renewableUK

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Recommendations for a Green Economic Recovery

July 2020

RenewableUK members are building our future energy system, powered by clean electricity.

We bring them together to deliver that future faster; a future which is better for industry, billpayers, and the environment. We support over 400 member companies to ensure increasing amounts of renewable electricity are deployed across the UK and access markets to export all over the world. Our members are business leaders, technology innovators, and expert thinkers from right across industry.

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Introduction

The recovery from Covid-19 has added a new economic imperative to the Government's three overarching strategies: the transition to a net zero economy, building global Britain as we leave the EU and levelling up all parts of the United Kingdom. In getting our economy back on track, a green recovery with renewables at its heart will accelerate the decarbonisation of the economy, enhance our position as a world leader in the low carbon technologies of the future and deliver benefits to local communities across the UK.

The UK's renewable energy industry has shown that clean technologies are capable of supporting thousands of high-value jobs and new investment across the UK, transforming communities where industry has clustered, most notably along our East Coast. Last autumn marked the moment new offshore wind contracts were agreed at £39 per MWh, which was below the wholesale market price of electricity. In making renewables the lowest cost form of new generation, we've demonstrated that the low carbon technologies are as intwined with the long-term productivity of our economy and the prosperity of UK billpayers, as they are with achieving our target of an economy with net zero carbon emissions. With a clear, long-term commitment from Government to support investment, we can bring forward new technologies which will bring further economic, consumer and environmental benefits to our country.

The public have been clear that an economic stimulus should aim to build a greener economy than the one that preceded the COVID lockdown, with an understandable focus on jobs. To do so, we need to maximise the industrial benefits of our renewables sector and bring forward some of the economic transformation the UK will need to undertake on our path to net zero. RenewableUK have six recommendations for Government.

Maximise investment in renewable energy:

1. Lift capacity caps for next year's Contract for Difference auction to maximise investment and job creation. The auction could secure over £20bn of new investment and support over 12,000 new jobs in the immediate construction of new wind farms.
2. Outline a cross-Departmental programme to address the barriers to achieving the Government's 40GW target for offshore wind by 2030.
3. Establish a route to market and enabling infrastructure to unlock investment in innovative renewable technologies such as floating wind, wave and tidal stream which will support new jobs around the UK in the short term, and price-competitive electricity and exports in the long term.

Increasing jobs and industrial benefits of renewable industry investment:

4. Adopt a new strategic approach to increasing competitiveness and investment in the UK supply chain for renewable energy, including immediate programmes to raise industry investment, enabling port infrastructure development, R&D match-funding and export facilitation.

Bringing forward future decarbonisation:

5. Accelerate electrification, particularly domestic heating and EV uptake, alongside improving investment in grid infrastructure required to support this and policies to promote flexibility to ensure that consumers fully benefit from growing renewables.
6. Establish a strategy to accelerate the development of renewable hydrogen and bring forward investment and jobs in the sector, with the research and development funding, hydrogen production targets and strong demand side signals to ensure take advantage of our world-leadership in the technology.

Maximising investment in renewable energy

The UK's system of Contract for Difference auctions has been emulated by other countries across the world for its ability to secure investment in large volumes of renewable energy, at the lowest for consumers. Furthermore, the UK Government's clear commitment to net zero, combined with targets for internal combustion engine phase out, assures investors that there will be demand for renewable power in the future from across the economy to validate further investment. More clarity and ambition from Government on nearer term targets – for example, the roll out of EV infrastructure and the decarbonisation of domestic heating – would further increase investor confidence.

The UK Government has set an ambitious target of 40GW of offshore wind by 2030 and to enable new floating offshore wind farms. This March, BEIS confirmed the inclusion of onshore wind and solar in the next Contract for Difference auctions. The UK's commitment to renewable deployment is therefore clear. However, continued issues with the policy, regulatory and infrastructure environment surrounding renewable construction could result in lower development and investment, in the short and long term.

