THE FOUNDATION FOR SCIENCE AND TECHNOLOGY

DEBATE SUMMARY

Responding to a changing Arctic
The House of Lords Arctic Select Committee Report

Held at The Royal Society on 4th November, 2015.

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The hash tag for this debate is #fstarctic .
Audio files of the speeches are on www.foundation.org.uk .

Chair: **The Earl of Selborne GBE FRS**
Chairman, The Foundation for Science and Technology

Speakers: **The Lord Teverson**
Chair, House of Lords Arctic Select Committee
Jane Rumble
Head, Polar Regions Department, Foreign and Commonwealth Office
Professor Dame Julia Slingo DBE FRS DSc
Chief Scientist, Met Office

LORD TEVERSON Chair of the House of Lords Select Committee on the Arctic, after outlining the genesis of the Select Committee's report[1], explained that it had excluded defence matters and deliberately kept away from controversies about the causes of climate change and focused on the consequences of that change. He noted that the minimum extent of Arctic sea ice in September had already halved over the past two decades and the annual minimum volume of that ice had shrunk by three quarters over the same period. This trend had massive consequences now – both adverse and advantageous - not only for the eight countries bordering the Arctic Ocean and their population (some four million people, half of whom were Russian) but also for many other countries.

The Arctic Council, an international forum for dialogue between the eight Arctic States, has representatives from Canada, the Kingdom of Denmark (including Greenland and the Faroe Islands), Finland, Iceland, Norway, Russia, Sweden and the United States. Six international organisations representing Arctic Indigenous Peoples have permanent participant status.

Twelve non-Arctic countries have been admitted as observers to the Arctic Council. They are France, Germany, The Netherlands, Poland, Spain, United Kingdom, People's Republic of China, Italy, Japan, the Republic of Korea, Singapore and India. Nine Intergovernmental and Inter-Parliamentary Organisations have been given observer status and eleven non-governmental organizations are observers at Arctic Council meetings.

The Select Committee had found no evidence yet of an international scramble to open up the region to various forms of economic development (mineral extraction, sea routes, tourism). It judged that the potential for such exploitation was considerable but would be slow to take off because of the many challenges presented by the region and by the present ignorance of many of its unique physical and climatic aspects. Fortunately there was still time for the world to prepare for further exploitation – preparation which needed to include major research (especially into climate, oceanography and the fragile eco-systems) as well as the creation of appropriate institutional and regulatory frameworks to cover such matters as safety, search and rescue, and oil spill response.

Hitherto the UK's research interests in the polar regions have tended to focus more on the Antarctic than on the Arctic. Given the UK's proximity to the Arctic and the consequently greater direct potential direct impact on the UK (climatic and economic) of developments in the Arctic, it was important to correct this imbalance. The Select Committee welcomed the Government's 2013 Arctic Policy Framework but saw this as not going far enough.

The Committee's report accordingly contained 67 conclusions and recommendations designed to

[1] The House of Lords Arctic Select Committee Report www.parliament.uk/arcticcom

take matters forward. The Government's recently published response[2] broadly had welcomed these while not adopting all of them, such as the proposal for the appointment of a UK Arctic Ambassador to co-ordinate and drive forward the various strands of policy (unlike France, Japan, Poland and Singapore). The key message from the Committee was that what affects the Arctic would also affect the UK. Consequently the UK needed to up its game.

JANE RUMBLE outlined some of the important geo-political realities forming the context for an enhanced UK engagement with the Arctic and the key principles and approaches within the Policy Framework published in 2013. She pointed out that the Arctic was not a blank space. It was inhabited. It had an effective and constructive international governance regime through such agreements as the UN Convention on the Law of the Sea (UNCLOS)[3]. It had considerable traditional and non-traditional economic activity. Its area consisted almost entirely of governed and claimed space but there were still some "marine commons". The UK's interests in the region were strategic, economic, scientific, climate change, environmental protection, transportation and access. These derived from the fact that the Arctic was relatively geographically close to the UK and was inextricably linked to global processes which impacted directly on the UK. The key principles underlying the UK's policy approach were to respect the human dimension (to promote a well-governed region, in conjunction with indigenous peoples, providing safety and security in line with international law), an environmental dimension (to promote policies based on sound science with full regard to the environment) and a commercial dimension (to promote a region where only responsible development took place).

