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Securing and financing clean growth for the EU

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EXECUTIVE SUMMARY

A competitive economy in 2030 is one that is resource efficient, low carbon and resilient to the impacts from a changing climate

The transition to a low carbon economy is global and rapidly growing, with new industries and markets emerging each year.¹ Meanwhile, the impacts of climate change and environmental degradation are increasingly tangible and immediate. There are significant clean growth opportunities for the European Union (EU) if it maintains leadership and capitalises on this new market. For example, increasing the resource efficiency of the European economy could generate an additional €324bn in Gross Value Added (GVA) between 2016 and 2030, whilst also reducing environmental impacts.² **High environmental standards in the EU can build on existing European strengths to drive investment and innovation in the low carbon and circular technologies, expertise and services that the world will rely on in coming decades.**

Underpinning the economic benefits is **a valuable opportunity to reframe the purpose and mission of the European Union** and increase engagement in the face of declining trust in politics.³ A 2017 survey on the Future of Europe by Eurobarometer found that surveyed **citizens believe protecting the environment is the second most important consideration for the EU** when tackling global challenges, after securing social equality and solidarity.⁴ Measures to mitigate and adapt to climate change can limit inequality-exacerbating losses resulting from natural events like flooding, droughts and heatwaves, and maximise the wellbeing benefits for European citizens through cleaner air and water and better access to quality natural spaces. Furthermore, engaging the EU's financial industry in green investment opportunities can also help to better connect finance with the real economy and rebuild trust after last decade's financial crisis, whilst unlocking the large volumes of investment needed in future-ready infrastructure across Europe.

However, current EU policy does not sufficiently incentivise the development of these green infrastructure projects, whilst financial systems are not set up to invest for the long-term. **Ambitious, well-designed and properly enforced environmental regulations will help secure this win-win** and deliver clean growth for European industry and citizens. To harness this opportunity, **the next European Commission must integrate how it thinks about industrial strategy and environmental and climate goals**, with a view to reach net zero emissions by 2050.

To do so, this paper argues that EU policy levers in the coming decade must be used to (i) establish long-term pipelines of green infrastructure projects, (ii) attract affordable private investment in low-carbon technologies and new business models, and (iii) ensure this new investment translates into EU supply chain growth. Based on the EU's progress and policy development to date, the paper details some of the key policy measures needed to create the necessary large scale pipeline of projects to meet 2030 targets and deliver the large amount of private investment needed in the coming decade.

¹ International Finance Corporation (November 2016) *Climate Investment Opportunities in Emerging Markets: An IFC Analysis*

² Aldersgate Group (January 2017) *Amplifying action on resource efficiency: EU edition*

³ Opinion of the European Economic and Social Committee on 'The transition towards a more sustainable European future — a strategy for 2050' (own-initiative opinion) (2018/C 081/07)

⁴ Special Eurobarometer 467 (November 2017) *Future of Europe: Social issues*

Key policy recommendations:

- The next European Commission must establish, as a legislative priority, the development of a low carbon and resource efficient economy, resilient to the impacts of climate change. This should include, setting in particular a **target to become zero carbon by 2050 in line with the latest IPCC Special Report on 1.5°C**. Delivering on this target will require improved co-ordination between policies on the environment, infrastructure development, finance and industrial strategy, which could be **overseen by a new Commissioner for Clean Growth**;
- A **review of macroeconomic policy and fiscal incentives is required to ensure policy coherence with a zero carbon target**, including by setting a roadmap for phase out of environmentally harmful subsidies across member states and EU institutions, and ensuring that all EU public spending, loans and fiscal incentives are aligned with the EU's climate and environmental objectives;
- The Commission and Member States should work together **to develop market mechanisms to support delivery** of these policy goals, including **stable revenue guarantee schemes** for newer technologies, introducing a **steadily increasing floor price in the EU Emissions Trading Scheme (EU ETS)** to level the playing field for green infrastructure from the mid-2020s onward, and **ratcheting up standards on energy and resource efficiency to drive greater investment** in circular and low carbon technologies;
- The new Commission must **reconfirm its commitment to the Sustainable Finance Action Plan** and should introduce measures in the near future to overcome short-termism in financial markets, including requiring consideration of climate change-related risks and opportunities in financial management and gathering evidence on relative risks between green and brown infrastructure investments, as well as developing clear definitions and labels for green financial products to improve accessibility of green investments;
- The Commission should **target public funds and technical assistance to support wider investment in priority sectors that are harder to decarbonise**, such as energy intensive sectors, agriculture and long-distance transport, between 2020-2025.