Recommendation 1

Lift capacity caps for next year's Contract for Difference auction to maximise investment and job creation. The auction could secure over £20bn of new investment and support over 12,000 new jobs in the immediate construction of new wind farms

The Government's commitment to new Contract for Difference auctions for Pot 1 and proposals to support innovative renewable technologies through changes to the pot structure, signalled their ambition to speed up the transition to net zero. By maximising the size of the upcoming auction, the Government can secure rapid investment in a short period of time. For example, an auction that secured 10.8GW of wind energy capacity would bring forward an investment windfall of over £20bn during the project's initial construction phase, with over £17bn in offshore wind and over £3bn in onshore wind. This investment will support over 12,000 new direct jobs over the 2024-2026 period[i]. These projects can be delivered in shorter timescales than other low carbon options and will provide long-term, low cost energy that will support competitiveness in the wider economy. We would strongly advise the Government couple this with the more strategic approach to supply chain development outlined in recommendation 5 to maximise the economic benefit to the UK.

In 2019 offshore wind projects won auctions with prices below the wholesale market price, and onshore wind is expected to be even cheaper. Wind energy is therefore key to meeting the Committee on Climate Change's (CCC) advice on securing the lowest cost route to net zero. The benefits of developing offshore wind as the backbone of a clean, low-cost energy system were recognised in the 2019 Sector Deal and the Government's increased ambition for 40GW by 2030. Furthermore, developing our onshore wind capacity in line with net zero could support 31,000 jobs, reduce the average UK household energy bill by £50 a year and create a £350m pa export industry, by 2035[ii].

Whilst we encourage the UK Government to commit to a longer term strategy to develop onshore wind at the scale needed for net zero, our focus is rightly on how we maximise investment in the short term to stimulate the economy.

As such, we would advise that the Government maximises the volume of capacity secured in the next Contract for Difference auction, and continue auctions at least every two years thereafter. RenewableUK's Project Intelligence has identified 3.4GW of 'shovel ready' onshore wind sites with planning approval which could bid into the next auction. Onshore wind can be relatively quickly constructed and typical UK content of these projects is c70%, so the economic benefits would be felt quickly and locally.

Offshore wind could provide even greater capacity at the next auction with up to 10GW of capacity potentially eligible for the auction. The industry has already built up a significant UK supply chain based largely in clusters that are benefitting coastal communities across the country. A large volume of capacity coming forward from the 2021 auction would further boost this supply chain and secure additional investment in UK capabilities taken in tandem with a more strategic approach to supporting the supply chain (Recommendation 4).

The Government are still to decide the parameters of the next CfD auction. We advise the Government to maximise the level of investment and deployment which could be unlocked through the auction. If the auction secured, for example, a total of 11GW of new onshore and offshore wind capacity this would result in investment of over £20bn in the manufacturing, installation and operation of the new projects and support in the region of 12,000 jobs. From previous experience, once these contracts are awarded in the 2021 allocation round, we would see spending and investment begin immediately, supporting local economies across the UK.

Recommendation 2

Outline a cross-Departmental programme to address the barriers to achieving the Government's 40GW target for offshore wind by 2030

The UK is a world leader in offshore wind development. The sector is already the UK's fourth largest investor in infrastructure, directly employing 11,000 people and delivering low cost power. Clusters of innovation, industry and training are already developing in coastal regions across the UK.

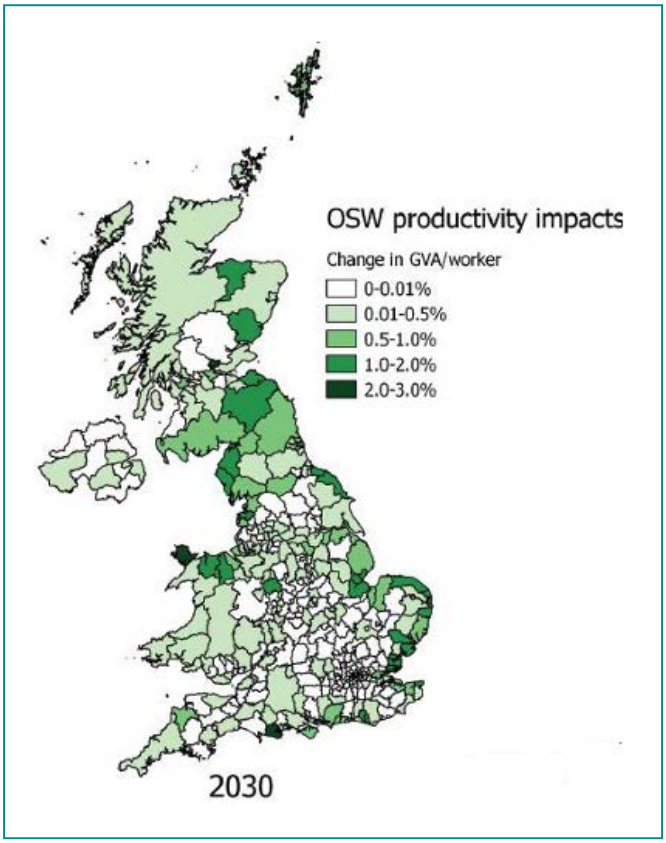
The UK's target of developing 40GW of offshore wind by 2030 will be pivotal in supporting economic growth in the coming decade[iii]:

- Securing £50 billion of investment in the UK.
- Directly employing at least 27,000 people at Developer and Tier 1 supply chain level, with thousands more in the wider supply chain and indirectly.
- Supporting the Government's 'levelling up' economic ambitions through a geographically dispersed supply chain and 'offshore wind clusters' of industry development along our coastal towns and cities.
- £2.6 billion each year in exports.

However, there are barriers to deploying 40GW of offshore wind which will require greater co-operation between Government and industry, as well as regulatory reform and a significant increase in resourcing from a number of Departments. This work will be more extensive and immediate than that agreed in the Sector Deal, when 30GW was the shared target, and encompasses issues such as grid infrastructure development, aviation radar, the capacity of statutory bodies to process applications, marine planning and consenting.

A framework within Government to ensure all concerned Departments address the barriers to offshore wind deployment is not just a long term necessity, but would support the development of sites we would expect to support the economic recovery through this and future CfD auction rounds. For example, our greater ambitions for offshore wind means that, over the longer term, the current offshore transmission regime of point to point connections is no longer fit for purpose. We urge the Government to establish a cross departmental board to review how offshore transmission infrastructure is designed and developed to reduce costs and minimise impacts on communities, as part of their wider framework.

It is worth recognising that commercial opportunities may flow from the UK Government's work to neutralising potential restrictions on offshore wind deployment. For example, new aviation radar systems could be exported to developing markets across the world, as well as being used to mitigate the constraints they place on over half of planned UK development up to 2030.



Source: Offshore Wind Sector Deal Prospectus, Analysis of GVA/worker benefits of deployment of 30GW of offshore wind by 2030

Recommendation 3

Establish a route to market and enabling infrastructure to unlock investment in innovative renewable technologies such as floating wind, wave and tidal stream

The development of floating wind represents an opportunity to broaden the benefits of offshore wind to communities around the UK, aiding the Government's levelling up agenda.

We welcomed the Government's consultation on reforms to the next Contract for Difference auction which could support the development of floating wind, wave and tidal stream technologies. However, the development of each technology will require targeted measures from Government, which should be brought forward to support the UK's economic recovery.

As RenewableUK and ScottishRenewables's report 'Floating Wind: The UK Industry Ambition' demonstrated that, with the correct support, floating wind has the potential to provide:

- 17,000 UK jobs, with significant cross-over from employment in oil and gas.
- £33.6bn of economic activity (GVA) – particularly apparent in the hubs of the industry in Scotland, Wales and the South West of England.
- UK export value of at least £230m by 2031 and £550m by 2050.

