment of the income from the endowment (Fund B) and this year we clarified Directions to ensure that NESTA is able to take advantage of a wider range of defined endowment investments.

NESTA's Directions require it to establish adequate procedures for appraising, monitoring and evaluating its programmes. As part of the sign-off procedures for the financial management structures of each of NESTA's three programmes, DCMS and the NAO were particularly careful to check that suitable systems were in place to evaluate individual projects as well as the overall effectiveness of each programme. DCMS maintains a close interest in the outcome of NESTA's internal evaluation work and this is a standing item for discussion at regular liaison meetings DCMS officials hold with the Chief Executive and his senior management team. It is particularly encouraging that NESTA constantly seeks improvement to its programmes and is open about any failings.

DCMS has also played a role in promoting NESTA's work with other Government Departments, its NDPBs and organisations and individuals it has dealings with (particularly on the arts and creative industries). For example, DCMS strongly supported NESTA's successful bid to DfES to run Science Year and has been strong advocate of the NESTA FutureLab project. DCMS also encouraged NESTA to develop proposals for new areas of work which featured in the Department's Green Paper, *Culture and Creativity: The Next Ten Years*, published in 2001.

NESTA'S ACHIEVEMENTS

NESTA has been in active operation for just over two years and, while it is too soon to judge the long term outcomes, it has, in our view, been relatively successful: applications to its Education and Invention and Innovation programmes remain high (2000 applications resulting in 82 awards under the Invention and Innovation Programme by April 2002); it has received positive publicity and is making a good name for itself; it has developed an award-winning website and is seen as a model for electronic handling of applications; and it has forged wide and innovative partnerships across the private, voluntary and public sectors.

NESTA has been successful in supporting and developing partnerships with Government departments, in particular DfES; it secured the contract to deliver Science Year and Ministers are considering proposals to extend the contract until July 2003; it secured around £3 million funding for its FutureLab project; and it is working with the Gifted and Talented team at DfES and with DCMS to produce a core framework for the development of school children with talent in the creative arts. The Small Business Service, an agency of DTI, has also welcomed NESTA's support of small businesses through the Invention and Innovation Programme. This is seen as a valuable complementary measure to the SBS Smart scheme.

We expect NESTA to take risks and invest in ideas that may come to naught. However, it is encouraging that a few projects have already begun to provide a return on NESTA's investment. We are also pleased to see that a good balance has been achieved across NESTA's three areas of responsibility, and that it is supporting projects and actively promoting ways of working that are helping to break down the traditional barriers between the arts and sciences.

In 1999, the Committee felt that NESTA would have to be alive to the risk of partiality in the selection of Fellows and projects. We strongly endorsed this view at the time, and have since been satisfied that, on the whole, the selection processes are open and fair. The one area where we have expressed some concern has been the selection process for the Fellowship programme, which is closed and relies on individuals being put forward by selected nominators. We are, therefore, pleased that NESTA has taken steps to increase the number and diversity of its nominators; has sought to boost geographical distribution of Fellows by employing "talent scouts"; and in June this year announced the piloting of Dream Time which has an open application process. This new element of the programme offers high achievers a concentrated period of "time out" to develop their potential for the benefit of their profession.

THE FUTURE

The Lottery Act 1998 makes provision for NESTA to receive an increase in its original endowment. NESTA did not receive additional funds under the New Opportunities Fund (NOF) Round 3 in 2000 because it was felt that, as a new organisation operating under a unique funding arrangement, it needed first to demonstrate a successful track record over a reasonable period of time. However, the prospect of an additional endowment under a future NOF round was clearly signalled in the *Culture and Creativity Green Paper*.

NESTA put forward some broad proposals for new projects which subsequently featured in the Green Paper, and NESTA and DCMS officials held a number of meetings in 2001 to discuss ways of taking these proposals forward. This resulted in NESTA submitting a bid to the Secretary of State for Culture, Media and Sport in July 2001 for a £300 million increase in its endowment comprising of two main elements: a bid to help counter the effects of falling interest rates on its income and thereby maintain the current level of activity; and a bid to deliver a package of new work, including the two proposals in the Green Paper. The Secretary of State (DCMS) supports, in principle, some elements of this bid and is considering carefully the funding options.