1 Introduction

1.1 Europe needs to move faster on clean growth

Unabated climate change presents significant threats to the European Union (EU) and the global community. Beyond the physical and social impacts from extreme weather events, such as increasing temperatures and sea level rise, there is also an important economic dimension: extreme weather events in Europe cost nearly €14bn in 2017 alone,⁵ and changes to weather patterns in the Mediterranean have pushed up vegetable prices by up to 132% in recent years.⁶ A temperature increase of 2°C is expected to generate €120bn annual losses in Europe (equivalent to 1.2% GDP)⁷ and wipe \$4.2tn off the value of the world's economy by 2100 (equivalent to Japan's GDP).⁸ However, as well as avoiding such losses, **taking timely action to mitigate climate change also presents considerable growth opportunities for the EU and its citizens.**

An expected US\$90tn will be invested in infrastructure to 2030 globally, more than is in place in our entire current stock today,⁹ so the investment decisions that will be made in the coming years will have a profound impact on the world's ability to limit the impacts of climate change. **To remain within 1.5°C of warming, noting the findings of the latest Intergovernmental Panel on Climate Change (IPCC) Special Report,¹⁰ we must rapidly move away from business as usual and establish a new European paradigm for growth.** There is real urgency: the climate change-linked drought and heatwave across Europe in 2018, responsible for numerous heat-related deaths, wildfires in Greece and Sweden, the shutting down of nuclear power plants in France, Germany and Sweden and significant crop yield decline demonstrate that **the impacts of climate change are neither hypothetical, nor distant.**

1.2 The legal and regulatory landscape

It is against this backdrop that the EU, which was responsible for 10% of the world's greenhouse gas (GHG) emissions in 2015,¹¹ has taken action to reduce emissions and improve the resource efficiency of its economy. The EU has agreed meaningful global commitments on climate change and environmental degradation through the 2015 Paris Agreement and the Sustainable Development Goals (SDGs). Domestically, the EU is on track to deliver its 2020 targets: emissions were already 23% below 1990 levels in 2016¹² and the share of renewable energy in final energy consumption rose from 9% in 2005 to 16.7% in 2015.¹³ The 2030 Climate and Energy Package, adopted in October 2014 and the Circular Economy Package, finalised in 2018, have the potential to extend the EU's international leadership on climate and environment issues, and deliver on-the-ground benefits for European residents.

⁵ Munich RE NatCatSERVICE, as quoted by CAN Europe (September 2018) *Costs of Inaction on Climate Change in Europe* (infographic)

⁶ E3G (November 2017) *Climate risk and the EU budget: investing in resilience*

⁷ Joint Research Centre (2014) *Climate Impacts in Europe*

⁸ The Economist Intelligence Unit (2015) *Cost of Inaction: recognising the value at risk from climate change*

⁹ The Global Commission on the Economy and Climate (2016) *New Climate Economy: The Sustainable Infrastructure Imperative*

¹⁰ IPCC (October 2018) *Global Warming of 1.5 °C: an IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*

¹¹ European Commission website, Climate Action: <https://bit.ly/2JgtLZA> [accessed 7 August 2018]

¹² Ibid.

