

Written evidence submitted by AstraZeneca (PEG0227)

Introduction

AstraZeneca is pleased to be able to respond to the Business, Energy and Industrial Strategy Select Committee inquiry into Post Pandemic Economic Growth. This is an issue of vital importance, and we believe that the life sciences sector can play a central role in strengthening the economy following the COVID-19 pandemic. The Life Sciences sector has always been strategically significant to the UK, generating an annual turnover of over £73 billion and supporting around 482,000 jobs. There are clear opportunities to grow this sector further, generating significant economic value to the UK and strengthening the economy and NHS's resilience against future shocks. Our submission highlights a number of areas that AstraZeneca believes will be important to delivering this recovery, with a particular focus on R&D, manufacturing, and the skills needed to create high quality jobs in the life sciences sector.

About AstraZeneca

AstraZeneca is the UK's largest science-led biopharmaceutical company, in the FTSE top 5 with 8,300 UK employees and a further 38,000 jobs supported indirectly. In 2018, we spent £1.3 billion on UK R&D and had sales to global markets of £5.1 billion.

Science and research are at the heart of what we do. Our new £980 million world class R&D centre in Cambridge reflects the importance we place on scientific excellence and our faith in the UK as a base for our science-based strategy. Our campus at Macclesfield is the UK's largest medicines development and manufacturing site. In Liverpool, we are proud to manufacture the vaccine used in the UK's annual childhood flu immunisation programme.

We are one of only a handful of companies to span the entire life-cycle of a medicine in the UK, from research and development to manufacturing and supply, and the global commercialisation of primary care and speciality care medicines.

AstraZeneca's Response to COVID-19

As a company, AstraZeneca is proud to have played a leadership role in the global response to the COVID-19 pandemic.

- At the outset of the crisis, AstraZeneca was able to source and provide half a million PPE masks to the NHS and our qualified medical staff volunteered to work with the NHS
- We have worked closely with the NHS, the University of Cambridge, and partners across the life sciences sector to design, build and operate a new laboratory for COVID-19 testing, which has enabled the delivery of over 600,000 tests to date.
- We are working on the use of existing medicines as therapies to address the effects of COVID, including having molecules progressing through the ACCORD clinical trials framework for COVID therapeutics. We are also developing mono-clonal antibodies that may have an application in treating the virus.
- We are investigating a candidate vaccine for COVID-19, in collaboration with the University of Oxford. Clinical trials are ongoing, and AstraZeneca has agreed to begin production of the vaccine ahead of these trials concluding in order to ensure there is no delay between a vaccine being approved and being made available to patients. AstraZeneca is building a number of supply chains in parallel across the world to support global access at no profit during the pandemic and has so far secured manufacturing capacity for two billion doses of the potential vaccine.
- AstraZeneca is committed to fair and equitable access to the vaccine and has reached supply and licensing agreements with GAVI The Vaccine Alliance, The Coalition for Epidemic Preparedness (CEPI) and the Serum Institute of India to supply the vaccine. We're committed to doing so at cost during the pandemic.

The principles underpinning the economic recovery

The UK's thriving life sciences sector already plays a central role in the UK economy, and the Government's COVID-19 recovery plan highlights the sector as one that will play a leading role in the recovery from the pandemic. The life sciences sector will be essential to the recovery process, both by providing significant economic value across the UK and by leading research into the medical advances that will support the health of the population and ensure resilience is maintained ahead of any future pandemics.

In order for the life sciences sector, and companies such as AstraZeneca, to be able to play its role, the Government should focus on the following principles that can underpin a successful economic recovery:

- **Investment in R&D to make the UK a world leader in science:** R&D investment, particularly in the life sciences, has been demonstrated to have a positive impact on GDP, and will be key in supporting the UK's economic recovery and resilience against future challenges such as a pandemic disease.
- **Support for life sciences manufacturing:** Boosting UK manufacturing capacity for advanced and next generation medicines is essential to support a significant sector of the economy – providing quality jobs, generating export revenue and enhancing the UK's ability to manage emergency situations
- **Creating skills for essential industries, like the life sciences:** This will help ensure the UK is a home for highly skilled industries and could play a part in providing new roles for workers in other sectors of the economy hit harder by the economic effects of the pandemic.
- **Developing an operating and fiscal environment that encourages investment in the UK:** This will ensure that sectors such as the life sciences continue to choose the UK as a home for new and existing development. The UK needs to become the easiest and quickest place in the world to start and scale an innovative life sciences business.
- **Continuing collaboration between industry, academia and Government to deliver a strong economic recovery:** COVID-19 has demonstrated the benefits of close collaboration between government and the life sciences sector. This needs to continue and be enhanced to help support a successful economic recovery from the pandemic.

We have taken each of these principles in turn, and outlined what can be done to support the economic recovery in each category.

Investment in R&D to make the UK a world leader in science

The COVID-19 pandemic has clearly demonstrated the benefits of having world-leading UK science and R&D based in the UK. AstraZeneca welcomes the commitments made by the Government to double the public sector component of national investment in R&D, which we believe will have a significant and positive impact.

The pharmaceutical sector is already the largest private investor in R&D in the UK, and additional support can help ensure that the UK can continue to be internationally competitive in this area and attract new investment in future. The Government has already committed to a number of policies that can achieve these goals in this area, and it should now ensure they remain in place when considering the post-pandemic landscape. These include:

- The Government should ensure that the commitments it made in the 2020 Budget to double investment in science, innovation and technology to £22 billion by 2024-25 are delivered as a priority.
- Similarly, the commitment to increase the rate of the Research & Development Expenditure Credit (RDEC) to 13% and review the scope of eligible R&D spend will help to stimulate research activity, and should also be introduced as a priority to help boost research-led growth in the economy.

COVID-19 has also demonstrated the public spiritedness of the UK population to “do their bit” and become involved in clinical research through world leading programmes like the RECOVERY and ACCORD trials. The UK has an opportunity to capitalise on this and make the UK the best place in the world to do clinical research, to bring new and innovative medicines to patients quicker. This will

require investment to make the NHS more research ready, particularly in the underlying healthcare datasets so crucially needed for research and driving efficiency in the daily operation of the Service.

Investment in R&D has clear and demonstrable benefits to GDP growth in the UK. Evidence from UK Research and Innovation suggests that: on average, £1 of public R&D investment generates around £7 of net benefit to the UK; every £1 of public spend leverages about £1.40 of private spend; and that private R&D investment sees an average return on investment to a business of about 20% p.a. and social returns two or three times this. ¹ Research from the Campaign for Science and Engineering (CaSE) has also found that public investment in research increases total factor productivity growth for industry, and that this effect is greatest in industries that themselves conduct significant R&D or report co-operative interactions with universities. ² This suggests that the UK should not only invest in R&D to support GDP growth, and to support further investment from the private sector, but that this investment should focus on sectors with demonstrable results, such as the life sciences that are already leading the way in terms of UK science spending.

Support for life sciences manufacturing

The COVID-19 pandemic has also highlighted the importance of having UK-based capacity to develop and manufacture pharmaceutical and other health-related products. While industry has been able to work with Government to expand capacity rapidly in many areas, this is no substitute for having long-term manufacturing capabilities led by the life sciences sector.

Advanced manufacturing represents a huge opportunity to drive productivity and sustainability in the UK's regions and contribute to the wider levelling-up of the UK economy as we emerge from the pandemic. For example, AstraZeneca's Macclesfield campus is the UK's largest medicines manufacturing site, where we export 50 medicines to 130 global markets and where we are pioneering the latest technology, including AI and robotics.

The UK has largely missed out on the benefits of manufacturing biologics medicines at scale and the high skilled jobs and supply chains associated with these. The UK must act now to create an environment to ensure it will not miss out again in attracting the next wave of investment to manufacture the next generation of medicines such as CAR t-cell and gene therapies, and emerging modalities like oligonucleotides. As demonstrated during the pandemic, being able to quickly scale up manufacturing capabilities for both existing and new products is essential to the UK's resilience in emergency situations. New, flexible manufacturing facilities would be better able to respond to future pandemics and also lead the way in ensuring the UK remains a leading exporter of medicines and medical products.