DCMS is scheduled to conduct a quinquennial review of NESTA in 2004-05. This may be subject to revision in light of the Cabinet Office's proposals for the future of such reviews.

June 2002

APPENDIX 5

Memorandum submitted by the Arts and Humanities Research Board

1. The Arts and Humanities Research Board (AHRB) was established in October 1998, shortly after the National Endowment for Science, Technology and the Arts (NESTA). Its mission is to support and promote research in the arts and humanities, to improve the breadth and depth of our knowledge and understanding of human culture, both past and present, and thereby to enhance the quality of life and creative output of the nation. It fulfils this mission through three main programmes:

- the research programme, with a portfolio of eight new schemes of awards to support research projects undertaken by both individuals and teams of researchers in universities and colleges;
- the postgraduate programme, with a portfolio of three schemes of awards to support postgraduate students pursuing programmes of study at both Master's and doctoral level; and
- the museums and galleries programme, with two schemes to support the core stewardship activities, as well as specific projects, at university museums and galleries.

2. The AHRB made its first awards in late 1998, and during its first few months it developed in consultation with the arts and humanities research community and other stakeholders a strategy which has enabled it to establish clear priorities for its first five years of existence. The planned developments and targets set out in the first strategic plan have been fulfilled; and the AHRB's annual budget has increased from £25 million to over £70 million. A recent Government review has welcomed the success of the AHRB in establishing its position as the leading provider of competitive grants for research and postgraduate study in the arts and humanities; and it has accepted the case for the AHRB to move to the next stage of its development, as a full Arts and Humanities Research Council alongside the other Research Councils sponsored by the Office of Science and Technology.

3. The AHRB welcomes the Committee's short follow-up inquiry into NESTA, and the opportunity to submit evidence. Our comments focus, naturally, on NESTA's activities in support of the arts, as distinct from science and technology.

STRATEGY

4. The AHRB responded early in 1999 to the consultation document issued by NESTA on the development of its strategies and activities in the first stages of its existence. Like the Committee in its first report in July 1999, we commented on the need for NESTA to adopt a highly strategic approach to the development of its activities, and to develop a distinctive role that added value to what was and is being done by other bodies. We stressed the importance of this particularly in relation to proposed strands of activity, such as fellowships and education, where other bodies such as the Research Councils, the Royal Society, the Royal Institution, and other educational bodies, already have well-established roles and activities. As the Committee noted, this is of particular importance since the amounts of funding available for allocation by NESTA are modest in relation to its ambitions.

5. In the higher education sector at least, we believe that there is as yet very little understanding of what NESTA's distinctive role is, and of how, if at all, its activities are intended to complement those of other bodies such as the Research Councils and the AHRB. We believe that more could and should be done by NESTA to develop its own understanding of the work and the roles of other bodies, and to consult with the higher education sector, so that it can develop and articulate to those who might seek its support its own

distinctive role. It is not clear, for example, whether NESTA sees as one of its roles the development of the nation's capacity and capability in creativity and innovation; still less is it clear how effective NESTA might have been in meeting such an aim.

SUBJECT DOMAIN

6. NESTA's subject domain is defined by its title and by the National Lottery Act 1998. But its understanding of what is encompassed by science, technology and the arts, and of the relative priority to be given to different parts of that domain, are not clear. We welcomed in 1999 NESTA's proclaimed aim of working across the boundaries between the scientific, technological and cultural aspects of human activity. But we also commented on the confusing lack of clarity in NESTA's definition of what might be included in those various domains. We believe that this lack of clarity persists, and that this is an important aspect of the confusion among potential clients as to the kinds of activities that NESTA considers eligible for its support. Some clearer specification of the subject domain would therefore be welcome.

