

## **11. Institute of Physics**

### **11.1 Aims and policies**

The Institute of Physics (IOP) is a large professional organisation with over 51,000 members. [1] The current iteration of the IOP was formed from the merger of the Physical Society and the Institute of Physics in 1960 (and for 10 years was known as The Institute of Physics and the Physical Society). Both of these organisations have a long history with the Physical Society dating back to 1874 and the original Institute of Physics being founded in 1920. [2]

#### *Statement of purpose and values*

The institute's purpose and values are stated [1] in a recent annual report, and are as follows.

##### *"Our purpose*

*We are a membership organisation for all of those who share our passion for physics, and a trusted and valued voice of the physics community.*

*We inspire people to develop their interest in physics, whether in the classroom, in colleges and universities, in businesses, or at home. We encourage and support the development of a world-class physics education that is available to all; we open up opportunities to choose a career using physics, and we enhance the level and quality of continuing professional development in the workplace, setting the standards that physics professionals should attain.*

*We bring together the physics community to share its knowledge and advance their thinking, and to play our part in ensuring the strength of the core discipline. We help to create a stimulating environment that encourages physicists to work across traditional boundaries and in which innovation can thrive.*

*We recognise and celebrate members of the physics community who have made a real difference through their work and showcase the contribution that physics makes to our economy, to our everyday lives and towards tackling some of the biggest challenges we face in society."*

##### *"Our values*

*Our values are an expression of what we believe in and how we behave as an organisation.*

- *We do what we do with integrity, openness and with a respect for others*
- *We are objective and informed by evidence. We strive to continually improve quality, and excellence underpins all that we do*
- *We look for opportunities to exploit the talent we have within our organisation. We are supportive to each other in all that we do and we foster team-working across the organisation*

- *Strategic partnerships are central to our success, and we celebrate the opportunities that come from working together with other organisations*
- *We are approachable, easy and rewarding to work with, and always open to new ideas and new ways of working*
- *We believe in the equality of opportunity for all and we will confront barriers to inclusiveness and participation wherever we encounter them”*

### *Environmental policy*

The Institute of Physics has published an environmental statement and operates an environmental management system compliant with internationally recognised standards (ISO 14001). [3] The statement shows a commitment to its environmental responsibilities, including “contributing to the reduction of local, national and global environmental damage.” The environmental management system covers a wide range of the organisation’s activities. Particularly noteworthy in the context of this report is the commitment to “Using the IOP’s position to communicate and promote the critical role physics has in establishing a sustainable society.”

The Institute of Physics was one of 24 UK-based professional and learned societies which endorsed the joint Climate Communiqué that was published in the run up to the 2015 intergovernmental negotiations (which led to the Paris Agreement). The communiqué called on national governments to take immediate action to avert the serious risks of climate change. [4]

## **11.2 Investments**

### *Size and location of funds*

The Institute of Physics held investments of approximately £22.1 million, according to a recent annual report. [1] All of these funds were invested in the CR Ruffer Absolute Return Fund. A breakdown of the main holdings of this fund is given in table 11.1, based on data listed publicly on the asset management company’s website.

<i>CR Ruffer Absolute Return Fund - assets</i>	<i>% of total investments</i>
<b>BP [F]</b>	<b>2.1</b>
Mitsubishi UFJ Financial	2.0
Lloyds Banking	2.0
T&D	1.8
Sumitomo Mitsui Financial	1.7
<i>Total</i>	<i>9.6</i>

*Table 11.1 – Top 5 investments held by IOP [5]*

In summary, we were able to obtain data on only approximately 10% of IOP’s investments. Of this, approximately 22% was held in the fossil fuel sector, and none in the arms sector. However, it was difficult to draw conclusions about whether this level was representative of all the investments held in the arms sector, as these corporations tend to be smaller than

those in other key sectors, such as energy, finance or communications, and hence do not appear so frequently in lists of ‘top’ assets.

#### *General investment policy*

The IOP’s investment policy was summarised [1] in a recent annual report as follows.

*“The overall investment objectives of the Institute are to achieve a minimum net total return of 12 month LIBOR (London Interbank Offered Rate) +3.5%, after payment of fees over rolling three-year periods, using a diversified strategic asset allocation approach to minimise the risk for this level of return.”*

#### *Ethical investment policy*

The IOP did not respond to our inquiry about having an ethical investment policy. The institute’s perspective on ethical investment was summarised in a recent annual report:

*“The Institute is a charity established with the objective of promoting the advancement and dissemination of a knowledge of and education in the science of physics, pure and applied... The trustees would not want the investment decisions of the Institute to result in activities that compromise this objective. In the event that the trustees consider that any particular classes of investment choices conflict with this objective, they will provide a written list of such classes, or specific investments, to the investment managers and will require them to take such steps as are practicable and cost-effective so as not to invest in these areas.”*

In summary, IOP’s investment policies allow for ethical investment practices – in particular, to prevent their investments compromising the objectives of the institute – but no more details have been provided of when, how or even if such practices are applied. All we can conclude from IOP’s annual report is that no investments are blacklisted. [1]

### **11.3 School education programmes**

IOP runs a large number of activities to support physics education in schools. This includes publishing resources aimed at teachers and pupils. The majority of these activities do not appear to involve sponsorship. Those that we found that apparently do – via a short survey of IOP’s website – are listed in table 11.2.

