



Submission to:

The House of Commons Business, Energy and Industrial Strategy (BEIS) Select Committee Inquiry into 'Post-Pandemic Economic Growth'

Response to the call for written evidence

Date:

For submission 17 August 2020

From:

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AIRTO's response:

AIRTO, the Association of Innovation, Research & Technology Organisations, on behalf of its members, has prepared the following response to the request for written input to The House of Commons Business, Energy and Industrial Strategy (BEIS) Select Committee Inquiry into 'Post-Pandemic Economic Growth'.

AIRTO represents the UK's extensive Innovation, Research and Technology (IRT) sector which employs 57,000 highly skilled people, has a combined turnover of £6.9Bn per annum and contributes £34Bn to UK GDP. The sector works with industry, government and academia to promote and implement innovation, and provide technical solutions to challenges and crises. AIRTO members have demonstrated their capabilities in the national response to the COVID-19 crisis, and stand ready to play a full, critical role in restarting and rebuilding the UK economy. AIRTO's members include independent Research and Technology Organisations (RTOs), Catapult Centres, Public Sector Research Establishments (PSREs), National Laboratories and some privately held innovation companies.

Rebuilding of the UK's economic activity as rapidly as possible is vital for the national recovery from the Covid-19 crisis. In addition, this rebuilding does present an unprecedented opportunity to make significant changes in the operation and output of UK industry that will address the challenges and problems that existed before the crisis, such as the productivity gap between the UK and competitor nations. Increased use of digital capability has already been an outcome of the lock-down, allowing people to work more flexibly in different ways which may present benefits for productivity levels, creativity and the environment. This boost to the use of digital technology must be supported and enhanced. Decreased levels of pollution during the crisis have shown the benefits of a cleaner environment. Restarting the economy in a greener, more sustainable way will continue this benefit, in line with previously announced Government targets. The UK's poor record in improving productivity must be addressed in short, medium and long-term plans to enhance the country's economic recovery and competitiveness. The aim for restarting the UK economy should be to "build back better" post crisis – and this will require significant support for industry.

AIRTO urges the Government to adopt an innovation-led strategy to rebuilding the economy post-pandemic.

Pivotal to successfully delivering on the Industrial Strategy, a commitment recently re-stated by government which AIRTO has welcomed, is the effective implementation of a new R&D Roadmap published by the Department for Business, Energy and Industrial Strategy (BEIS) – a [fresh focus which AIRTO has welcomed](#). In particular, AIRTO is highlighting a need to balance the current policy of skewing R&D resources in support of world-leading early stage research, by moving towards increasing support for innovation, market-led R&D, and direct technical support for industry. This need was outlined by AIRTO at the beginning of the COVID-19 crisis in our recent position statement on '[More D!](#)', and has now become more important and urgent as the economic consequences have unfolded.

Fundamental research should be focused increasingly on challenges facing society and the economy and solutions for dealing with them, such as understanding diseases, sustainable battery technologies and low carbon living etc. The IRT sector is the vehicle for working with industry to exploit this knowledge and translate it into innovation.

In the spirit of "building back better", AIRTO is advocating the innovation-led strategy involving government actions to:

- **Retain the levels of research** activity in our publicly funded institutions.
- Support **more development** activities.
- Invest in **increased innovation**.

Specific questions posed by the Inquiry:

What core/guiding principles should the Government adopt/prioritise in its recovery package, and why?

As highlighted above, the recovery provides an unprecedented opportunity to improve the performance of the UK economy, and specifically UK industry.

Improvements will be in the form of a faster digital adoption, “greener” and more sustainable operations, services and products, increased productivity and the scope for a more diverse workforce as a result of options for a flexible and more remote workforce. If these improvements can be sustained, the UK stands to emerge from the COVID-19 crisis as a nation with a nimbler, up-skilled workforce that operates more efficiently, and the country will thus be more competitive on the world stage.

Underpinning this improvement will be the need for an **innovation-led recovery**. This means that the government should prioritise support for industry which seeks to “build back better”, and also in the infrastructure that can provide the much-needed innovation support for businesses and the public sector. In addition, innovation-based start-ups and SMEs will need specific support to enable them to grow, create jobs and supply the market with new products and services.