The Government had particularly welcomed the Select Committee's recommendations about increasing the UK's engagement with the Arctic, increasing Arctic science funding, focusing on climate change, a moratorium on high seas fishing, developing international standards for hydrocarbon exploration and supporting the EU application to have observer status at the Arctic Council. The UK would ensure strong participation in technical, scientific and political fora concerned with the Arctic. Already more than 75 UK universities and institutes worked on Arctic issues.

The Natural Environment Research Council's (NERC) current £15 million Arctic Research Programme was delivering valuable results. A new £16 million programme had been announced in July 2015. The Government has committed to building a new polar research vessel to be operational in 2019. The vessel although primarily for the Antarctic, would operate also in the Arctic. Internationally the Government's top priority remained for the region to be peaceful, stable and well-governed. It fully supported the Arctic Council as the main instrument for achieving this. At the same time the UK intended to develop bilateral agreements with the eight Arctic states and with non-Arctic states to generate collaborative opportunities for the benefit of the region. In parallel with these international initiatives, the Government intended to develop in the UK further educational initiatives to increase awareness of and engagement with issues affecting the Arctic region.

PROFESSOR DAME JULIA SLINGO drew attention to the major scientific challenges existing in the Arctic region. It was clear that big changes were taking place in the character and behaviour of sea ice – volume, area, the proportion of multi-year to first year ice and circulation. It was possible (but by no means certain) that by the end of this century at the height of the summer the whole region would be clear of sea ice. Already much of the multi-year sea ice would have disappeared making the region more vulnerable to extreme storm conditions such as were experienced in 2012. Scientists were increasingly aware of the fact that the Arctic sea ice was part of a highly complex climate system which was still not fully understood.

In her view the jury was still out on the question of how and to what extent sea ice changes in the Arctic directly impacted on UK weather. Advances in observations and modelling had improved our understanding of the Arctic and our ability to predict short-term variations and long-term changes. But further changes were likely in years to come as the planet continues to warm and these changes could have impacts further afield. We needed much more research to increase our understanding and knowledge about the many and varied influences on climate. She believed that the oceans, where water circulation changes result from changes to the sea ice melting regime, were the nub of the problem. Autonomous vehicles carrying out under-ice observations could make an important contribution to the input data for models of the region and global climate models.

During the discussion period there were questions about the reasons behind the interest being shown in the region by such distant countries as India and Singapore. It was felt that the nature of the changes in the region and the opportunities (as well as the dangers) created by those changes were global in their impact. Other more distant states understandably would share the UK's interests in and concerns about climate, scientific research, energy supply, shipping routes etc.

Many contributors noted the major success to date of insulating the successful international co-operation in the Arctic from wider geo-political tensions. But concerns were expressed whether this could continue. The recent developments in Ukraine had shown that Russia's willingness to operate within a framework of international law could not be taken for granted. And the regime of

[2] www.publications.parliament.uk/pa/ld201415/ldselect/ldarctic/118/118.pdf
[3] The Basel Convention (control of transboundary movement of hazardous wastes & their disposal) and The London Convention (& Protocol) also apply.

sanctions against Russia in the wake of its illegal Crimea annexation could have adverse consequences for research and other co-operation in the Arctic. The more that major countries outside the region became involved in the Arctic and saw their interests being directly affected by events in the Arctic, the more likely it was that friction and conflict might arise not only between those states but also between them and the eight Arctic States. And not all states interested in the region could be relied upon to give adequate weight to the concerns of the indigenous population.

Some contributors wondered whether greater involvement of "soft sciences" in Arctic region issues was needed and could help deal with such potential international problems.