¹³ IRENA (February 2018) *Renewable Energy Prospects for the European Union*

However, **these frameworks and ambitions are not enough. The EU is not on track to keep global temperature increases to 1.5°C and the IPCC Special Report has demonstrated the vital importance of doing so.** Much more work must be done between now and 2030 to significantly improve the resource efficiency of its economy, cut emissions to be compatible with the Paris Agreement and deliver the EU's commitments under SDGs 7 (Affordable and Clean Energy), 11 (Sustainable Cities), 12 (Responsible Consumption and Production) and 13 (Climate Action). An additional €178bn annual investment and much more granular policy detail will be needed to deliver the EU's 2030 climate and energy targets¹⁴ in the construction of renewable energy facilities, significant upscaling of energy efficiency projects in commercial, domestic and industrial premises, decarbonising transport of all forms, tackling agricultural emissions and shifting towards resource-efficient, service-based business models across Europe.

This paper argues that to maximize the economic and social opportunities from the global low carbon transition, EU policymakers must embrace and recognize that ambitious, well-designed and properly enforced environmental regulations are not only essential to meet the EU's long-term environmental and climate objectives but can also deliver significant economic and competitiveness benefits to European industry.

¹⁴ IEEP & Ricardo Energy and Environment (September 2017) *Climate Mainstreaming in the EU Budget*

2 The case for ambitious environmental regulations

A zero emission, environmentally resilient and resource efficient economy can and must be a growing economy. Having reduced its emissions by 23% compared to 1990 levels by 2016 and increased its GDP by 53% over the same period,¹⁵ the EU is already well placed to develop a competitive zero carbon economy by the middle of the century. Increasing the robustness of its low carbon offering to improve the wellbeing of its citizens is now vital to ensure that Europe remains internationally competitive and attractive.

To safeguard the long-term sustainability of the EU, **over the next decade the Commission and Parliament must ensure that embedding the principles of low carbon, resource efficiency, environmental resilience and restored biodiversity into the economy is a key legislative priority for the Union.** Taking low-regrets pathways now will open up options for greater clean growth in the longer run.

2.1 A major economic opportunity for the EU

Clean growth presents a sizeable economic opportunity for the EU beyond the imperative of avoiding long-lasting economic and environmental damage from climate change. As the EU's competitor markets increasingly seek to capitalise on the low carbon transition, **higher standards in the EU which drive innovation and investment in efficiencies are in the EU's competitive interests, boosting value added and profit for the bloc.**

The global market for low carbon goods and services, already worth \$5.5tn in 2011-12¹⁶, is rapidly growing.¹⁷ **In this burgeoning global marketplace, ambitious policy in the EU can create a first mover advantage, building on existing European strengths to drive domestic development in the low carbon and circular technologies, expertise and services that other countries will rely on** to deliver the SDGs and their Nationally Determined Contributions (NDCs) under the Paris Agreement.¹⁸ A recent Aldersgate Group report found that **an additional €324bn in GVA could be generated between 2016 and 2030 across Europe from greater resource efficiency,**¹⁹ delivering an addition reduction in material demand and CO₂ emissions of 184m tonnes and 154m tonnes respectively. As China has imposed a ban on imported waste in 2018, taking a proactive approach to resource and waste management will also become increasingly inevitable, creating commercial opportunities for early movers. Internal investment will also help deliver growth and improved livelihoods in the real economy: it is estimated that €10bn of energy efficiency investment could support up to 220,000 jobs, help to establish a renovation market for small businesses worth up to €120bn, and take 3.2m European families out of energy poverty.²⁰

¹⁵ European Commission (2018) Climate Action: https://ec.europa.eu/clima/policies/strategies/progress_en

¹⁶ New Climate Economy (2015) *Seizing the Global Opportunity*

¹⁷ Frankfurt School-UNEP Centre/BNEF (2016) *Global Trends in Renewable Energy Investment 2016*

¹⁸ M. Carvalho & S. Fankhauser (April 2017) *UK export opportunities in the low-carbon economy*

¹⁹ Through substantial progress in recycling and remanufacturing, and major development of reuse, servitisation and biorefining. Findings were based on business trials undertaken as part of a LIFE+ funded project (REBus) www.rebus.eu.com Aldersgate Group (January 2017) *Amplifying Action on Resource Efficiency: EU edition*

²⁰ European Commission (7 February 2018) *Smart finance for smart buildings: investing in energy efficiency in buildings*

2.2 Overcoming misconceptions

Capitalising on these global growth opportunities will require overcoming a common perception amongst policymakers that environmental regulation is a burden for business and a barrier to economic growth. This misconception has often been a major hurdle to the EU and its Member States establishing or extending ambitious environmental regulations.