This focus on ‘building back better’ does not replace the existing government initiatives such as the Industrial Strategy and the target to reach 2.4% of GDP being invested in R&D by 2027, but adds fresh focus and urgency to this plan.

In tandem with the innovation-led recovery is the need to examine the UK’s reliance on global partners for technology, and component and product supplies. The Covid-19 crisis exposed many of the hidden vulnerabilities and flaws in the supply chains upon which the UK heavily depends across a broad range of industrial sectors. This is a longer-term action that requires in depth assessment to enhance the UK’s resilience to future national or worldwide crises. The results of this activity will augment the current Industrial Strategy, and involve additional government encouragement and support for the necessary commercial decisions and supporting innovations.

There is a need for a coherent business and transition plan that addresses short-term necessities, but more importantly looks to the future where innovation realises an improved economy through competitiveness and productivity, combined with a move towards future sustainable ways of living. The government will have a key role as an early adopter/customer. It will play a role in managing capacity reduction where it becomes obsolete, with carefully managed measures to reduce damage in the transitions the country will experience over the next few years. This plan must give a very clear and consistent messaging to business, industry, investors and the public, for implementation over the coming five-year period.

In summary, AIRTO believes the government’s guiding principles must be based on combining the need for rebuilding the economy with existing and new national objectives such as:

- Increased productivity
- Digitalisation
- Zero carbon
- More recent medical imperatives
- Planned manufacturing and supply chain sufficiency
- Management of the transitions in workforce capacity and employment necessitated by ‘the new normal’, future directions to be taken by the UK economy and changed patterns of working.

Innovation will play a key part in supporting these principles.

How can the Government borrow and/or invest to help the UK deliver on these principles?

The government has a number of investment devices planned for businesses to access for the purposes of rebuilding the UK economy, and these should be focused where recipients have plans for improving their operations and product offering as discussed above. These investment devices include:

- Contracts
- Grants
- Loans
- Taking equity

Identifying the merits and appropriateness of each of these devices is important to ensure the right one is identified for each business. Additionally, there are two routes via which investment can be used:

- Direct investment in a commercial enterprise.
- Indirect investment in an innovation/technology provider for generic support.

The former route has a focused, specific outcome. The latter route provides support over an industrial sector and can be a more efficient use of public funding. Both routes are relevant to prioritising activities that support government strategies and targets, such as the development and commercialisation of innovations that contribute to the UK's net zero targets.

However, in providing support to industry, it is crucially important that any schemes do not burden industry with unsustainable debt at a time when it may already be weakened.

Public procurement should be recognised and better harnessed as a tool for driving innovation. A prime example of this potent role for public procurement was seen during the Covid-19 crisis, when the [VentilatorUK Consortium](#) was rapidly formed demonstrating the convening power of the IRT sector. In the final weeks of June 2020, the consortium was building an intensive care ventilator on average every 4 minutes, 24 hours a day, 7 days a week. A total of 13,437 ventilators were produced, ensuring availability for anyone who needed one for life-saving treatment and more than doubling the number of ventilators in the UK in just a matter of a few months!

This new example of exemplary best practice should be used as a model for future government action concerning high profile projects and programmes. The government should use its position as a procurer of new innovation, acting as the client for products and services, which will attract further industrial investment, and make financing more readily available for the supplier. Existing schemes, such as the Small Business Research Initiative, SBRI, could be expanded to achieve this.

In summary, the government should explore how best to support the range of organisations involved in rebuilding the economy. Specifically, for IRT sector organisations, there is an immediate need for balanced funding to finance both equipment and facilities for R&D, and generic programmes of work, so that the IRT sector can give industry the support it needs in an innovation-led recovery.

What measures and support will business need to rebuild consumer confidence and stimulate growth that is sustainable, both economically and environmentally?

Business will need to demonstrate that it is responsible for its own future, has strong future plans and potential, and is cognisant of societal needs and attitudes, which have changed during the progression of the crisis and lock-down. For many, environmental performance will increasingly be a key differentiator for customers. Again, this will be demonstrated by organisations willing to do things differently in process and product with innovation at the heart of their recovery plans. Government must have a clear and consistent message defining how it will support business in its recovery from the crisis. This clarity will allow businesses to plan with confidence.

