

## Written evidence submitted by Magway (PEG0225)

### 1. Executive summary

- 1.1. Post-pandemic economic recovery will require significant Government investment into sectors, industries and businesses that have the potential for high growth. Particular attention should be given to those industries that will provide value broadly across the economy.
- 1.2. In providing this investment and support, the Government will have to prioritise some sectors. Priority should be given to those with high payback potential, broad economic impact, the potential to contribute to wider priorities (such as Net Zero), high export potential and built-in resilience.
- 1.3. Infrastructure will be a core part of supporting these businesses to ensure post-pandemic economic growth, from 5G networks through to delivery networks. Government commitment to building and improving infrastructure will be critical to the UK's post-pandemic recovery and growth.
- 1.4. A strong technical and digital skills base will also be crucial to supporting these sectors. Government must invest in building and maintaining this base, and also in ensuring there are the businesses that will hire from this skills base.
- 1.5. There is a chance to 'reset' parts of the economy to ensure that they are future facing and ready for 21st century challenges. This will be challenging and requires bold and decisive action from the Government.
- 1.6. Government should give high priority to environmental goals in future support and in a post-pandemic recovery package. Businesses, sectors and technologies that work towards Net Zero should be backed unambiguously.
- 1.7. The Government should be ambitious in its expectations for a post-pandemic recovery. This should not simply be about returning the economy to pre-pandemic norms, but rather reimagining how the UK can operate as a resilient, innovative and world-class economy.

### 2. About Magway

- 2.1. Magway is a groundbreaking, high-capacity delivery system that reduces congestion and pollution by eliminating delivery vans on highways and urban areas. Magway was founded in the UK in 2017 and is co-funded by Innovate UK

through both the 'Emerging and Enabling Technologies 'and the 'Driving the Electric Revolution 'competitions.

- 2.2. Magway revolutionises the way goods are transported between and around cities. Our parcel delivery system is safer, more secure, reliable and faster than current solutions. Using one metre diameter utility pipes and our proprietary linear motor and control technology, Magway is also significantly cheaper, more sustainable, and scalable. A single system has a capacity equivalent to 40,000 HGV N3 journeys a week, reducing congestion and pollution, inside and outside of our cities.
  - 2.3. Magway's system is able to deliver goods more reliably, with greater predictability and at a reduced cost, thus providing added resilience to UK supply chains. This offers an alternative to HGV and LGV transportation: Magway is able to dispatch an HGV worth of goods every thirty seconds. In turn this will remove the congestion and pollution of current transport solutions, as well as a reduction in the number of road traffic accidents caused by these vehicles.
  - 2.4. This new transportation system has huge potential positive impacts across the economy, from boosting small and medium sized businesses to bolstering British technological prowess. Improving logistics and the efficiency of supply chains will support the growth of businesses and boost the productivity and output of the wider economy. Magway offers a 21st century step change for commerce and delivery networks in the same way that the railways did in the 19th century.
3. What core/guiding principles should the Government adopt/prioritise in its recovery package, and why?
    - 3.1. The effects of the pandemic have been spread unevenly across the economy. The Government will inevitably need to support sectors that have been particularly hard hit. But it should not miss the opportunity to accelerate the development of high potential sectors, industries and businesses.
    - 3.2. The Government should use its recovery package to ensure that the UK's economy, infrastructure and workforce are geared towards the 21st century. This will mean backing British innovation in sectors and industries that are likely to deliver oversized returns. These returns may be one or a combination of economic, social and environmental. Particular weight should be given to innovations that provide returns and significant benefits across multiple sectors.
    - 3.3. The pandemic has already reshaped parts of the economy. For instance, e-commerce has grown rapidly. Some estimates suggest that it has grown from c.5% of retail sales to as high as c.40% in some cases [1]. The Government should be willing to lean into these changes in consumer behaviour, backing the

businesses that have emerged from this shift as well as those businesses that support new and growing sections of the economy.

3.4. The Government must also be cognizant of the fact that the UK will not be alone in planning for its recovery and that other nations will be seeking to attract the highest potential industries and businesses to support their own economic recovery and growth. The Government must be bold in its measures to retain and support high potential British businesses, as well as the best businesses from around the world. A guiding principle when developing any recovery package should be for the UK to emerge stronger and more innovative than it was before the pandemic struck.

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

4.1. The Government must be willing to invest in the sectors and businesses that will drive the UK's post-pandemic economic recovery and growth. This must particularly be the case for those that will provide broad value across the economy.