FELLOWSHIPS SCHEME

7. We note that NESTA's original plan was to make 100 fellowship awards over its first three years, although we are not clear as to the rationale for that target. We are also not clear as to whether there was any target for the distribution of awards across the various parts of the domain of science, technology and the arts, or among various categories of people who might merit support of this kind. Since a number of other bodies, including the Research Councils and the AHRB, the Royal Society, the British Academy, the Leverhulme Trust and other charities make fellowship awards, it would seem to be of some importance that the distinctive role of NESTA in making such awards should be clearly defined. It would appear that the majority of awards to date have been made in various areas of the arts, broadly defined; but it is not clear whether this has been intentional or not.

8. Doubtless there has been and will be useful and innovative work coming out of the fellowship awards; but we are not clear as to the monitoring and evaluation strategies and mechanisms that have been put in place to enable NESTA to reach a rigorous assessment of whether the scheme has met the aims and objectives set when it was established. We hope that the results of such an assessment of the scheme as a whole, including the success of the mentoring approach that has been adopted in supporting individual fellows, will be published.

9. We have noted the recent launch of the newly-configured "Dream Time" fellowships. But we find it difficult to discern from the leaflets associated with the launch how these will differ from the existing fellowships scheme, beyond the stated aim of making two awards in each of the areas of science, technology and the arts. It remains unclear what has prompted this new development, and the implied change in the allocation of awards across the different subject areas.

PEER REVIEW AND TRANSPARENCY

10. Both the AHRB and the Committee expressed reservations in 1999 about NESTA's decision not to adopt a process of peer review in the assessment of applications. We believe that the result has been that the both the communities and the individuals that NESTA is intended to support are unclear as to how they might seek support; and that they are also unclear as to the reasons for the decisions that are taken. We believe strongly that competitive peer review brings both rigour and transparency to the selection of applications; and we do not accept the argument that peer review systems cannot be made responsive to novelty, creativity and new talent. We thus retain strong reservations as to whether NESTA has adopted appropriate principles and mechanisms for the assessment of applications.

STAFFING AND ADMINISTRATIVE COSTS

11. We note that during the Committee's hearings in 1999 there was comment about the need for NESTA to recruit a talented staff, and the costs associated with that. This perceived need is associated in particular with the mentoring approach that NESTA has adopted to its award-holders. That is why it is important that there should be rigorous assessment of the value added by this approach.

12. We note also that one of the arguments presented against the adoption of peer review was that it would be costly. In the light of the AHRB's and of NESTA's experiences over the past four years, we believe that argument to be misconceived. The AHRB, which utilises rigorous peer review processes for all applications and awards (including for monitoring and evaluation of awards), has its running costs subject to a cap of 5 per cent of all expenditure. We note from its Annual Report for 2000-01 that NESTA's operating costs represented 13 per cent of its total expenditure; but that when "support costs" directly attributable to grants and awards are added, the ratio rises to 49 per cent.

PARTNERSHIP

13. The AHRB expressed in 1999 the hope that it would be able to develop joint activities with NESTA in support of our complementary aims. We have initiated a number of meetings with officers of NESTA on matters of joint interest; and we hope that it may be possible to develop some joint activities in the future.

July 2002

APPENDIX 6

Memorandum submitted by British Antarctic Survey and Braunarts

I am writing to you on behalf of British Antarctic Survey (BAS) and the creative multi-media company Braunarts. We have been working with NESTA education awards personnel since 2000.

British Antarctic Survey is responsible for the majority of the Government's scientific research activities in Antarctica. It has a continuing commitment to communicating its science and operation to society and is involved in a number of educational initiatives.

Braunarts work as creative producers of new digital media exploring the arts and culture as well as creative consultants to a select set of clients in arts, museums and galleries in the UK and overseas.

BAS and Braunarts (with assistance from the Philharmonia Orchestra) have created an innovative multi-media music making toolkit for GCSE and A-Level music students that uses real science, stunning images and extraordinary sounds from the Antarctic to provide new ideas for musical composition. The project, *Antarctic Waves*, is funded (around £100,000) by NESTA.