In the specific area of regulation, the government should identify where improvements that could remove restrictions and increase confidence are possible and desirable, both economically and environmentally.

Lessons should be learnt from the confusion and frustration resulting in some areas from the constantly changing COVID-19 guidelines.

Whether the Government should give a higher priority to environmental goals in future support?

YES. The lock-down has demonstrated the benefits of an improved environment world-wide. This has reinforced the public perception of the benefits of setting and achieving environmental goals. The lock-down has also led to different, more environmentally acceptable ways of working because of reduced levels of commuting.

These two factors, together with the need to restart and rebuild the economy, present the opportunity to give a higher priority to environmental goals. Where practicable, government encouragement and support should be based on improved environmental performance of industry, both in its own activities and in its innovative products and processes.

Government should support innovation in the prioritised sectors, particularly those which can demonstrate how support would contribute to its goals such as achieving net zero carbon, and should reward achievements both financially and with public recognition.

Whether the Government should prioritise certain sectors within its recovery package, and if so, what criteria should it use when making such decisions? What conditions, if any, should it attach to future support?

YES, it should. Prioritising sectors within the recovery package should be based on the importance of them sector to the UK and its potential for growth and its international competitiveness. However, such assessments are unlikely to be possible for short-term actions.

In the medium and long-term, these selected sectors will depend on the government's Industrial Strategy, and inevitably will be those that show promise for the UK to become world-leading, building on strengths and capabilities, and offering scope for job creation.

Considerations for future support for sectors should also be based on the continuing importance of the sector to the UK economy, again, an element of government strategy. Considerations attached to any future support should include the commitment for an organisation to continue to be a part of the UK economy, and play its full part in national recovery. An important additional factor in rebuilding the economy is future ways of living and working. Addressing this will ensure the UK meets its own needs, but also increases its competitiveness in world markets.

How can the Government best retain key skills and reskill and up skill the UK workforce to support the recovery and sustainable growth?

Ensuring people have the right skills is fundamental to supporting employment and job creation. Rebuilding UK industry and Foreign Direct Investment (FDI) depends on having the ability to build a strong workforce with the right skills. These skills are becoming more advanced, and provision for retraining people in these skills will be an important part of the national recovery plan.

The IRT sector is a "breeding ground" for people skilled both in technology and in the needs and operation of industry. These skilled staff may continue to work in the IRT sector, supporting UK industry and attracting international business to the UK. They are also a key source of talent for high tech and innovative industries. Support for training by and within the IRT sector will provide upskilling of UK plc for the future.

Auditing the skills necessary to support an innovation-based recovery, in terms of numbers and geographic location, will provide the basis for effective planning of resource. This process must be based on a realistic view of how research, development and innovation work in the UK, and how it does and can in the future provide support for industry.

Young people entering the workforce in 2020, from secondary or higher education are facing a major challenge in securing employment and initiating careers. Existing training schemes from apprenticeships to graduate level programmes, postgraduate research positions and fellowships will be in huge demand. However, there is an opportunity to expand schemes to train these young people with STEM qualifications in the key skills for innovation and entrepreneurship. This involves imparting knowledge and skills in four key domains: finance, industry, government and research. AIRTO is a willing and ideally positioned catalyst to drive the interactions with government, industry, universities and the IRT sector to deliver a package of measures for building an innovation-ready workforce for the future.

The government should consider creating opportunities for UK employers to attract the talent they need to grow and prosper. The visa system for international talent will need review and reform to enable employers to gain access to the best global talent. Skills required for high-tech development, productisation and commercialisation should be accorded the same level of priority by government in its policies as those needed for research.

Is the Industrial Strategy still a relevant and appropriate vehicle through which to deliver post pandemic growth?