4.2. Investing in these sectors delivers various benefits for the UK.

4.3. First, the businesses in these sectors are likely to be those that are significant tax contributors to the Exchequer. Supporting the creation and success of these businesses will deliver tax revenue for the Government to use in supporting other sectors and providing essential public services.

4.4. Second, these businesses create high paid, high skilled jobs that are not vulnerable to automation. These jobs attract and retain high skilled workers who are also likely to be significant tax contributors to the Exchequer.

4.5. Third, these sectors are likely to be those that develop and deliver products and technology that will be used around the world. This in turns boosts the UK's soft power, which will be of particular importance as the UK, outside of the EU, establishes its place in the world as a home of expertise and innovation.

4.6. Finally, the products and technologies that these businesses and sectors will develop are those that will help to solve the major policy changes facing Governments around the world, from decarbonisation to aging populations. The UK would receive a significant return on investment by supporting these companies.

- 4.7. As well as investing in these sectors, the Government must invest in the infrastructure that will allow these sectors and businesses to thrive. These investments must be made in line with wider Government priorities, such as decarbonisation. They must also look to a future shaped increasingly by automation.
5. Whether the government should give a higher priority to environmental goals in future support?
- 5.1. The Government has been clear that it gives high priority to environmental goals, notably through the continued commitment to Net Zero by 2050. The Prime Minister has endorsed a “whole systems approach” to achieving this goal.
- 5.2. We at Magway believe that this is absolutely crucial, and agree strongly with the Council for Science and Technology’s recommendations for how this might be achieved [2].
- 5.3. Particularly we agree that the Government must use both mature technologies as well as facilitating the “rapid pull through of emergent technologies”. The Council recommends “a bold, coherent, mission-driven programme of public sector R&D investment, coordinated and co-designed with industry to support and derisk technology development, initial deployment and scale-up” [3].
- 5.4. A programme such as this would support businesses with innovative technologies that can contribute to achieving Net Zero, such as Magway, to have maximum positive impact. If the UK wants to lead the way in reaching Net Zero, and developing the companies and technology that will help us get there, then action such as this is essential.
- 5.5. For instance, 23.5% of UK CO2 is emitted directly from road transport, of which a third is from commercial vehicles. Magway’s technology is zero emission and can be powered using renewable energy, thus offering significant scope to reduce UK CO2 emissions. Not only would this contribute to Net Zero goals, but it would also have significant positive health impacts: between 28,000 and 35,000 people die prematurely in the UK each year because of air pollution [4].
6. 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?
- 6.1. The Government must take a two-track approach to prioritising sectors within its recovery package.

- 6.2. As we have mentioned, the economic impacts of this pandemic have not been spread evenly. Some sectors have been decimated. It is right that, where these sectors would otherwise be strong and sustainable, Government supports them through this extraordinary challenge.
- 6.3. But the Government must have an eye to sustainable future growth, as well as survival. That is why we have argued, and we reiterate, that the Government should support the innovative, high potential sectors and businesses that will help the UK to emerge from a post-pandemic recession as a stronger and more resilient economy.
- 6.4. In doing this, the Government should use the following criteria:
  - 6.4.1. **Payback potential** - The Government should pay close mind to the likelihood of payback from any potential investment. Priority should be given to investments that have high likelihood of payback.
  - 6.4.2. **Broad economic impact** - Investment should be in sectors and businesses that will have a positive economic impact on the wider economy, whether that is by providing services with multiplier effects, developing world-leading infrastructure or by some other means.
  - 6.4.3. **Contribution to wider priorities** - Any potential investment that contributes to broader Government priorities, such as Net Zero and the 'levelling up' agenda, should be prioritised.
  - 6.4.4. **Export potential** - It is important that potential investments have strong export potential so as to boost UK PLC and also to boost the UK's soft power around the world.
  - 6.4.5. **Resilience** - The Government should look to build for future resilience to shocks, and sectors and businesses that demonstrate high resilience should be prioritised for potential investments.
- 6.5. Potential investments that score highly on several of these criteria should be high priorities for the Government's post-pandemic economic growth package. Government must not be shy about backing the highest potential sectors and businesses in the UK.
7. How can the Government best retain key skills and reskill and upskill the UK workforce to support the recovery and sustainable growth?
  - 7.1. The Government must look to build and retain a skills base that provides the necessary talent for a forward-looking post-pandemic economy. This skills base

must have high levels of technical and digital competence, as well as a creative mindset. So it will be crucial that investment is made in the provision of STEAM skills, both for young people but also for those who are reskilling post-pandemic.