A recent report published by engineering consultancy BuroHappold²¹ found that contrary to common belief, **well-designed, ambitious environmental regulations can deliver economic as well as environmental benefits.**²² The study considered the economic impacts that ambitious environmental regulations have had in the recent past on the construction, waste and automotive sectors. In all three cases, it concluded that the **initial costs incurred by businesses to comply with regulations were outweighed by economic benefits in the form of increased business investment in skills, innovation, better quality products, infrastructure and supply chains, all of which have a positive impact on job creation and business competitiveness.** For example the UK's Landfill Tax²³ has reduced the amount of waste sent to landfill in the UK by around 72% in 20 years and stimulated the waste industry to invest in new facilities (recovery, sorting, recycling etc.) and new services (recycling, reconditioning of goods etc.) with a net positive impact on the creation of high quality and highly skilled jobs.

Importantly, **many of the jobs being created within the low carbon economy are in regions and sectors that have seen decades of underinvestment.** For example, in 2013 there were already 136,000 jobs in the low carbon economy within the North of England, an area in the UK that has been most impacted by the move towards a service-based economy, with new employment opportunities spanning from energy generation supply chains to electric vehicle manufacturing.²⁴ Growing the low carbon and resilient economy has the potential to deliver higher quality of life to citizens across Europe not only through jobs growth, but also improved air quality, resilience to natural disasters, and greater physical and mental wellbeing associated with quality, green spaces.

The remainder of this paper sets out how we can ensure the EU's successful and cost-effective transition to secure clean growth, and is divided in two categories: the first (section 2) looks at policies that are essential to establish the pipelines of resource efficient and low carbon projects needed to deliver the EU's climate and environmental ambitions; the second (section 3) looks at the policies needed to increase the appetite and ability of financial markets to invest in these projects.

²¹ BuroHappold (December 2017) *Help or Hindrance? Environmental Regulations and Competitiveness*

²² The analysis carried out by BuroHappold concludes that to be economically and environmentally effective, environmental regulations need to be pitched at the right geographic scale, be consistent with other existing policies, set a clear sense of direction and be implemented in a way that gives businesses enough time to adjust to them. To maximise economic benefits and avoid unintended consequences, environmental regulations also need to be complemented by other policies, such as on skills (to maximise opportunities in terms of supply chain growth and job creation) or targeted financial support (to help industries at risk in the early stages of the transition to a resource efficient, low carbon economy).

²³ The Landfill Tax is a steadily increasing tax rate (now at nearly €100 per tonne) from 1996 onwards to prevent waste generation and deliver the targets set by the EU's Waste Directive

²⁴ Aldersgate Group (September 2016) *Setting the pace: Northern England's low carbon economy*

3 How to get there? Establishing a pipeline of affordable infrastructure

A steady and forward-looking order book of infrastructure – the ‘pipeline’ – is the essential starting point to delivering clean growth. A pipeline can be driven by regulatory levers and political signals and results in investment in innovation, skills and supply chains to bring costs down. Meeting the EU’s 2030 target cost effectively will rely on the commercial development of low carbon energy generation, energy efficiency (domestic, commercial and industrial), zero emission vehicle technology and environmental restoration projects. **The package of EU policies to 2030 therefore needs to be sufficiently detailed to generate a robust private-sector led pipeline.**

Before 2030, EU policy must also prepare the ground for innovation and development in the major challenges yet to be solved, including around future mobility, innovation in Energy Intensive Industries (EIIs), agriculture and water resource management. To meet these challenges the Commission must ensure that **regulatory and fiscal policies work harmoniously towards delivering the EU’s climate and energy goals.** The necessary strategic coherence could be supported by the **creation of a new cross-cutting Clean Growth Commissioner to overcome siloed ways of working and provide political momentum.**