YES. As discussed above, the Industrial Strategy remains relevant and even more so now, as it constitutes an appropriate and important vehicle to deliver post pandemic growth. Its emphasis on clean growth, future mobility and digital/artificial intelligence have become even more vital as the economy rebuilds, if the opportunities that this crisis presents are realised. An increased emphasis on directly supporting industry with innovation, applied research, and technological support is important to increase the rate of recovery, improve productivity, and turn the current situation into the opportunity to “build back better”.

The target of reaching 2.4% of GDP invested in R&D by 2027 has become more of a challenge because of time and progress lost during the lock-down period (commencing on 23 March 2020), and the short- and medium-term ability of industry to invest. This means that the public investment in R&D must be targeted for maximum effect in both providing support and leveraging in industrial funding. An emphasis on more immediate results through near market needs and opportunities is needed if the 2.4% is to be achieved, with the use of public funding to support generic research and development that will underpin whole industrial sectors rather than specific companies. The IRT sector is ideally placed to undertake this generic work supporting wider groupings of industry with its applied research capabilities and its extensive industrial partner networks.

How should regional and local government in England, (including the role of powerhouses, LEPs and growth hubs, mayoralities, and councils) be reformed and better equipped to deliver growth locally?

AIRTO members are based all around the UK, and can play a role in helping to rebalance the economy by becoming innovation hubs in their local regions. As such, regional and local government is important but AIRTO does not consider that it is qualified to discuss its reform.

However, its view on the actions of regional and local government in England, to address post-pandemic growth, is that it will be key for all the relevant organisations to work together in a complementary way, making allowances for local priorities and conditions. This will require two actions:

- A clear strategy for support from central government.
- A clear definition of the roles of the different public stakeholders.

The government should seek to avoid overlap, redundancy and inefficiencies in the actions undertaken. Additionally, with respect to these actions, regular co-ordination between the public stakeholders will be essential.

Local skills audits, as discussed above, will also be relevant on a regional as well as a national level. Such audits, together with an understanding of regional resources, experience and culture, will provide important input to regional growth initiatives.

What opportunities does this provide to reset the economy to drive forward progress on broader Government priorities, including (but not limited to) Net Zero, the UK outside of the EU and the ‘levelling up’ agenda? What should the Government do to ensure that delivering on these priorities does not exacerbate the vulnerability of businesses, consumers and communities/workers that have been impacted by COVID-19?

The use of government support and investment to make progress on broader government priorities is an opportunity that must be addressed in plans for rebuilding the UK economy. It is a win/win opportunity. This will involve prioritising support for companies that seek to improve their performance and address

government priorities, which could include broad targets such as those for net zero carbon, and/or individual improvements in productivity.

Driving forward progress will make the UK more competitive for trading both with Europe and the rest of the world, and will enhance the innovation and technology that the UK can export particularly to countries outside of Europe.

The 'levelling-up' agenda must always be a consideration in government interventions, but it should be targeted to bring positive benefit to economically under-performing areas, rather than having a negative effect on the economically strong regions. It is important to note that AIRTO members are located throughout the UK, and provide innovation and technical support in all the UK regions.

The economic recovery of the UK is the key driver for government actions, and AIRTO's proposition for an innovation-led recovery takes advantage of the opportunity that this crisis and consequential strive for recovery presents. However, government actions and priorities must also be based on economic considerations, and decisions made taking account of both aspects (economic and innovative) ensuring the vulnerability of all stakeholders is considered, particularly for short-term and immediate actions.

In the long-term, the flexibility and resilience of the UK economy must be a key imperative for recovery plans. Government support will be vital in ensuring short-term financial gains do not compromise this imperative.

What lessons should the Government learn from the pandemic about actions required to improve the UK's resilience to future external shocks (including – but not limited to – health, financial, domestic and global supply chains and climate crises)?

The IRT sector has played a significant role in the response to the current crisis. However, this was largely through self-organising and responding to "expressions of interest". This inevitably took some time. The support of the IRT sector, as a part of the UK's resilience to future external shocks, would be more effective if the government has a clear understanding of the capabilities of the IRT sector (which are extensive), and can then call for an immediate response from specific organisations to address particular issues. AIRTO can assist government (and particularly BEIS) in preparing and maintaining a register of IRT sector capabilities.

