HM Government

HM Government Response to Sir Patrick Vallance's Pro-Innovation Regulation of Technologies Review

Green Industries

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Introduction

At Autumn Statement 2022, the Chancellor announced a programme of work to advise how the UK can better regulate emerging technologies, enabling their rapid and safe introduction.

The aim of this review is to establish the UK as the best regulated economy in the world in key growth sectors, ensuring that industry and investors have the certainty then need to drive innovation, investment and growth through anticipating new developments in emerging technologies.

This work has been led by Sir Patrick Vallance, the Government Chief Scientific Adviser and National Technology Adviser.

Sir Patrick's report, covering green industries and technologies, is the second to be published from this work programme. The UK's green industries will be critical to achieve our legally binding climate commitments, support our energy security and drive sustainable growth. It is therefore vital that the regulatory environment supports innovation and investment.

Two leading experts – Jane Toogood and the Rt Hon Chris Skidmore MP – supported Sir Patrick Vallance for this green industries report, working closely with industry to identify barriers to innovation and investment in green industries. The government is grateful Sir Patrick for his report, and to his advisers for their comprehensive work to inform the recommendations.

The government accepts all of Sir Patrick's recommendations. The government's response to this report sits alongside the Net Zero Growth Plan and Energy Security Plan, launched on 30 March, as part of the UK's drive to support its green industries. This will help deliver energy security, achieve our net zero target, and drive green growth.

Response to Recommendations

1. Innovation and investment will both play a vital role in our climate and environmental ambitions from net zero to water, air and biodiversity. The government is committed to ensuring that well designed, smart regulations support our net zero and environmental targets, guiding investment and enabling sustainable growth.

2. Government is already pushing forward a range of activities to ensure that the regulation of UK green industries and technologies provide space for innovation and drive investment into these key areas of UK growth. For example, through the Genetic Technologies (Precision Breeding) Bill, we are unlocking biotech to deliver environmental and productivity benefits in agriculture, and we have set out in the Green Finance Strategy update, published today, how we will better link environmental and financial regulations to unlock the UK's deep capital markets to grow our green financial sector, deliver decarbonisation and support nature recovery.

3. The government accepts all the report's recommendations and sets out how we will implement them below.

Recommendation 1 – Regulator capacity and skills

The government should conduct a rapid review to ensure that relevant regulators, including the Environment Agency, Health and Safety Executive, the North Sea Transition Authority, the Marine Management Organisation, Natural England and Offshore Petroleum Regulator for Environment and Decommissioning are sufficiently resourced, and have the required technical expertise, to enable quick and effective decision-making on key net zero infrastructure projects. This will also need to link to planning permission processes. Clear objectives and timelines for decision making by regulators should be part of the review. This review should conclude by the autumn.

Response

4. Regulators play a vital role in ensuring the UK can build the infrastructure we need to achieve our net zero targets and provide certainty to investors. The experience, expertise and professionalism of our regulatory bodies is a key factor in making the UK an attractive investment destination. The government has already made a proactive start on this through its review of the Nationally Significant Infrastructure Planning (NSIP) system. The government's NSIP action plan focuses on a number of areas to deliver infrastructure quickly, including a focus to increase the skills and capacity of key consultees making it easier and quicker for them to input into the process, to make it faster and more efficient for decisions to be made.

5. The government will work with key regulators to review their capacity and capability to ensure they are able to support the UK's transition to net zero and that businesses and investors can seize upon the investment and economic opportunities the transition presents. This review will conclude by the Autumn.

Recommendation 2 – Grid connections

The government should continue to work with Ofgem and network companies to reduce connection timescales by both improving the connection process and by releasing network capacity. This should be pursued alongside a series of related reforms to the speed and efficacy of the planning system, as set out in this report and elsewhere. We suggest that clear timelines and objectives for decisions are put in place.

Response

6. Reducing connection timescales is a high priority for government. As the volume of green infrastructure grows through the transition to net zero, it will be critical for projects and technologies to connect to the grid quickly to support the UK's energy security and decarbonise our economy.