In summary, of the external organisations involved in IOP’s school education programmes, one out of seven (14%) was part of the arms industry. This company – **Babcock [A]** – is of particular concern because it is part of the consortium manufacturing the UK’s new nuclear-armed submarines.

<i>Programme</i>	<i>Involvement type</i>	<i>External organisation</i>
Teaching Advanced Physics (TAP) [6]	Sponsor	Gatsby Technical Education Projects (GTEP)
Practical Physics [7]	Developed by	Nuffield Foundation
Physics in Concert [8]	Funded by	Department for Education
	Unknown <sup>a</sup>	<b>Babcock [A]</b> <sup>b</sup> , Centre for Science Education
Voicebox: The Physics and Evolution of Speech [9]	Producer	Gatsby Science Enhancement Programme
	Collaborator	University College London

*Table 11.2 – External involvement in IOP school education programmes*

### **11.4 Events and sponsorship**

The Institute of Physics organises dozens of events each year for members and others, most of which appear to be funded by the organisation itself, but some of which receive sponsorship from external organisations. During this study, we looked in more detail at the events that seemed to be particularly prestigious and received a large income from sponsorship. The results of a short survey of activities as advertised on its websites are given below.

The Awards Dinner is one of the Institute of Physics’ most prestigious events each year, and is generally sponsored by a number of external organisations. We were able to find some information on the sponsors from 2015 to 2018 inclusive. Table 11.3 lists all the sponsors during this period. Notably, the **Atomic Weapons Establishment (AWE) [A]** was a sponsor in each of the four years, and was the sole lead or ‘laser’ sponsor in 2015. Indeed, in that year, its logo appeared on every page of the Awards Dinner website. Given that the AWE manufactures and maintains the UK’s nuclear warheads, sponsorship from this corporation raises especially serious ethical questions (see section 2.3).

Of 39 sponsors of the Awards Dinner over the past four years, 15% were arms corporations.<sup>c</sup> However, the proportion of sponsorship income from arms corporations would be significantly higher than this percentage due to the AWE’s prominent role in 2015. We were able to obtain prices for the sponsorship packages for that year. These ranged from £10,000+VAT for the Laser sponsor down to £1,000+VAT for the cheapest category. [10] While there was not enough data to accurately estimate the proportion of income provided by the AWE and other arms companies over the four years, it was apparent that it was significantly greater than 15%.

<sup>a</sup> The programme material prominently displays the logo of both Babcock and the Centre for Science Education. However, we could find no clear explanation of the way in which these organisations are involved.

<sup>b</sup> [A] indicates companies which, in this report, are categorised as being part of the arms industry. [F] indicates companies which, in this report, are categorised as being part of the fossil fuel industry.

<sup>c</sup> Each instance of sponsorship was counted separately. Hence, organisations which sponsored in more than one year were counted more than once.

<i>Year</i>	<i>Sponsorship category</i>	<i>Organisation</i>
2015	Laser sponsor [11]	<b>Atomic Weapons Establishment (AWE) [A]</b>
	Event sponsors [11]	Coherent, Fianium, Laser Lines, Litron Lasers, Photonics Technologies, Thorlabs, Toptica
	Table sponsors [12]	<b>AWE [A]</b> , National Physical Laboratory, UK Atomic Energy Authority, University of Cambridge, Imperial College London, University of Nottingham, University of Oxford
2016	Table sponsors [13]	<b>AWE [A]</b> , National Physical Laboratory, Science & Technology Facilities Council, UK Atomic Energy Authority, Aqua Cooling, Cavendish Nuclear, Kromek, SUPA, The Technology Partnership, Imperial College London, University of Nottingham, University of Oxford
2017	Table sponsors [14]	<b>AWE [A]</b> , National Physical Laboratory, <b>Thornton Tomasetti Defence [A]</b> , University of Cambridge, Imperial College London, University of Oxford
2018	Table sponsors [15]	<b>AWE [A]</b> , National Physical Laboratory, Endomag, Linkeos Technology, Pepsico, Plastipack, Science and Technology Facilities Council, University of Cambridge, Imperial College London, University of Oxford

*Table 11.3 – Sponsors of the Institute of Physics Awards Dinner, 2015-2018*

Regarding other awards that IOP makes, there are a number that come under the heading ‘Early Career Awards’. This includes the Bell Burnell Award by the Women in Physics Group. In 2016, this was worth £1,000 in prize money and was sponsored by the AWE. [16] In 2017, the award appeared to have no sponsors. We could not find clear information about whether the other awards under this heading have been sponsored.