The immediate government response to the pandemic (both the direct and indirect impacts) has been inconsistent and at times chaotic. There is a need for better anticipation and planning of major issues the UK could risk facing, and consistency of message and actions if such major issues actually occur. The pandemic has been an example of a shock to the world caused by an external factor. The complexities of impact were not foreseen in entirety, which has led to a delayed response. There has been an impact on a complex system of systems. More government investment into the study of complex systems is suggested, to improve the national readiness and resilience of similar shocks/crises occurring.

The vulnerability of supply chains was an obvious early outcome of the pandemic. The government must support all parts of the economy in reducing its dependence on over-optimised supply chains that have no capacity to cope with disruption. Additionally, there is a need to identify where sovereign self-sufficiency should be a part of national strategy.

What opportunities exist for the UK economy post Brexit and the pandemic for export growth?

The opportunities and challenges that stood at the beginning of 2020 relating to Brexit have not gone away. The Covid-19 crisis has detracted focus away from Brexit to some extent. It is important that the UK focuses sufficient attention on its strategy for managing a smooth switch from the transition period to new rules coming into place from 1 January 2021. Failure to ensure that this is a seamless process will result in disruption to business activities and important R&D collaborations.

The improvement of UK industry through an innovation led process of restarting and rebuilding will lead to enhanced competitiveness through both improved productivity and products. This will provide opportunities

for export growth. With the right support, the UK can take a worldwide technical leadership position in key areas such as renewable energy for example, building on its existing strengths.

To take full advantage of world markets, it will be important for the UK to have a refined view on what the world is predicted to need, and to match this to current and future UK capabilities. However, it will also be necessary for the country to remain flexible and agile in order to address changing circumstances.

In addition, the enhanced applied research, innovation and technical support capabilities of the IRT sector will increase the growth of its already significant export activities – a key factor in securing the UK's status as a world-leading "Science *and Innovation* Superpower".

What role might Government play as a shareholder or investor in businesses post-pandemic and how this should be governed, actioned and held to account?

As discussed above, one option for government to support a business is to take a shareholding in the company. As with any government investment, this should be assessed on whether there is a plan to move the company on from "business as usual".

There should also be the requirement that other types of support have been found to be unsuitable, and that the company's activities are strategic to the UK either commercially, socially or defence/security related.

AIRTO suggests that any such government equity holdings in commercial organisations are held in an "arm's length" body, run by experienced people who have a strong business track record rather than by those with a career in the Civil Service. Targets for the financial performance of this "arm's length" body should be defined, and its activities monitored against these targets. Early return of the equity holding to the private sector should again be a target, but government should work with a company's approval when they are planning to sell their shares in that company.

The overall aim for the government in making an investment in a business must be to strengthen its balance sheet without 'loading' it with additional liabilities.

Summary

The government is facing an unprecedented challenge of steering the post-pandemic economic growth. However, there is also the unprecedented opportunity to improve the operation and output of UK industry so that it not only recovers from the crisis, but also addresses the challenges and opportunities that existed before the crisis. These challenges include the need for adoption of digital technology, greener and more sustainable processes and products, and improved productivity. This opportunity to "build back better" enhances the Government's Industrial Strategy and targets set before the crisis, and will be highly dependent on innovation and technical support for industry. The extensive capabilities of the IRT sector will be a vital resource in this innovation-led recovery, and AIRTO is ready to work with the government, and specifically BEIS, to ensure that this resource is fully exploited in the restarting and rebuilding of the UK economy.

About AIRTO

AIRTO is the Association of Innovation, Research and Technology Organisations. Its membership comprises approximately sixty of the principal organisations operating in the UK's Innovation, Research & Technology (IRT) sector. The IRT sector has a combined turnover of £6.9Bn, employing over 57,000 scientific and technical staff (equivalent to the academic staffing of the Russell Group of universities) and, for comparison, it is significantly larger than the network of Fraunhofer Institutes in Germany both in size and its scope of activities. The sector contributes £34Bn to UK GDP. AIRTO's members work at the interface between academia and industry, for both private and public sector clients.

Members include independent Research and Technology Organisations, Catapult Centres, Public Sector Research Establishments, National Laboratories and some privately held innovation companies.

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