The UK has been following the developments in Turkey closely and is taking steps to become a partner with Turkey amongst her traditional collaborations such as the USA, Germany and Japan. On 26 September 2011, the UK-Turkey Knowledge Partnership was signed between the UK Secretary of State for Business, Vince Cable, and Turkish Minister of Economy, Zafer Çağlayan. The concept for the Partnership was proposed by Lord Green during his visit to Turkey in April 2011 and it aims to promote new opportunities for collaboration between the research and education institutions, businesses and governments of both countries. The Partnership's stakeholders from the UK side are UK Trade and Investment, Science and Innovation Network and the British Council, which makes it possible to realise opportunities across a spectrum ranging from education to trade. One of the first activities to follow the launch was the UK-Turkey Higher Education

Institutional Partnership call by British Council, which will see 22 projects being funded that include universities and industry from the UK and Turkey.

In the previous 12 months alone, Turkey has received several high-level UK visitors. Vince Cable launched the UK-Turkey Knowledge Partnership in Sabancı University Nanotechnology Application and Research Centre as well as meeting a number of ministers and businesses in Turkey. UK Minister for Universities and Science, David Willetts, came to Turkey in April this year with the largest delegation of university vice-chancellors ever to visit Turkey. David Willetts met Nihat Ergün, Minister of Science, Industry and Technology where he announced the Knowledge Pathway visa scheme which will ease the visa application process for senior academics in Turkey.

While many positive developments are going forward, Turkey also faces some challenges in its growing research scene. In August 2011, the government passed a new decree law which sees changes to the election of members to the Turkish Academy of Sciences (TÜBA). While previously TÜBA was able to elect all its members, the new law will now allow one-third of the members to be elected by the Turkish Higher Education Council and one third by the science committee of the Turkish Scientific and Technological Research Council (TÜBİTAK). The Turkish government says this will increase the chances for a fairer election to the Academy although the change resulted in the resignation of around 50 Academy members and letters of concern from international science academies, including the British Academies. The 2010 UNESCO Science Report presents some challenges for Turkey in terms of lower enrolment in tertiary education, underdeveloped venture capital market and an insufficient number of high-growth firms.

. . . industry-financed R&D has been increasing . . .

. . .Turkey is about to appoint science attachés to the UK . . .

Turkey is about to appoint science attachés to other countries, which include the UK along with the USA, Germany, Japan and Korea, inspired by the UK Science and Innovation Network (SIN) too. With the activities of UK SIN and the recent Knowledge Partnership, UK has the chance to become a preferred partner for Turkey and make the best of the synergies that will arise through collaboration in science and innovation.

References

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ROCKET SCIENCE: UK AND RUSSIA IN SPACE

Dr Julia Knights
First Secretary, Science & Innovation Network (SIN) – Russia

The UK-Russia Year of Space 2011-12 has already delivered significant commercial space partnerships and cutting edge joint research. Russia's ambitious plans to gain 10% of the global space market by 2030, their "Glonass" global navigation satellite system to rival the US's GPS, a new spaceport in Russia's Far East and planned Russian missions to the Moon, Mars, Venus and Jupiter offer compelling reasons why the UK space industry & research community should take note.

From the launch of the first artificial Earth satellite "Sputnik 1" into orbit and first animal in orbit on "Sputnik 2" in 1957 to the first human manned space flight on "Vostok 1" in 1961 and first spacewalk in 1965 by Cosmonaut, Alexey Leonov, Soviet engineers and cosmonauts have made their mark in Space.

Russia is ambitious to modernise and regain its position from Soviet times as a space superpower, with its sights set on becoming one of the top three space nations through a target to increase its share of the global space market from 0.5% to 10% by 2030 – the same target as the UK's.

Russia's Federal Space Agency (Roscosmos) has set out how it will achieve this target

UK & Russia Heads of Space Agencies sign the UK Russia Year of Space in Feb 2011 in the presence of David Willetts MP in Moscow

in their "Space Development Strategy to 2030" – ambitious given Roscosmos's budget in 2012 is around one fifth of NASA's.