3.1 Setting ambitious targets

The EU’s ability to set long-term, ambitious targets that apply across the Single Market creates an encouraging environment for private sector investment, offering a clear direction of travel that businesses in all sectors can respond to, plan for and invest in, if enforced and supported by credible policy levers. For example, the 2020 Renewable Energy Directive has driven the development of support measures across Member States, leading to significant private sector investment in renewable energy projects and innovation, and delivering substantial cost reductions in technologies such as on- and offshore wind. The International Renewable Energy Agency (IRENA) estimates **that a target to double the EU’s current share of renewable energy by 2030 would support continued cost reductions and be delivered cost-effectively, whilst also adding 0.3% to EU GDP.**²⁵

By contrast, ‘stop start’ renewable energy policy in the UK resulted in a 56% decline in clean energy investment in 2017, against a trend of international increases in investment.²⁶ To work with business time horizons, **targets must last beyond the cycle of a single Commission Presidency, as policy uncertainty is a major barrier to business investment.**²⁷ This is particularly the case as a great deal of low carbon infrastructure is long term: renewable energy assets can take 8 to 10 years to build and operate for decades.

As another paper in this series argues, the EU must “Think 2050, Act 2020” to ensure long-term policy coherence²⁸ and encourage long-term project development. In practical terms, the incoming Commission must strengthen and accelerate delivery of targets related to emissions reduction, energy efficiency, agriculture, renewable energy, sustainable finance, the circular economy, SDGs and plastics now. **Critically, neither the 2020 or 2030 targets currently put the bloc on track to**

²⁵ IRENA (12 January 2018) ‘European Union can meet ambitious renewable energy targets’

²⁶ Bloomberg New Energy Finance (January 2018) *New Energy Outlook 2018*

²⁷ S. Fankhauser et al (January 2018) *Growth opportunities in the low-carbon economy*

²⁸ Duwe, M., Vallejo, L. (October 2018) *Think 2050, Act 2020: Bringing European ambition and policies in line with the Paris Agreement*

meet the Paris Agreement goal of limiting temperature increase to 1.5°C, or even to 2°C²⁹ and the EU is not on track to meet its 2030 targets as it stands.³⁰ The strategy for long-term EU greenhouse gas emissions reductions will provide a pivotal opportunity for the next Commission and Parliament to increase overall ambition in line with the Paris Agreement, and **requires setting a target for the EU to become net zero by 2050**.³¹ Doing so will send a strong signal to the market to invest and change business as usual practices.

Within Member States, the mandatory 2030 National Energy and Climate Plans (NECPs) provide a useful opportunity to identify a clear infrastructure development plan and pipeline. As such, **national governments should ensure that these are comprehensive (including adaptation and resilience plans), delivered on time, and revised upwards if there are gaps in ambition** when aggregated to the EU level. Well-formulated NECPs could be developed to form the basis of 'National Capital Raising Plans' which would further identify investment opportunities and therefore establish a clear market and strengthen investor confidence.

3.2 Aligning fiscal policy and incentives with policy goals

Fiscal policy is amongst the most effective levers to change market behavior and should be designed to complement wider policy goals. **Currently the EU's fiscal and environmental policies are not well aligned**: for example, companies developing circular business models may struggle to compete on price if the upfront cost of secondary materials (or products using secondary materials) is higher than that of primary raw materials, a concern recently experienced by the European retreaded tyre industry competing against cheaper imported single-use tyres. Fiscal incentives and other pricing mechanisms can help better reflect the whole lifecycle cost of a product and its environmental benefit, and mitigate the upfront cost of resource efficient or green products. **The Commission must therefore rethink current fiscal architecture, prioritising incentives to reduce resource use (from energy to water and raw materials) and promoting low carbon approaches throughout the economy**, particularly through cornerstone spending packages such as the Common Agricultural Policy (CAP).