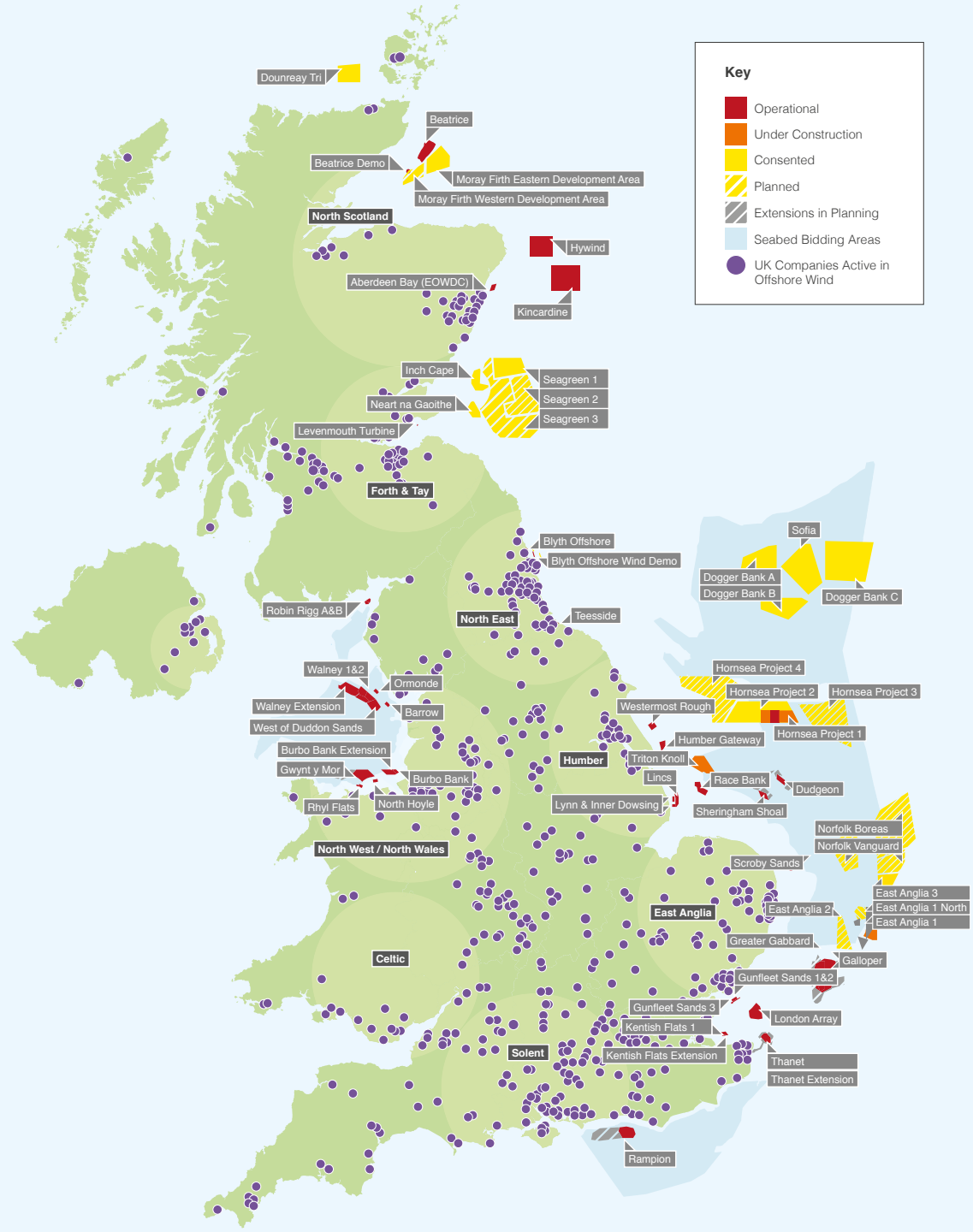
In addition to CfD reform, to ensure the UK can make the most of its years of experience in oil and gas, and offshore wind, floating offshore wind will require further leasing opportunities from the Crown Estate and Crown Estate Scotland, and Government-industry co-investment in associated port infrastructure development. France is already using regional Government funding to prepare ports for the development of floating offshore wind. The UK could allocate funding to bring our necessary port development forward, supporting jobs in construction and increasing investor confidence in the sector and its supply chain.

The UK is a world-leader in wave and tidal stream technology. The Offshore Renewable Energy Catapult estimates that[iv]:

- The tidal stream industry could generate a net cumulative benefit to the UK of £1.4bn, including considerable exports and support 4,000 jobs by 2030.
- While currently less a mature technology, wave energy could add a net positive contribution to the UK economy of £4bn and support 8,100 jobs by 2040.
- 50-60% of the economic benefit is expected to be in coastal areas, particularly in Scotland, Wales, the South West and Solent.