Other points made in the discussion periods were:

1 The stability of the Greenland ice shield had not yet become a problem but, potentially, its impact on global sea levels could be immense. Moreover the effect of a global temperature rise on such ice sheets could be felt for centuries long after temperature had stabilised. There was still considerable unknowns about the behaviour of ice sheets;

2 It was important to remember that the consequences of permafrost warming could be significant for the indigenous populations in the Arctic as well as for global climate. Melting permafrost in the summer destabilised buildings, cut off transport links and might release significant quantities of methane, a potent greenhouse gas;

3 The Arctic region appeared to be changing from being a "taker" of the consequences of climate change to being a "maker" of climate change impacts;

4 Many comments were made about the costs and obstacles to exploitation of Arctic offshore sources of hydrocarbons (much research was underway, for example, about how to deal with oil spills when there was sea ice cover[4]) but it was suggested that, given the consequences for oil supplies of instability in the Middle East, it would be prudent to give greater priority to preparations for greater reliance on Arctic resources[5];

5 Changes of water temperature influence fish habitats (cod were seeking cooler waters by moving further north from the Labrador coast). Control of fishing in the high seas regions in the Arctic outside state control is an issue for Arctic governance;

6 The UK's potential contribution to developments in the Arctic extended well beyond science into areas such as oil, gas and minerals developments, law, finance and insurance. These interests could be better co-ordinated and could add to UK leverage in discussion about future options;

7 Was there a future direct role for Scotland (and other areas of the UK) in the Arctic given that Scotland's interests were considerable given its proximity to the region?

A film of China's interests in the Arctic was shown summarising the reasons for China's interest in the Arctic and the contribution which China was making to research and increased understanding of the region. The melting of the Greenland ice cap would impact on China because of their extensive coast-line and major developments on low-lying land made China especially vulnerable to rising sea levels. The opening up of new sea routes to Europe through the Arctic would benefit China through shorter journey times, reduced fuel consumption and reduced carbon emissions. Scientific research in the Arctic produced benefits for China as well as creating opportunities for international co-operation.

Sir John Caines KCB

[4] This issue is the subject of major oil industry research programmes - see for example www.statoil.com/annualreport2010/en/Sustainability/ManagingOurRisksAndImpacts/ResearchAndDevelopment/Pages/OilSpillResponseInTheArctic.aspx

[5] The Prudhoe Bay oil field developed by BP on the North Slope of Alaska has been a major contributor to US domestic oil production. Development was economic because of the scale of the field and the productivity of the wells.

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Reports:
The House of Lords Arctic Select Committee Report
www.parliament.uk/arcticcom

Adapting To Change: UK policy towards the Arctic
www.gov.uk/government/uploads/system/uploads/attachment_data/file/251216/Adapting_To_Change_UK_policy_towards_the_Arctic.pdf

House of Lords debate on the Select Committee Report on the Arctic
www.publications.parliament.uk/pa/ld201516/ldhansrd/text/151103-0001.htm#15110341000427

Discovering the Arctic
www.discoveringthearctic.org.uk

Organisations and companies:
Anglo American
www.angloamerican.com

Arctic Circle Conference
http://arcticcircle.org/speakers-2015

Arctic Council
www.arctic-council.org

Arctic Frontiers
www.arcticfrontiers.com

Babcock International Group
www.babcockinternational.com

Biotechnology and Biological Sciences Research Council
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Government Office for Science
www.gov.uk/government/organisations/government-office-for-science

Imperial College London
www.imperial.ac.uk

The International Association of Oil & Gas Producers (IOGP)
www.iogp.org

ITOPF
www.itopf.com/knowledge-resources/documents-guides/arctic-cold-climates/limitations-of-arctic-oil-spill-response/

Met Office
www.metoffice.gov.uk

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www.noc.ac.uk

Natural Environment Research Council
www.nerc.ac.uk

Oil Spill Response Limited (OSRL)
www.oilspillresponse.com/about-osrl/

The Royal Society
www.royalsociety.org

Scott Polar Research Institute
www.spri.cam.ac.uk

Science and Technology Facilities Council
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