These goals in relation to manufacturing are reflected in the Life Sciences Industrial Strategy, which contains a strategic goal for the UK to attract ten large (£50 million-£250 million) and ten smaller (£10 million-£50 million) investments in new manufacturing within 5 years. Attracting this investment in the face of strong and growing global competition (including Ireland, Singapore, China, USA and most recently Belgium and France) will require targeted capital grants. We support the work undertaken by the Medicines Manufacturing Industry Partnership (MMIP) and echo their request for a Capital Grants Fund of up to 15% of the capital cost of a new facility, payable when construction is completed. A total allocation of some £450 million would be required to attract 10 large and 10 small manufacturing facilities over the next 5 years.

New facilities for innovative manufacturing would also not only support jobs, exports and improve supply chain resilience but, in their design, they should support the Government's sustainability agenda and net zero carbon target. The geographical location of new facilities would also likely be in parts of the UK outside of the London - Oxford – Cambridge "golden triangle" of life sciences research and so help in the desire for "levelling up" of economic activity across all of the UK.

¹ <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/science-and-technology-committee/balance-and-effectiveness-of-research-and-innovation-spending/written/90702.html>

² <https://www.sciencecampaign.org.uk/resource/CaSEUKScienceBaseReportBriefing.html>

In addition, we would like to see continued collaborative R&D for advanced manufacturing in the UK. We have valued the Industrial Strategy Challenge Fund, which is supporting innovation in areas such as continuous manufacturing, digital manufacturing and just in time clinical supply. This is exemplified by the establishment of the Medicines Manufacturing Innovation Centre in Scotland of which we are a founding partner. The Vaccines Manufacturing Innovation Centre at Harwell, now being accelerated as a result of the pandemic, is another excellent example of a UK Public Private Partnership to develop new manufacturing technologies in the UK and are all important areas of interest to AstraZeneca and the life sciences sector.

Creating skills for essential industries, like the life sciences

There is a significant risk of a pandemic-related rise in unemployment as different sectors of the economy recover at different rates. This would, of course, have a major impact on the rate of economic recovery in the UK. The Science Industry Partnership (SIP) 2030 Skills Strategy - developed in collaboration with the Office for Life Sciences - estimated that the Life Sciences sector has the potential to create approximately 133,000 jobs over the next 10 years, many of which would be highly skilled. This could be a potentially significant element of the economic recovery in terms of employment. However, it will require measures to be taken now to ensure that the UK has the right mix of skills to support new jobs in science, R&D and advanced manufacturing.

The Recovery Roadmap, a document containing recommendations for the post-COVID recovery produced by industry bodies representing the life sciences sector recommended that the Government convene a Life Sciences Skills Strategic Advisory Group to look at skills challenges. A body such as this could bring the Government together with industry, the NHS, academics and other experts with the task of 'horizon scanning' the skills and workforce needs that need to be met to support these 133,000 jobs across the sector. AstraZeneca would support the introduction of a body, which could work in tandem with the new Office for Talent that has recently been announced by the Government.

While such horizon scanning activity is an essential medium-term ambition, we also believe that there are some steps that should be taken immediately to help improve opportunities for younger people, in particular, to access good, highly skilled, jobs and training through apprenticeships.

The Apprenticeship Levy has already supported AstraZeneca to take on 159 apprentices nationally (as of September 2019). In Cambridge, the number of apprentices taken on by our business has grown from zero in 2015, to 55 today. We believe that there are a small number of reforms to the scheme that could quickly be introduced in order to drive further employment and growth following the COVID-19 crisis:

- Broadening the scope of the Apprenticeship Levy – for example, allowing it to be used for specific employer-led training without providers having to sub-contract – would help to address skills shortages in key disciplines of strategic importance, such as computational science, data management, toxicology and pathology.
- Reform should also look to eliminate problems specific to science companies. This includes the existing requirement for apprenticeships to include 20% 'off the job' training which creates a cost barrier for science companies that cannot absorb the sub-contracting costs of one person being out of the lab for one day a week.
- In time, the Apprenticeship Levy should also become a Training Levy, and all forms of accredited training should be eligible.