Working with NESTA's education team has been a very positive experience for our production team. During the two years since we first approached NESTA for funding of *Antarctic Waves* we have received an unprecedented level of support and encouragement as well as practical guidance by Martin Freeth initially, and then Clare Lovett and Gareth Binns. When our production team required particular business knowledge NESTA funded a Project Supervisor and introduced us to high-calibre business people to help us develop plans for future versions of *Antarctic Waves*.

NESTA's framework for awardees with its regular communications, progress meetings, encouragement, attention to budget management, together with a willingness to provide additional specialist expertise has genuinely nurtured the project.

It is our opinion that NESTA is an extraordinary organization that not only identifies talent and supports innovative projects, but also makes great use of its highly motivated talented staff. *Antarctic Waves* is such a unique and innovative creation that it could be difficult to categorise for a less visionary funding body.

We believe that, so far, NESTA is succeeding in its mission to "support and promote talent, innovation and creativity in the fields of science, technology and the arts".

Linda Capper

Head of Press, Public Relations & Education

June 2002

APPENDIX 7

Memorandum submitted by the Royal Academy of Engineering

The Royal Academy of Engineering is pleased to respond to the Committee's inquiry into the National Endowment for Science, Technology and the Arts (NESTA).

NESTA's low profile

The Academy's first observation concerns NESTA's low profile.

Of over 130 Fellows of this Academy who responded to our call for comments, 110 professed no knowledge or awareness of NESTA whatsoever. Given that The Academy's Fellows occupy senior positions in academia and in major engineering companies—positions from which we might expect a good number to apply for NESTA grants in their own names or to encourage colleagues to do so—it is disappointing that so few are aware of the opportunities available.

As one Fellow (an engineering Professor closely involved in environmental issues and water management) put it, "I have never heard of NESTA. This is amazing since most active academics have a sixth sense when funding opportunities present themselves."

The Academy would strongly encourage NESTA to review its marketing and publicity. NESTA enjoys The Academy's strong support, but it is clear that the organisation is failing to connect with key leaders in British innovation.

We recommend that NESTA consider taking steps to raise its profile in centres of excellence, such as university engineering departments rated 5 or 5* in the recent Research Assessment Exercise.

We were pleased to receive a recent letter from NESTA publicising the new "Dream Time" fellowships. We shall certainly draw these to the attention of our Fellows.

NESTA's performance

NESTA is well regarded by those (relatively few) Fellows who have dealings with it. A small number of Fellows have received NESTA grants towards their work, or have acted as mentors on NESTA projects.

Without exception, this small group of Fellows reported their dealings with NESTA in positive terms.

NESTA's general operations

NESTA has built an excellent reputation as a responsible and supportive grant-giving body. NESTA monitors projects closely and its supervisors remain closely involved in the progress of each project.

NESTA's assessment procedures

NESTA's procedures for evaluating proposed new projects are well structured and of the rigour expected of any distributor of public funds.

Most of the science and technology grants have been for interesting and worthwhile projects, although it is more difficult to see how some of NESTA's investments in the arts will generate a return. Nevertheless, we would encourage NESTA to continue to take a more adventurous approach than would be possible under the sort of guidelines followed by conventional venture capitalists. NESTA's freedom to aim higher and take greater risks is to be valued.

NESTA has a good record of supporting unusual projects that would not be funded by other means. The Academy would encourage NESTA to steer away from supporting educational projects, for which other sources of funds exist. Instead, NESTA should concentrate on backing innovative ideas that are outside the remit of other funding bodies.

Effective mentoring

Most NESTA fellowships involve the appointment of a mentor, who can act as a source of support and advice, as well as playing a role in assessment and monitoring. This scheme works well, with many mentors providing advice and assistance "beyond the call of duty".

The Academy operates a similar mentoring system in respect of its own post-doctoral research fellowships and other appointments and finds it of great value. Some Academy Fellows act as NESTA mentors.