3.2.1 Eliminating environmentally harmful subsidies

Market distorting fossil fuel subsidies within the EU and its member states undermine a level playing field for low carbon industries. Currently €4bn of fossil fuel subsidies come from the EU through its budget, European Investment Bank (EIB) lending and European Bank for Reconstruction and Development (EBRD) spending, and funds such as the Connecting Europe Facility, European Fund for Strategic Investments and cohesion funds.³² A further €112bn in subsidies per year come from European countries, who lack clear plans or timelines for phase out.³³ The EU has committed to phase out by 2020, but **must now draw up a public roadmap for doing so immediately following the election**. Subsidies can then be rerouted into low carbon developments suffering market failures or 'hard to treat' sectors such as industrial energy efficiency and new renewable technologies, to help establish a level playing field. The Commission must also coordinate and support phase-out

²⁹ Climate Action Tracker <https://climateactiontracker.org/countries/eu/> [accessed 27 September 2018]

³⁰ Duwe & Vallejo (October 2018) *Think 2050, Act 2020*

³¹ IPCC (October 2018) *Global Warming of 1.5 °C: an IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*

³² E3G (December 2017) *Infrastructure for a changing energy system: The next generation of policies for the European Union*

³³ ODI (September 2017) *Phase-out 2020: monitoring Europe's fossil fuel subsidies*

efforts across Member States, by establishing an agreed definition for environmentally damaging subsidies and sharing best practice.

3.2.2 Rethinking fiscal rules

Overall, **fiscal policy should support the EU's stated policy aims**.³⁴ For example, the Commission can permit Member States to reduce the rate of value added tax (VAT) on the provision of low carbon and resource efficient goods and services to boost demand. Within the limited flexibility currently provided by the EU VAT Directive, Sweden introduced a 50% reduction on VAT on the repair of items like bicycles, leather goods and white goods and is also enabling citizens to reclaim up to 50% of labour costs from their income tax for fixing home appliances. This flexibility should be extended across the VAT regime where doing so can help to deliver the EU's climate and energy goals, and may require a system-wide review of VAT rules.

Similarly, **unequal application of State Aid rules must be addressed by the Commission**. The rules currently place constraints on national policy support for energy efficiency measures: only 30-50% of eligible costs for energy efficiency can receive State Aid, compared to 100% for energy infrastructure. Revising State Aid treatment of energy efficiency to match the treatment of wider energy infrastructure can support greater investment in energy efficiency.³⁵ The next **Commission should consider reviewing where barriers arising from State Aid rules can be adjusted to support the EU's climate and energy goals across the board, exempting green or circular projects from State Aid restrictions** given the Europe-wide benefits of promoting such spending.

3.3 Technical assistance to support innovation

Many of the technologies and business models needed to help the EU secure a clean growth future are relatively novel. Novel projects need technical and development assistance to commercialise and attract private sector finance. For example, trials on adopting new circular economy business models under the REBus project³⁶ showed that **although there is often a clear economic rationale for adopting resource efficient business models and developing resource efficient products, shifting models is often challenging for many companies**, especially – but not only – small and medium-sized enterprises (SMEs).³⁷ Businesses also need support to bridge the silos of industry and finance, to structure their offerings in an investor-friendly way. This even impacts access to public sector finance – an issue for many SMEs identified by REBus is how to fill in complex application forms to access funding and present a project in a way that fits the scope of the funding being made available.

The EU must deploy its convening capabilities to bring together Union-wide expertise and ensure increased technical assistance to accelerate clean growth and climate adaptation. The Commission's Innovation Deals, which aim to provide technical support to circular economy projects, have huge potential to help here but they must be broadened over time beyond the two deals already agreed on water reuse and electric vehicles, and the funding available significantly scaled up. The Advisory Hub proposed under the next Multiannual Financial Framework (InvestEU Assistance) will also be helpful in simplifying access to technical assistance for future projects, as long as it remains a key pillar of the final budget. **Technical assistance must particularly be focussed on the regions and sectors for whom the low carbon transition is currently highly challenging, for example in regions highly dependent on EILs.**

³⁴ E. Yrjö-Koskinen, M Nesbit (2018) *Aligning EU resources and expenditure with 2030 objectives*, IEEP Policy Paper

³⁵ E3G (March 2016) *Energy efficiency as infrastructure*

³⁶ On which the Aldersgate Group was a partner. See more: <http://www.rebus.eu.com/>

³⁷ Aldersgate Group (December 2017) *Beyond the Circular Economy Package*

3.4 Effective market mechanisms

Market mechanisms are essential to complement targets by setting the parameters within which businesses can invest in a project and calculate expected returns.

