

EDITORIAL

ONE GOAL, TEN POINTS



Scott Steedman CBE FREng

The Prime Minister's November release of the *Ten Point Plan for a Green Industrial Revolution* was a breath of fresh air in the relentless news coverage of the pandemic and the US Presidential election. Signalling multiple initiatives from aerospace to tree planting and green finance, the plan is a call to arms for engineers everywhere. The document is an important expansion of the government's previous plans for the UK to attain net zero emissions of carbon by 2050.

The UN Climate Change Conference COP26, to be hosted by the UK and Italy in Glasgow in November 2021, will have added to the pressure on government to act, even so the *Ten Point Plan* is a step in the right direction. The breadth of the plan signals an understanding in government that industry cannot deliver net zero without immediate action to bring together public and private investment behind a common cause, tackled at national scale.

The UK is already the world leader in the deployment of offshore wind. We have advanced nuclear engineering capability and have talked about the potential for small modular reactors for years. The government has been quietly pushing the development

of hydrogen appliances, battery technology, and carbon capture and storage (CCS). Although each area has been successful individually, at national level our approach has been fragmented, hesitant, too small, and lacking the political commitment needed to drive real change.

Does the *Ten Point Plan* go far enough? Industry has given a cautious welcome. But a green industrial revolution will not happen through science alone, it must be forged through new manufacturing output, new construction products, new business models and new forms of investment. Above all, it will require a new mindset, a mindset that embraces the importance of new skills, new jobs and a new, strategic approach to delivering a greener national infrastructure.

Each of the government's ten points is important: offshore wind, hydrogen, nuclear power, electric vehicles, public mobility, aerospace and maritime, buildings, CCS, the natural environment, and innovation and finance, but the key to achieving the goal will be to deliver them together. This plan needs government, industry and environmental interests to keep their eye on the prize and to realise that these are not ten separate ideas but one system.

Silo thinking has handicapped our ability as a nation to deliver innovation at speed and at scale. Stimulating a market for batteries to store electricity in the home needs more than the ability to manufacture batteries. It needs changes to building regulations to stimulate market demand. Some electric vehicles need batteries and others will use fuel cells. Making hydrogen needs electricity or, if using steam reformation, it needs CCS. Using less fossil fuel means generating more electricity from offshore wind and nuclear power. At the same time, we need to improve the

energy efficiency of our building stock, reduce pressure on the environment and find more sustainable means of transport, whether by air, sea or land.

Respecting and exploiting our industrial legacy to deliver this plan will be vital. The plan must build on the UK's engineering excellence, both in areas of the country with world-class manufacturing capability and in engineering sectors, such as nuclear energy, where the UK has special expertise, including small modular reactors. (Professor Dieter Helm CBE picks up the theme of the UK's strong science and technology capability in this issue on page 8).

Testing each point in the plan needs engineering insight. Could the plan go further in its ambition for a new hydrogen economy? Could it aim to heat more than just one town by hydrogen by the end of the decade? The plan supports the introduction of CCS to four industrial clusters of traditional industries, but should there be more? How could CCS and nuclear projects be accelerated through design and construction?

We know that the government has its hands full with the pandemic, leaving the EU, the UK internal market, trade negotiations, telecoms security, economic recovery, the list goes on. The Prime Minister's commitment is welcome, but this is a plan that needs to be engineered. No organisation is better suited to lead that work than the Academy. With COP26 coming over the horizon, now is the time for the Academy, through its leadership of the National Engineering Policy Centre, to show us the way forward.

Scott Steedman CBE FREng
Editor-in-Chief