We believe that, if these issues with the levy can be addressed, AstraZeneca could potentially take on another 100 apprentices, in a variety of highly skilled roles, nationally per year.

Beyond apprentices, re-skilling of workers is another area where the Government should provide packages to support life sciences employers to take on new workers from other sectors, in order to train them to help fill the gaps identified in the Science Industry Partnership's 2030 Life Sciences Skills Strategy. This could also help to ensure that already highly skilled workers that do, unfortunately, become unemployed as a result of the pandemic can quickly find new good jobs.

Developing an operating environment that encourages investment in the UK, and creates resilience to future shocks and drives investment

Both the pandemic and subsequent risk of economic downturn have created significant uncertainty within the operating environment for many businesses, including the life sciences sector. Prior to COVID-19, the UK economy was already undergoing a significant period of change as we leave the European Union, and it will be important for businesses to have as much certainty about the UK's future direction on both Brexit and the post-pandemic recovery in order to encourage them to invest here in future. This investment, in turn, needs to be delivered in ways that builds the UK's resilience to future shocks such as the pandemic.

Across the life sciences sector, our priority is to ensure that patient access to medicines can continue uninterrupted. This requires a global supply chain that cross borders and regulatory jurisdictions. This supply chain is also essential to the resilience of the NHS, both in times of crisis such as the COVID-19 pandemic but also to ensure patients can continue to receive medicines and other healthcare supplies in a timely way. It is also crucial if the UK's operating environment is going to be an attractive place for life sciences investment, particularly in manufacturing, in future. In order to ensure that this can continue:

- The UK should work to ensure that both tariff and non-tariff barriers continue to be as low as possible – particularly for medicines, medical devices, and other healthcare-related goods – for both imports and exports of medicines and related goods.
- In terms of medicines regulation, the MHRA will be taking on many of the powers of the European Medicines Agency at the end of the transition period. The Government's *Medicines and Medical Devices Bill* is currently progressing through Parliament, which will give the Government the powers necessary to reform medicines regulations in light of the future relationship with the EU. While the shape of the future relationship is still unknown, the Government and the MHRA should work quickly to provide clarity on what, if any, changes are expected to be made to these regulations. AstraZeneca believes that the Government and the MHRA should work closely with partner organisations such as the EMA in future, in order to ensure as much alignment as possible and that medicines supply chains and medicines approvals can work as smoothly as possible.

Resilience to future shocks should also take into account the impact on health-related outcomes created by the COVID-19 pandemic beyond the impact of the virus itself. Cancer waiting lists, for example, have increased substantially as a result of the pandemic. This will undoubtedly have an impact on patient outcomes in future, and will create strain on NHS services with a knock-on effect on Government spending and the economic recovery. The Government's "levelling up" agenda will also undoubtedly be an important part of its strategy for the economic recovery. Health outcomes should also be a key consideration within this. Sir Michael Marmot's recent "Ten Years On" report³, commissioned by the Health Foundation and published in February 2020, demonstrates that health inequalities (including place-based inequality) remains a significant challenge – one which we believe needs to be tackled in order for the UK to both be resilient to future shocks and to have a strong economic recovery.

One part of the solution to this challenge is to ensure that UK patients and clinicians have access to the most innovative and effective medicines to treat disease as quickly as possible and improve healthcare outcomes. The UK is in a strong position to do this. The Voluntary Pricing and Access Scheme (VPAS), agreed between the Government and the life sciences sector, has set a cap on the overall growth of the medicines budget (with industry paying a rebate to the Government should this cap be breached). This gives certainty to the NHS when planning medicines spending. Despite this, however, the UK has fallen behind comparable countries in terms of the uptake of innovative medicines. That can mean that medicines that have been developed using UK research are not made available to NHS patients. This lack of uptake not only negatively impacts patients, it also makes the UK a less attractive prospect for pharmaceutical investment. AstraZeneca supports ongoing efforts to resolve these issues, such as the NICE Methods Review, but would welcome the opportunity to work closely with partners across Government and the NHS to bridge this gap following the COVID-19 pandemic.