Another example of an IOP event offering a large sponsorship deal was the International Conference on Women in Physics. In 2017, the sponsorship deals ranged from ‘platinum’ at a price of £10,000+VAT to ‘silver’ priced at £1,000+VAT. The platinum sponsor was **Northrup Grumman [A]** – one of world’s largest arms corporations, and heavily involved in nuclear weapons programmes (see appendix 21) – with six other sponsors in the lower price categories being scientific and academic organisations such as The Royal Society and UK universities. [17] From the incomplete information available on the website, it appears that more than half of the sponsorship income for the conference came from Northrop Grumman.

Of IOP’s smaller public events, a few are actually hosted by the AWE at its Aldermaston site in Berkshire. For example, in July 2019, it hosted a lecture entitled ‘The Science of

Armageddon' about the threat to Earth from asteroid strikes. [18] It is notable that neither this, nor any other IOP event on which we could find information, was focussed on discussing the catastrophic impacts should nuclear weapons ever be used again.

In summary, it clear that arms corporations – and especially the Atomic Weapons Establishment – provide a disturbingly high proportion of funding for IOP's most prestigious events. It is also of serious concern that, given IOP's expertise in nuclear weapons issues, there seems to be a lack of interest within the organisation in publicly discussing the risks of nuclear weapons as part of its public events.

### **11.5 Corporate membership**

The Institute of Physics does not have corporate members.

### **11.6 Other corporate links**

#### *Advertising in printed publications*

The Institute of Physics produces a number of regular publications which feature advertising from external organisations. *PhysicsWorld* is the members' magazine, published monthly. Seven editions from 2016 were available for us to survey. [19] We noted that *PhysicsWorld* does publish adverts from arms companies – in these issues, from **MBDA [A]** and **AWE [A]** – and they comprised approximately 4% of the total number.

#### *Advertising via jobs website*

As part of the Institute of Physics Publishing company, the organisation runs a website called *brightrecruits.com*. This site is a recruitment service for employers from many industrial sectors looking to recruit employees with backgrounds in physics and engineering. Due to the number of adverts and their high throughput, it was not practical for us to survey them. However, the site also offers enhanced advertising services such as featured job postings, banner adverts, featured employer or other bespoke options. [20] At the time we surveyed the site,<sup>d</sup> the featured employer was **MBDA [A]**, the 'Job of the week' was at the University of Vienna, and there were a number of featured recruiters (none of which were of relevance to this report). The featured employer advert cost £795 per week. [20] We observed that this advert was in place for a number of weeks.

#### *Board of trustees*

Out of the 19 trustees and board members of the Institute of Physics at the time of writing, it appeared that three individuals (16%) had strong connections to the arms industry having either taken up positions in arms companies or having worked extensively with the Ministry of Defence and arms industry-funded research. [21]

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<sup>d</sup> 13/04/17

### **11.7 Overall assessment**

Reviewing the information in this case study, we have given the Institute of Physics the assessment as shown in tables 11.4a and b.

	<i>Investments</i>	<i>School education programmes</i>	<i>Events</i>	<i>Other</i>
Involvement with arms corporations	Medium	Low	High	Medium
Involvement with fossil fuel corporations	Very high	None	None	None

*Table 11.4a – Corporate involvement ratings for the Institute of Physics*

	<i>Ethical issues covered in this study</i>
Positives	<ul style="list-style-type: none"> <li>• Environmental policies using an internationally recognised standard</li> </ul>
Negatives	<ul style="list-style-type: none"> <li>• Numerous financial links with the arms industry, especially the Atomic Weapons Establishment</li> <li>• Significant investments in fossil fuel corporations</li> <li>• No ethical investment policy</li> </ul>

*Table 11.4b – Positives and negatives for the Institute of Physics*

In terms of transparency, IOP publicly published some financial information about the issues of concern to this report. However, there were numerous gaps on the specifics in nearly all the areas we assessed.

The institute’s environmental policy and practices were thorough, and the only one of the organisations we assessed to reach an internationally recognised standard. Other professional institutions would do well to emulate IOP’s practices in this area. However, we were disappointed at the lack of a clear ethical investment policy.

IOP had numerous financial links with the arms industry. We found evidence of these links in, for example, event sponsorship, membership of the board of trustees, and school education programmes. Furthermore, the lack of an ethical investment policy coupled with a lack of data on investments suggested that such links were also likely to be significant in this area. Of particular concern was the prominent involvement of the Atomic Weapons Establishment – the manufacturer of the UK’s nuclear warheads – in IOP’s Awards Dinners, as well as other some other events. To have such a controversial corporation playing such a public role in these prestigious activities was especially disturbing.

We found financial links between IOP and the fossil fuel industry in one area, the institute’s investments. Despite the limited data available, it was clear that this connection was comparatively large.

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