7. The Energy Security Plan announces that, this summer, the government will publish an action plan to accelerate grid connections by releasing network capacity and transforming the connection process. It will build on work by the Electricity System Operator (ESO), Energy Networks Association and network companies to identify solutions to improve the connection process and better manage the connections queue for both transmission and distribution networks. This includes government working with Ofgem, network companies and connection stakeholders to support the ESO's GB Connection Reform project, with a consultation expected to be published by the ESO in June 2023. The ESO is also working to improve management of the transmission connection queue.

8. Significantly speeding up delivery of new network capacity will also help to reduce connection timescales going forwards. Key to this is the review the government has asked the Electricity Networks Commissioner, Nick Winser, to lead on speeding up delivery of electricity transmission infrastructure. Winser will finalise his recommendations early this summer, proposing a comprehensive plan for reform across the end-to-end process to accelerate delivery. The government has already published an action plan setting out reforms to streamline and speed up the NSIP consenting process – including introducing full cost recovery for key statutory consultees through the Levelling Up and Regeneration Bill. Further details of some of the key reforms will be consulted on in the Spring.

Recommendation 3 – Future Systems Operator

Building on the creation of a Future Systems Operator, the government should establish a regulatory and institutional framework enabling strategic planning of the key energy infrastructure. The approach should be data driven and include an early plan to facilitate the cost-effective scale-up of net zero technologies.

Response

9. Developing the low-carbon energy infrastructure needed to deliver the UK's net zero and energy security ambitions is important and complex. The government's approach to strategic spatial planning must consider all facets of the natural environment, economic development, and potential uses of land and marine space, in addition to the vital energy infrastructure needed to achieve energy security and net zero. This is an opportunity to drive levelling up across the UK and enable clearer planning decisions to be taken where there is competition for space. Work on a land use strategy and marine spatial prioritisation is already being taken forward; the framework for strategic planning of energy infrastructure should be taken forward as part of this wider work. The establishment of the Future System Operator (FSO), alongside wider reforms to the regulatory and institutional framework for energy such as the Review of Electricity Markets Arrangements (REMA) and planning at regional and local levels, provide an opportunity to support government in undertaking this.

10. The government expects the FSO to be a data-led organisation and we agree that the FSO should adopt a data-driven approach to its strategic planning of the electricity and gas networks as well as in its advice to government. This should include consideration of the use of data-driven modelling for key energy infrastructure as part of its work on the role of data in the energy system.

11. In view of the rapid decarbonisation and decentralisation of generation and demand as we transition to net zero, we expect that network and system operators will increasingly co-ordinate system operation activities and to ensure whole system outcomes. Distribution Network Operators (DNOs) and the ESO are taking steps to do so, including through the Energy Networks Association 'Open Networks' project. One of our actions in the 2021 Smart Systems and Flexibility Plan calls on DNOs to increase competition for services on the networks and encourage greater coordination between the transmission and distribution boundary. Ofgem has also recently published a consultation on 'the future of local energy institutions and governance' and is likely to publish a decision on any potential changes to local governance arrangements later this year.

Recommendation 4 – Clean hydrogen

To deliver the benefits associated with clean hydrogen, the government should continue to work quickly to establish an effective regulatory system. This should include ensuring that future cross-border trading in low carbon hydrogen is facilitated without compromising on standards.

Response

12. The government sees low-carbon hydrogen as a critical component of our broader strategy to deliver net zero and energy security as well as to create economic growth. We have set out plans to deliver up to 10GW of low carbon hydrogen production capacity in the UK by 2030, subject to affordability and value for money. We agree that an effective regulatory system will be important to enable this. We will continue to engage with regulators and other competent bodies through the Regulators' Forum to assess regulatory needs across the hydrogen value chain.