³ <https://www.health.org.uk/publications/reports/the-marmot-review-10-years-on>

It's also important that the government recognize the importance of the wider investment environment on business decisions to invest. This includes things like access to finance, the regulatory environment and the delivery of crucial physical and digital infrastructure projects, as well as issues such as skills and access to markets mentioned elsewhere. Central and local government need to move more quickly on decisions related to strategically important infrastructure and local authorities should be empowered and where necessary, processes simplified to speed up decision making on infrastructure investment.

As well as supporting large businesses such as AstraZeneca to invest further in the UK, government should grow the package of support available to small and medium sized life sciences companies in the UK. Too often, innovative ideas which start life in our universities struggle to find the finance, facilities and regulatory support needed to reach scale in the UK.

Any sustainable recovery should also take into account the need to tackle climate change. At AstraZeneca, we have committed to achieving zero carbon emissions from our global operations by 2025. We are investing \$1 billion globally to achieve this, including through decarbonization and renewable energy initiatives. This agenda is a priority for AstraZeneca and we look forward to working with the Government, Parliament and other stakeholders to play our part in delivering a greener economy for the future.

Continuing collaboration between industry and Government to deliver a strong economic recovery

The UK's response to the COVID-19 pandemic has shown the benefits of strong collaboration between industry and Government and this approach should continue when developing plans to revitalise the economy during the recovery.

For the life sciences sector, processes such as the Life Sciences Industrial Strategy and Sector Deal have been important steps to help ensure that the right collaboration is in place to support its ongoing development. AstraZeneca also believes that standing discussion forums, such as the Life Sciences Council (which is co-chaired by our CEO, Pascal Soriot) are also hugely important to ensure that issues and challenges can be tackled in a constructive way. These bodies should continue to be a priority for Government when developing an economic recovery strategy.

In order to deliver the Government's levelling up agenda and ensure that the value and impact of sectors such as the life sciences can be felt around the country, this collaborative approach should also apply at a local level and take into account local government, the NHS and other partners. The Cambridge Biomedical Campus, where AstraZeneca's new global HQ is based, is a good example of how this might work in practice. At the Campus, large companies like AstraZeneca are working closely with local hospitals, the University, and a range of other businesses and enterprises on a series of collaborative projects that will create economic value and add to the UK science base. Government can support hubs like this further by delivering on infrastructure and simplifying local government decision making to speed up development decisions. This approach also allows the UK to compete with similar R&D clusters around the world, in order to attract investment, expertise and research funding.

Through closer collaboration between industry, national and local government, and groups such as Local Enterprise Partnerships, similar clusters can be developed across the country that draw on existing areas of expertise. For example, AstraZeneca has much of its UK manufacturing capability in the North West of England – a region which could become a globally competitive hub for advanced manufacturing with additional support from local and national partners. AstraZeneca also has more than 400 academic collaborations in a range of areas with universities across the country, which can also form the basis of new centers of excellence. Achieving this goal will require horizon planning and situational awareness from groups such as local enterprise partnerships in order to identify where such opportunities exist. It will also require coordinated action to ensure that any necessary infrastructure development can be fast-tracked to approval.

Conclusion

The UK continues to be an attractive place to do science based business but needs to improve in key areas to remain globally competitive and emerge better from the economic impact of COVID-19. A plan that has the life sciences sector at its heart, is highly capable of supporting a successful economic recovery. The life sciences sector is one that should continue to be seen as strategically important to the UK - one that can provide high quality jobs, improve the UK's science base, lead UK efforts to manufacture and export goods around the world, and help ensure the UK is as resilient as possible in the face of future pandemics or other shocks. AstraZeneca looks forward to working with the Government and other partners in this effort and is happy to discuss the proposals contained in this submission in greater detail.

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