Value of awards

NESTA's Fellowships for "exceptional individuals" are remarkably generous when compared with the meagre awards available to those doing PhDs in strategically important science and technology subjects. Although this causes some resentment among engineering academics, the solution is to address the very serious problem of low salaries throughout academia, rather than to reduce the level of NESTA awards.

We would be pleased to discuss these points with the Committee in more detail. As ever, please do not hesitate to contact me if you require any further details.

June 2002

APPENDIX 8

Memorandum submitted by the Royal Society

As the UK academy of sciences, the Royal Society is clearly interested in NESTA's success in stimulating and supporting innovative science and creative interaction between science technology and the arts. We heartily approve of NESTA's commitment to investing in excellence in science and to helping talented individuals throughout the UK achieve their potential as well as encouraging individual scientists, inventors and artists to cross S, T & A boundaries. We are pleased to see that NESTA seeks to build bridges between creative people and society by encouraging public debate about developments in science, technology and the arts.

We share many of these aspirations with NESTA eg the Society is fully in accord with the need to support individuals of high ability and commits a substantial proportion of its £35 million budget each year to fellowships for the brightest research workers in science, engineering and technology in the UK. We are also

deeply engaged in consultation with the public through our science in society and science advisory programmes and our Public Programme involves joint activities with arts organisations.

We were pleased that NESTA officials consulted us early in the life of the organisation and have kept in touch with us from time to time since then.

Over the past year, we have been pleased to collaborate with NESTA and the DFES on a feasibility study for a science academy for gifted and talented young people, now nearing completion. The Society has also supported the NESTA-managed Science Year, with our President, Lord May, involved both in the opening ceremony and providing a key-note address in January to a Science Year audience of school children. The Society has also participated in the Science Year "kit-pot" initiative, under which hi-tech science equipment was sent free of charge to UK schools.

We understand NESTA divides its operation into three areas—invention and innovation, fellowships and education and that it has made 200 awards in the past two years with a value of £15 million.

It seems to us that NESTA set itself a challenging target ie to become an important new force in stimulating highly creative work in science technology and the arts in a relatively short time and our impression is that it has done well in its first three years. Whilst NESTA itself may be unsung, by deliberate policy we understand, it has nevertheless supported a large number of original and creative projects and the omens are good for the future. The annual budget of £10 million per annum seems to have been well spent and there would appear to be evidence that any increase in its budget would be taken up by high quality candidates.

Has NESTA helped science and technology? It claims to be willing to invest in innovative projects at an earlier stage than anyone else and therefore be prepared to take bigger risks than others. The fact that 26 patents have been filed and 20 new companies formed with the potential for creating wealth and jobs suggests that this policy is paying off. The mid to long term future of science and technology depends however on an investment in projects which capture the imagination of young people and cause them either to make a career in S&T or at least to be interested in its impact on society. Work in the education area seems to us to be imaginative and NESTA might find benefit in exploring links with others who like ourselves are active. Our Partnership Grants scheme, which enables practising scientists and engineers to undertake project work with schoolchildren, and our Acclaim project, which profiles distinguished scientists like Nobel Prize Winner Sir Paul Nurse and his young collaborators, offer possibilities for collaboration.

The Society sees much to commend in the way Science Year has been managed. However, we very much hope that a thorough and independent evaluation of the Year's activities will be undertaken, and published, such that its successes and shortcomings can sensibly inform future initiatives of this kind.

We also like the variety and nature of the awards made under the Invention and Innovation and Fellowships programmes. The new Dreamtime Fellowships are a welcome addition to the portfolio but we believe it will be difficult for scientists working at the cutting edge of research to take themselves away from the bench for prolonged periods of time—we therefore encourage NESTA to adopt a flexible approach to these fellowships to allow for part time involvement.