13. Since 2019, the government has supported the supply of renewable hydrogen through the Renewable Transport Fuel Obligation. The forthcoming Low Carbon Fuels Strategy will set out the government's vision for low carbon transport fuels to 2050. The Strategy will identify actions to enhance low carbon fuel security of supply and boost investment. Government is also supporting hydrogen for transport through research, development and demonstration programmes. Following a successful first year, the next phase of the Zero Emission Road Freight Demonstrator (ZERFD) programme will demonstrate hundreds of new zero emission HGV's, including hydrogen, at scale on UK roads. We will also fund projects as part of the Tees Valley Hydrogen Transport Hub and provide £30 million to support buses and refuelling infrastructure in the West Midlands through the Zero Emission Bus Regional Areas (ZEBRA) fund.

14. To expand support for investment in hydrogen projects and ensure that the hydrogen they produce is sufficiently low carbon, the government has introduced the Low Carbon Hydrogen Standard. Producers applying for government funding from any government schemes and policies that have adopted the standard are expected to comply with the requirements set out in the guidance in order to receive support.

15. The government is currently consulting on a low carbon hydrogen certification scheme which should support cross-border trade in line with UK standards. The design of the certification scheme will consider how to enable verification across all sectors, upholding relevant sectoral standards.

Recommendation 5 – Carbon Capture, Utilisation and Storage

The government should work with international partners to remove regulatory barriers to the cross-border movement of CO_2 to help ensure that the UK can maximise the economic potential of providing CO_2 transport and storage services.

Response

16. The UK's geography and technical expertise from our offshore industries means that we are extremely well placed to capitalise on carbon capture, utilisation and storage

(CCUS) which will be critical for the transition to net zero emissions by 2050. At Spring Budget 2023, the Chancellor announced the government will provide up to £20 billion funding for early deployment of CCUS to help meet the government's climate commitments. This unprecedented level of funding for the sector will unlock private investment and job creation across the UK.

17. To maximise these growth opportunities, and to support global progress towards net zero emissions, we recognise the importance of ensuring the UK is an attractive destination for long-term storage of carbon. Last year the government consulted on developing the UK Emissions Trading (ETS) scheme, including potential plans to include CO2 transported by non-pipeline means (e.g. rail, road, sea) in the UK ETS. The government will respond to this consultation in the Spring and explore opportunities to engage our international partners on this issue.

Recommendation 6 – Heat pumps

The government should amend current planning regulations to enable the installation of heat pumps within one metre of another property.

Response

18. The government wants to encourage the uptake of heat pumps by making them easier to install and removing regulatory barriers, whilst ensuring that their installation has minimal impact on the wider environment. We have already seen incredible innovation in heat pump technologies over the past decade, particularly in efficiency and noise reduction, and we must ensure that regulations keep pace with this progress.

19. The Department for Energy Security and Net Zero has commissioned an independent review of heat pump planning rules and noise emissions, the outcome of which will inform whether the existing permitted development rights are fit for purpose and in line with advances in heat pump technology. Subject to the findings of the review, to be published in the Summer, we will consult on proposed changes to permitted development rights in England. We will also work with the Devolved Administrations to share evidence on best practice.

Recommendation 7 – Electric vehicle charging infrastructure

The government should drive the delivery of EV charging infrastructure by creating a clear expectation that local authorities will plan for and deliver charging infrastructure. The government should ensure that the Rapid Charging Fund is implemented in a way that incentivises competition and delivers charge points to motorway infrastructure across England, and consider whether any changes to the planning system are necessary to facilitate the rollout of EV chargers.

Response

20. The UK has made significant progress in the roll out of electric vehicles (EV) and the associated charging infrastructure. The government and industry have supported the installation of over 38,700 publicly available charging devices including more than 7,400

rapid devices – one of the largest networks in Europe. The Zero Emissions Vehicle (ZEV) mandate will further support the growth of the UK electric vehicle sector. The government is focusing our intervention on two key areas where we most need an accelerated pace of rollout, and where the business cases can be particularly challenging: high powered chargers on the strategic road network and local on-street charging.

21. As set out in the EV Infrastructure Strategy, local authorities are fundamental to successful charge point rollout, particularly for the deployment of widespread on-street charging. They are ideally placed to identify the local charging needs of residents, fleets and visitors.