Specific plans include a £8.6bn Vostochny cosmodrome in Russia's Far East (funded separately from Roscosmos by Russia's Federal Target Programme) which, from 2018, should bring Russia independence in manned space missions from Baikonur, leased from Kazakhstan. Russia hopes to replace its 40 year-old Proton system for Soyuz spacecraft (which use highly toxic fuel)

. . . Russia is ambitious to modernise . . .

with next-generation Angara rockets to support manned missions to the Moon and unmanned missions to Venus and Jupiter.

Other projects include a £7.35bn "Glonass" global navigation satellite system to rival the US's GPS and joining the European Space Agency's "Exomars" project (a robotic mission to Mars in 2016 and 2018) – in which Russia hopes to provide spectrometers in 2016 developed by Russia's Space Research Institute (IKI) for studying atmospheric gases and traces of volcanic activity and subsurface water on the planet. In 2018, a Russian-built radioactive heat generator would be installed on the ExoMars rover, along with instruments. Another set of instruments could be installed on the stationary landing platform.

All these plans offer considerable opportunities for prosperity partnerships between the UK and Russia.

We recently celebrated the end of the UK Russia Year of Space (Feb 2011 to March 2012), designed by the Science & Innovation Network (SIN) – Russia, to highlight the complementary strengths of two leading space nations: including UK's strengths in innovative downstream and upstream space technology and as world number one in small satellites; and Russia's 40% share of global launches.

Timed to coincide with the 50th anniversary of Yuri Gagarin's pioneering flight into orbit, and agreed by the heads of both nations' space agencies (UK Space Agency & Roscomos) in the presence of David Willetts, Minister for Universities and Science, outcomes were delivered through joint lectures on cutting-edge Space topics under our Global Partnership Fund "UK Russia Space Science Café" lectures.

. . . considerable opportunities for partnerships between the UK and Russia . . .

So far, the Year of Space has delivered:

Commercial outcomes: a £6.5m satellite project to predict earthquakes funded by Skolkovo Space Cluster and University College London and £4.2m of British immersive theatre technology at the Moscow Planetarium (by British SME "Global Immersion").

Research outcomes include joint projects on space medicine and crew psychology for a manned mission to Mars (University College London and the Institute of Biomedical Problems), Fluids in microgravity research at the International Space Station (ISS) (Kingston University & Moscow Aviation Institute) and optical research for telescopes (Glyndwr University & Lytkarino Optical Glass Factory).

Cultural outcomes include the British Council's "Gagarin Week" last summer with the unveiling of a statue of Gagarin near Admiralty Arch in London, and a £2m exhibition on Russia's space achievements at London's Science Museum in 2013. Educational outcomes include Kingston University & YuriGagarin50's zero gravity experiment linking 100 UK and 100 Russian schools with the ISS.

The UK-Russia Year of Space has provided a strong platform from which to deliver prosperity and research partnerships with Russia. We aim to build on this through the visit of a senior Russian delegation to the Farnborough International Air Show this July at which we will see a revised roadmap for collaboration between our two space agencies agreed which could lead to commercial deals including one with Glonass. A separate Memorandum of Understanding to be signed between the UK's International Space Innovation Centre (ISIC) & Rutherford Appleton Laboratory (RAL) – Space, Harwell, Oxfordshire and the Space Cluster of Russia's $5bn new Skolkovo Innovation hub on the outskirts of Moscow will also bring opportunities for UK Space SMEs.

World-class scientific link ups are also set to continue through a new Space Science Café series led by SIN-Russia and funded by the Global Partnership Fund with match funding from a Russian philanthropic science NGO: the next lecture will consider the potential impact of solar flares on communication systems during London 2012 and Sochi 2014; another on Exomars and a further lecture on "cryogenics: developing next generation green fuels for space rockets".

SIN-Russia is also extending the UK's reach of space collaboration with the CIS countries through a new Global Partnership Fund Project "Harnessing World-class science in the CIS" and this year we will be holding Expert Innovation Roundtables with Space institutes in Kazakhstan in the areas of satellites for monitoring natural disasters and astrophysics.

To learn more about the work of SIN-Russia on space, please visit us at: http://ukinrussia.fco.gov.uk/en/about-us/working-with-russia/uk-russia-action/partnership-in-action/093-science-innovation/