We note NESTA's plans to invest more time and effort in the following in the future—

- finding new ways of identifying fellows;
- strengthening commercial expertise in order to develop invention projects;
- increasing its endowment;
- promoting innovative educational approaches focussing on design and technology for gifted children; PUS; web-based learning; and
- becoming an electronic pioneer.

and believe that developments in these areas are likely to be productive. We understand NESTA is keen to enter into new partnerships and the Royal Society will be delighted to discuss closer collaboration. We believe our Research Fellows, Officers and staff will be able to contribute ideas for future projects and nominate potential new fellows and we would welcome the opportunity to host NESTA events at the Royal Society. Some firm proposals are likely to be put to NESTA in the coming weeks.

28 June 2002

APPENDIX 9

Memorandum submitted by the Particle Physics and Astronomy Research Council (PPARC)

ABOUT PPARC

The Particle Physics and Astronomy Research Council (PPARC) is the UK's strategic science investment agency. It funds research, education and public understanding in four broad areas of science—particle physics, astronomy, cosmology and space science.

PPARC is government funded and provides research grants and studentships to scientists in British universities, gives researchers access to world-class facilities and funds the UK membership of international

bodies such as the European Laboratory for Particle Physics, CERN, and the European Space Agency. It also contributes money for the UK telescopes overseas on La Palma, Hawaii, Australia and in Chile, the UK Astronomy Technology Centre at the Royal Observatory, Edinburgh and the MERLIN/VLBI National Facility.

PPARC's Public Understanding of Science and Technology Awards Scheme provides funding to both small local projects and national initiatives aimed at improving public understanding of its areas of science.

PPARC COMMENT

I am pleased as Chief Executive of the Particle Physics and Astronomy Research Council to submit comments to this inquiry. The concept of an organisation such as NESTA, with funding to invest in talent and creative ideas and with a remit to speculate and take risks in selecting people and ideas is in itself novel and exciting and one that is welcome.

I was a NESTA nominator for a six months period in 1999–2000 and through that role PPARC had the opportunity to participate in the NESTA Fellowship programme. The NESTA Fellowships programme offered support for up to 50 fellowships annually across the arts and sciences with awards of up to £75k for research, travel or other similar support.

The number of applications to an open call to such a scheme could have been many thousands and NESTA chose instead to seek fellowship nominations through organisations such as PPARC who already had highly competitive selection schemes in place for funding individuals with potential and leadership qualities.

I would commend the use of the expertise of other organisations as a basis for pre-selecting candidates for NESTA fellowship awards should the NESTA fellowship programme continue. This provides a high degree of assurance about the excellence of the individual within the area of the arts or sciences supported by the sponsoring organisation. It leaves NESTA to decide against its own criteria on whether or not to offer any additional financial assistance.

I make this point in the knowledge that applications for PPARC fellowships for example are oversubscribed by a ratio of around 8:1 by top quality applicants within the areas of science supported by PPARC. Selection for an award is a rigorous two-stage peer review process, which involves an initial paper based exercise, followed by interviews.

The inquiry may wish to note that a European Union research fellowship scheme currently under development is likely to seek nominations using a similar model, ie applicants for funding at European level will be drawn from successful candidates in national competitions.

One of the fellows nominated by PPARC in 1999 was successful in winning a NESTA award. The award provided a young and talented astrophysicist with funds to take on a PhD student and purchase a state-of-the-art workstation for use on his research project. He has since secured a permanent post as a lecturer at Cambridge University and is recognised as one of the outstanding scientists in his field.

Professor Ian Halliday
Chief Executive

28 June 2002

body such as the European Laboratory for the Investigation of Particles and the Atomic Nuclei (CERN) and the European Space Agency. It also contributes money for the UK's science and technology. The UK's science and technology community is also involved in the UK's science and technology community. The UK's science and technology community is also involved in the UK's science and technology community.