Whilst CfD reform to support the development of these technologies is welcome, the pace of innovation and cost reduction in the sector could be increased with additional revenue support mechanisms with more frequent contract availability. Government tax incentives to support the PPA market for technology would increase the pace of deployment and learning, whilst also unlocking further jobs and investment in the sector.

Summary of Offshore Wind Activity in the UK



Recommendation 4

Adopt a new strategic approach to supporting the UK supply chain in renewable energy

Increasing jobs and industrial benefits of renewable industry investment

A substantial UK supply chain has developed to support the construction, operation and maintenance of our wind farms – a result of inward investment from established international companies, diversification of UK companies (e.g. from oil & gas services) and innovative new entrants. This supply chain is very geographically dispersed, supporting the Government's 'levelling up' economic ambitions.

However, development of the UK's supply chain, its relative competitiveness and innovation, has been predominantly supported by industry funding and investment to date, alongside policy commitment to growing the market.

Ultimately, the success of the UK supply chain hinges on its ability to continually transform and remain competitive. In doing so, they will not only secure work in the UK, but in the expanding global market.

The industry stands ready to support a more strategic approach from Government which will ensure the UK supply chain companies are at the forefront of innovation, able to make strategic investments with the necessary surrounding infrastructure in place, and capitalise on export opportunities. Furthermore, UK consumers will benefit from Government driving a competitive supply chain as lower projects costs are passed on through a lower cost of energy.

The central pillars of a UK supply chain strategy are fourfold.

Recommendation 4a: Proactively support industry investment

Unlocking new investment in the UK supply chain will require Government to be proactive in engaging large companies with live 'anchor investments' decisions, as was done successfully in securing £310million of investment from Siemens Gamesa and APB in an offshore wind blade factory Hull.

The Siemens Gamesa factory clearly demonstrates the economic benefits that can follow from this; in addition to employing over 1,000 local people, Hull City Council estimates it contributed to:

- 10% improvement in local GVA over last 5 years
- 13% improvement in local employment
- Nearly 60% reduction in local unemployment benefit claimants
- 30% growth in local enterprises

There is a crucial role for central Government to support key investment decisions by these companies through coordinating across the various agencies and initiatives that are in place at regional or local levels to support business and investment and, where necessary, through grants or tax incentives.

Additionally, Government should establish an enabling policy environment for the UK's numerous SMEs, to ensure they're able to invest, grow and innovate in a way that will increase their competitiveness in the UK and global market. As with larger supply chain companies, this could be through co-financing, grants, guarantees or rates support. Importantly, such schemes wouldn't just support the enlargement and adaption of companies already operating in the offshore wind market. Companies diversifying into the offshore wind market and innovative entrepreneurs with new technologies, proven through UK testing centres, would be better able to establish the initial operational capital required to enter into the market.

Industry will continue to supplement this work with its own £100m Offshore Wind Growth Partnership fund which supports UK supply chain companies with research and development, strategy and leadership, project management, people excellence, process excellence, health and safety culture, and quality management.

Recommendation 4b: Investment in port infrastructure development to capture international supply chain investment and enable UK supply chain and floating wind development

In 2030, the average size of new turbines is expected to be 15MW, up from 7.8MW at present. Some of the projects successful in the 2019 CfD auction round will be using turbines of 12MW and 14MW. As offshore wind turbines continue to grow in size, ports will need to adapt to handle the manufacture, assembly and loading of blades, foundations and other components on a different scale. Without investment in enabling infrastructure, only a small number of ports in the UK will be able to handle turbines of the size expected within the next five years. As previously outlined, there is also a need to prepare our ports for the future development of floating offshore wind.

Government should make targeted funding available, either ring-fenced within existing infrastructure funds or in conjunction with new funding under the Freeports agenda, to secure investment in the critical port infrastructure needed to retain UK competitiveness in offshore wind manufacturing, export and construction. The sooner the Government brings this critical development forward, the faster the UK will benefit from the associated jobs in construction and the further investment it enables.