- 7.2. In building and maintaining this skills base, the Government must also seek to ensure that there are sufficient jobs to soak up a skilled workforce. The Government can do this by supporting and investing in high potential sectors and businesses, and also by creating a business environment that incentivises growth and innovation.
  - 7.3. We have seen first hand the impact that this can have on retaining key skills in the UK. Some of Magway's team are at early stages of their careers, and have chosen to stay in the UK to work on groundbreaking, high potential technology despite having the option to take their skills abroad.
  - 7.4. Government should also consider the options for pre-tertiary education internships and apprenticeships in highly technical sectors. Again, we have seen the huge positive impact that this can have. Magway offered a year-long paid internship to a student who was resitting their A Levels. With this experience he was offered a place at the Dyson Institute, arguably the most sought after engineering undergraduate programme in the UK.
8. 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?
- 8.1. In many ways, the whole structure of society has been challenged by COVID-19 pandemic. How people work, shop and entertain themselves have changed dramatically, and the country as a whole has reflected on its values and priorities. Government in turn has an opportunity to consider where changes and resets should be made, and how the country can operate effectively in a post-pandemic environment.
  - 8.2. For instance, with reduced traffic throughout the pandemic society's tolerance for congestion and pollution has been reduced. There is a chance to rethink urban planning and concentration in urban centres. Technologies such as Magway allow for lower housing density, more green space and safer environments for pedestrians and cyclists by taking vehicles (especially large commercial vehicles) off the road.
  - 8.3. To reach Net Zero by 2050 will require not only comprehensive action by the whole of Government, but also fundamental changes to parts of economy and

society. There is significant sense in using the post-pandemic economic recovery package to kick off some of these changes.

- 8.4. This will inevitably be difficult. As parts of the economy shift, businesses will need to adapt and some will either fail or be beaten by new, innovative challengers. This will displace jobs and it will create new ones. But this has always been the case, and is how innovation and technological revolutions take place. There is much opportunity on the other side of any crisis.
  - 8.5. As we have previously noted, we wholeheartedly agree with the Council for Science and Technology's call to action in bringing forward innovative technologies for scaling to reduce carbon emissions [5]. The Government should be bold and back the sectors and businesses that will support the delivery of wider Government priorities, such as Net Zero.
9. 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)?
- 9.1. As we have submitted, the impact of this pandemic has not been spread equally across the economy. In this instance businesses that are less exposed to face to face human interaction, such as software businesses, have fared much better than those that are reliant on face to face human interaction.
  - 9.2. To prepare the wider economy for future external shocks, the Government should support the development of sectors, technologies and businesses that are demonstrably resilient to multiple forms of external shock. This should especially be the case for sectors that serve as backbone for and multiplier of the broader economy.
  - 9.3. In the case of sectors, such as transport, that serve the broader economy, the Government should also look to businesses and technologies that allow for easy scaling down (as well as up) of operations without financial failure. This will help to protect against the collapse of supply chains in the face of future external shocks.
  - 9.4. We believe that Magway is an example of a business and technology that demonstrates resilience to future shocks. Our technology and network is easily scalable and can operate profitably at >6% capacity (at 20% capacity the Benefit to Cost ratio is 2 when compared to HGVs operating at 100% capacity and efficiency). It is also much less reliant on human interaction than traditional solutions and is resistant to adverse weather conditions.

- 9.5. Support for businesses and technologies such as Magway will be an important plank of Government action to improve the resilience of the wider economy to an array of external shocks.
10. What opportunities exist for the UK economy post Brexit and the pandemic for export growth?
- 10.1. The UK remains a home for the development of innovative technologies and the creation of brilliant businesses. There is a significant opportunity for the Government to support UK businesses to export their services and products internationally.
- 10.2. For instance, Magway is a new and emerging technology which reflects the UK's ability to support revolutionary industries. The challenges of congestion, pollution and road safety combined with growth in online sales and urbanisation are not unique to the UK. They are shared by many other countries that are equally focused on addressing them. This presents a huge opportunity for the UK to position itself as world leaders in this space and to create a substantial export market for installation and operation of Magway systems.
- 10.3. To do this, the Government must work in partnership with industry. It is crucial that the Government champions British businesses to support them in exporting their products and goods around the world. Support from the Government to export will be an important part of retaining a solid business base in the UK.
- 10.4. It is likely that export hubs such as sea and air ports using traditional freight models will remain less efficient as a result both of the post-pandemic 'new normal' and because of likely border delays as the UK formally exits the EU. The Government will need to back businesses and technologies that offer solutions to speed up and make this process more efficient. This will allow for British businesses to export in greater volumes.

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