22. The government has established support for the local delivery of charging infrastructure through the Local Electric Vehicle Infrastructure (LEVI) Fund. LEVI will provide capital investment for infrastructure as well as funding to equip local authorities with the skills and ambition to scale up their plans when it comes to their charging strategy. Ahead of the full roll-out of the scheme the LEVI Fund is already providing almost £60 million in public and private investment to 25 different local authorities across England, and £8 million of capability funding for 81 tier one local authorities. This builds on the existing On-Street Residential Charge Point Scheme (ORCS), which has a total funding of £37 million in 2022-23. 4,000 charge points have already been installed under ORCS with a further 10,000 in the pipeline.

23. We are also considering options for introducing a unified consent process for installing EV charge points, including consideration of a streamlined process for obtaining both the planning permission consent and the highways consent for the traffic management works at the same time. We consulted on this in 2022 as part of a consultation on traffic regulation orders. The government's response to that will be published later this year.

24. The National Planning Policy Framework (NPPF) sets out that local authorities should take into account the need to ensure an adequate provision of spaces for charging plug-in vehicles when setting local parking standards. We have committed to undertaking a wider review of the NPPF later this year, and we will consider any changes needed to provide a clear expectation that local authorities should plan for and deliver charging infrastructure. We also intend, through future legislation, to set out an obligation on Local Transport Authorities to produce local charging strategies and ensure delivery of these plans in their areas. We will set out our next steps in the soon to be published government response to the Future of Transport Regulatory Review consultation.

25. In relation to high powered chargers on the motorway network the government is accelerating this through the Rapid Charging Fund. We will ensure that the implementation of the Rapid Charging Fund drives market competition and delivery. We recognise that planning and connection to the grid can be barriers to the effective deployment of EV charging infrastructure. The government will review these barriers including through the action plan to accelerate grid connections announced in the Energy Security Plan and our response to a call for evidence published in 2022, which sought views on current issues with the land rights and consents processes for network infrastructure. This will ensure that the rollout of electric vehicles can effectively support decarbonisation and a growing electric vehicle industry.

Recommendation 8 – Electric vehicle battery recycling

The government should work with industry and regulators to create an appropriate regulatory framework for EV battery recycling to support innovation in this area. This framework should be technology agnostic and factor in recycling by design, and should encourage scaling of the technology.

Response

26. The shift to ZEVs will be a vital part of our transition to net zero emissions by 2050 and as the market continues to grow, there will be significant opportunities to support the safe and environmentally friendly recycling of batteries. The appropriate regulatory framework for batteries will be important to support growth in this sector as well as our climate and environmental objectives.

27. The government has already made progress including through the Critical Minerals Strategy, refreshed in March 2023, which sets out our approach to the recovery and recycling of critical minerals, including those in electric vehicle batteries. We are also investing in a range of research and development programmes to develop the innovative technologies needed to address the issue of battery recycling, including the Faraday Institution, the Faraday Battery Challenge and the Automotive Transformation Fund.

28. The government will consult by the end of this year on battery regulations, covering the treatment and recycling of all battery types, including those used in ZEVs, and will work with industry to ensure a joined-up approach across the battery ecosystem.

Recommendation 9 – Innovative use of waste products

The government should support the Environment Agency, other regulators and standards bodies, research institutions and a chosen local authority to establish a regulatory sandbox for the innovative use of waste products, with a focus on providing derogations to support innovation on priority waste streams which currently cannot be recycled or re-used due to regulatory barriers. The sandbox could be located in a specific Investment Zone.

Response

29. There are significant opportunities to use technological innovation to reduce waste, which can deliver a more circular economy and boost growth.

30. We agree there is merit in establishing a regulatory sandbox for the innovative use of waste products. The government will work with the Environment Agency and other relevant organisations to develop this. We will explore whether a regulatory sandbox can be aligned with the Investment Zones programme announced at Spring Budget 2023.

This publication is also available on our website at www.gov.uk/government/publications

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