Recommendation 4c: Government co-investment in research and development

The ability of the UK's offshore wind supply chain to compete in the UK and global market will be significantly dependent upon owning appropriate intellectual property and system integration knowledge. To accelerate this development, the government should allocate funding to support appropriate R&D investment, at least to the levels of competitor countries such as Germany, the Netherlands, Denmark and Japan.

The majority of funding to support R&D, productivity and quality management in the supply chain has been provided by industry, historically through schemes like the Offshore Wind Accelerator, but currently most notably through the £100 million Offshore Wind Growth Partnership (OWGP) scheme. The Government should make further funds available to the OWGP, as is the case with the joint government-industry funded Aerospace Growth Partnership and its Supply Chain 21 Competitiveness & Growth programme.

Recommendation 4d: Increased support for exports

There is a significant opportunity for the UK to export wind engineering expertise, components and services to the large European wind market and rapidly expanding global market. This fixed offshore wind market alone is set to rise to £30bn pa by 2030. However, many UK SME's in offshore wind lack the knowledge and resource to promote and sell their products and services to these export markets.

We welcome the support available from Government Departments to achieve the sector's aim on increasing UK offshore wind exports to £2.6 billion a year, but the Department for International Trade (DIT) should be further resourced to meet the scale of demand for these services and the export opportunity. Increased resource would also enable DIT's services to become more dynamic and collaborative with the work of the FCO and COP Team in encouraging the expansion of offshore wind in developing markets like Brazil, India, Turkey and South Africa.

Recommendation 5

Accelerate electrification, particularly domestic heating and EV uptake, alongside improving investment in grid infrastructure required to support this and policies to promote flexibility to ensure that consumers fully benefit from growing renewables

Bringing forward future decarbonisation

Due to the success of renewables, the decarbonisation of our electricity supply is well underway. Indeed, over 60% of the UK's emissions reductions are accounted for by the power sector[v]. It is then right that the UK looks at the other main sources of carbon emissions, and how to decarbonise them as quickly as possible. In the current context, we should prioritise those transformations which do so and, if brought forward, could be job rich and quickly implemented. Many of these will involve expediting electrification of transport and the decarbonisation of heat.

To reduce overall emissions in line with net zero by 2050 in a linear fashion, emissions from transport and heating will have to fall to 131Mt CO2 by 2030. However, according to the government's latest emissions projections, these sectors will reduce to just 200MtCO2 on current trend.

Transport is the largest source of UK emissions, most of which comes from road transport. 10 million electric vehicles on UK roads – as suggested in Vivid Economics analysis for the CCC - would represent an additional c.40TWh of annual demand for power which can be met as we scale-up renewables deployment in the years ahead (Recommendation 1).

In addition to bringing forward the rollout of EV charging infrastructure and maintaining grant funding for EVs and home chargers, we would recommend that market frameworks are put in place that will enable EVs, and other smart technologies, to support future grid management. At a time of economic slowdown, we need to maximise consumer benefit and minimise the costs of energy to UK households – particularly when doing so is at no cost to Government.

The UK is historically extremely reliant on gas for domestic heating and counts a total of 26 million gas boilers installed across the country. Despite current domestic heat incentives, the upfront installation costs and lack of transparency on the schemes remain an issue for individual homes. Possible public policy solutions for low carbon heating could be delivered through a mix of incentives and targeted support, taxation measures and regulation.

While the relatively low cost of gas in the last decade has undermined investment in electrification, falling electricity prices due to the higher levels of cheap renewable generation – coupled with strong government incentives – mean we expect the balance could shift more rapidly, particularly if carbon costs were appropriately applied. Government should, therefore, work with industry to reach an economically viable deployment strategy for heat pumps and district heating that will accelerate the electrification and decarbonisation of heat.

In developing new policy on decarbonisation of heat, in particular, ability to pay must be central to policy and vulnerable customers protected in this transition. There are wider benefits that consumers can secure as we fully decarbonise our power grid and the wider energy system, particularly as EVs are rolled out and smart technologies allow consumers to take full advantage of lower cost electricity.