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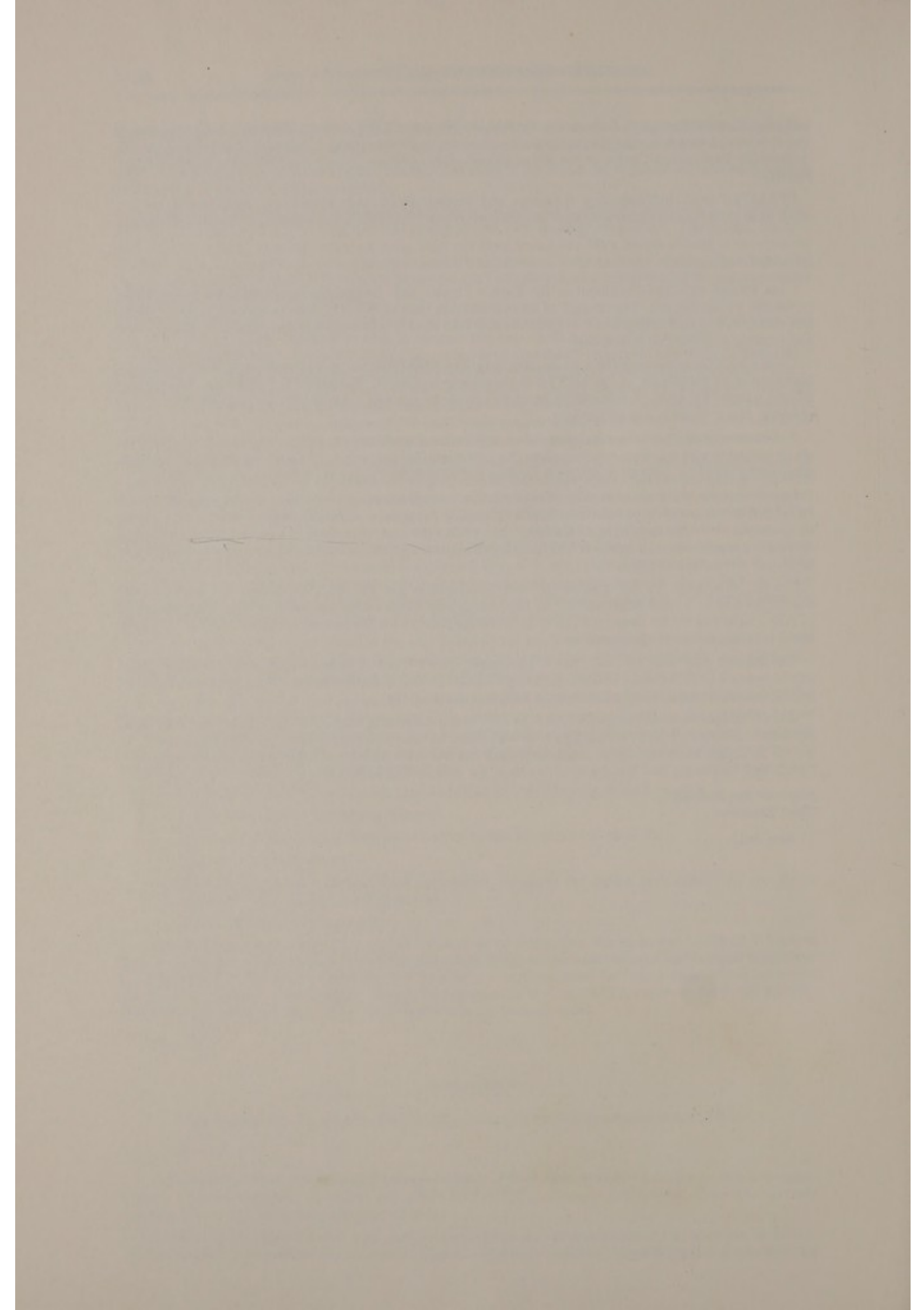
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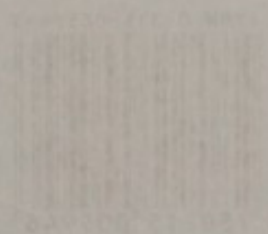
APPENDIX

PPARC's Public Understanding of Science and Technology Awards Scheme

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ISBN 0-215-00594-5



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