Increasing the pace of electrification of heat, transport and other key sectors of the economy can be achieved by maximising investment in renewable generation sources (recommendation 1), and this strengthens the case for an approach to grid investment that will not only support net zero but provide long term benefits to consumers. Private investment in grid infrastructure can be brought forward rapidly provided the regulatory framework allows for more strategic, anticipatory investment that will reduce the overall cost of new grid infrastructure in the long term. Ofgem's RIIO T2 and ED2 frameworks present an opportunity to implement such an approach aligned with maximising investment to support a green recovery, achieving net zero and protecting consumers.

Recommendation 6

Establish a strategy for the development of renewable hydrogen

Whilst electrification will go some way to support further decarbonisation, other applications, such as freight transport on land and sea, and industrial processes, need molecules not electrons. Renewable hydrogen is the low carbon molecule that can deliver decarbonisation of these sectors and, as such, it is vital that its development is brought forward as soon as possible.

It is now clear that hydrogen will play a central role in the decarbonization of industry as a source of heat and industrial feedstock as well as a zero-carbon fuel for freight transport on road, rail and ships. There are significant benefits to stimulating the economy by bringing forward the development of renewable hydrogen, produced with electricity from renewable generation, which has the potential to sustain thousands of high-skilled green jobs across the country, and where rapid cost reduction is expected[vi].

The UK is already home of to some of the world's leading electrolyser manufacturers of hydrogen electrolysers, with companies such as ITM Power in South Yorkshire winning contracts across Europe. We have world-leading trials of renewable hydrogen, such as Orsted's project in the Humber. This all lays the foundations for the UK's leadership in this sector, and great opportunity for jobs and exports from the domestic production hydrogen and the supply chain.

To ensure the UK capitalizes on its technological strengths in renewable hydrogen, to maximize the industrial benefits of development and its future exports into a global market estimated to be $2.5 trillion by 2050, we would advise Government to publish a hydrogen strategy which three immediate measures. First, a commitment to support R&D spending that will drive innovation and cost reduction in design and manufacturing of electrolyser systems. Second, a clear commitment and roadmap for future volumes and support for hydrogen production, which we would advise should put us ahead of our competitors (e.g. Germany on 5GW by 2030). Third, and critically, the government should publish a clear strategy for how demand for hydrogen will develop in transport, industry and heat. This strategy must bring together all government departments, especially BEIS, DfT, MHCLG.

Conclusion

As this report sets out, there is a short term boost from investment in renewables of at least £20bn that can be secured through existing Government policies. This is possible due to the maturity and short lead-in times for renewable projects, relative to other infrastructure investment. We also identify that accelerated investment in renewable capacity will allow the UK to move faster on rolling out electric vehicles and low carbon heating solutions – two of the immediate priority areas for progress on net zero. Doing this in a way which creates a more flexible energy system will reduce costs to consumers and increase efficiency.

While maximising our existing policies to quickly deliver benefits from renewables is clearly a win-win for consumers and the economy, now is the time to also invest in the emerging technologies that we know will play a key role in the delivering net zero and in which the UK can be a world leader, such as renewable hydrogen, floating offshore wind and marine technologies. Taking forward and scaling up these projects will deliver growth, investment and productivity into the longer term and create new export opportunities for UK goods and expertise.

All of this will be underpinned by industry and innovation taking place across the entire UK. Working with industry, Government can help to secure investment in technology innovative, new manufacturing opportunities and intellectual property. Investment which will maintain our global lead in technologies like offshore wind and build new supply chains for renewable hydrogen and floating wind.

i. Analysis based on investment in 3GW of onshore wind and of 7.8GW offshore wind. Sources: RenewableUK, Vivid Economics (2019) 'Quantifying the Benefits of onshore wind to the UK' https://www.vivideconomics.com/wp-content/uploads/2019/08/Quantifying_the_Benefits_of-report-.pdf
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iii. Vivid Economic Analysis produced for the the Offshore Wind Industry Council.
iv. OREC Catapult (April 2018) Tidal stream and wave energy, cost reduction and industrial benefit
v. Provisional UK greenhouse gas emissions national statistics, BEIS, March 2020
vi. Hydrogen Europe (2018) Hydrogen, Enabling a zero emission Europe

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