3.4.1 Revenue guarantee

At the national level, **long-term contracts that guarantee a fixed revenue have proven to be an effective way of driving private sector investment and reducing the cost of new low carbon technologies.** The offshore wind industry in the UK has benefitted enormously from the government's graduated Contract for Difference auctions, which set price stability up to 15 years ahead, driving progressively declining strike prices. The certainty and stability offered by the auctions has supported a reliable pipeline of orders for the UK supply chain and increased competition amongst developers. The strike price of offshore wind in the UK has nearly halved in just two years as a result, and UK industry is increasing its strengths in the export of cables, blades, foundations and towers for offshore wind, and benefitting from strong expertise in operation and maintenance.³⁸ Germany, the Netherlands and other Member States have similar stories to tell. Lessons from these experiences can be shared with EU states with less developed low carbon industries, and with industries less established than low carbon energy.

3.4.2 Pricing the carbon market and supporting ELLs

At the EU level, **setting pricing signals across the Single Market can encourage investment in low carbon technologies and energy efficiency** by creating a level playing field. For example, the EU's Emissions Trading System (EU ETS) could support the investment case for low carbon infrastructure if it delivered a higher price. The recent reforms³⁹ are expected to push prices up to €25-30 per tonne. However, analysis from Carbon Tracker suggests that prices will have to rise to €45-55 per tonne to 2030 to limit temperature increase to below 2°C.⁴⁰ A long-term pricing pathway is particularly important given that under Phase 4, the ETS cap is set to reach zero by 2058. **Delaying action now will likely result in a steep and sudden increase in the price of emission allowances in the future, to the detriment of business planning.**

More accurate pricing of carbon could be achieved through the introduction of a steadily increasing floor price within the ETS, looking out to 2050. California has set an auction price reserve for its ETS, starting at \$10 per tonne in 2012 and increasing each year by 5% plus inflation. Unilateral carbon pricing may also be in many countries' own interests thanks to the associated non-climate benefits, such as lower levels of air pollution.⁴¹

To ensure a just and managed transition⁴² for ELLs exposed to competition from markets with less ambitious climate policies, the introduction of a European floor price would need to **be accompanied by a continued scheme to provide proportionate financial support to those industries and facilitate their access to long-term contracts for low-cost renewable energy.**⁴³ ELLs should also be supported in adopting more circular business models, which can improve competitiveness by reducing their raw material costs and/or developing new offerings suited to a Paris-compliant global market. REINVENT, a Horizon 2020 research project considering value chains

³⁸ Renewable UK (September 2017) *Offshore Wind Industry Investment in the UK*

³⁹ European Commission (February 2018), Revision for Phase 4 of the EU ETS (2021-2030): https://ec.europa.eu/clima/policies/ets/revision_en

⁴⁰ <https://www.carbontracker.org/reports/carbon-clampdown/>

⁴¹ IMF (January 2016) *After Paris: Fiscal, Macroeconomic, and Financial Implications of Climate Change*

⁴² For more on ensuring a just transition, see E3G (October 2018) *How to Ensure a Just and Fast Transition to a Competitive Low-Carbon Economy For The EU*

⁴³ UCL (February 2018) *UK Industrial Electricity Prices: Competitiveness in a low-carbon world*

and the implications of decarbonization for emission intensive sectors, will provide an important framework for understanding where assistance is most needed.⁴⁴ Doing so can help to ensure a smooth transition, whilst acknowledging the inherent risks for industries that remain economically important to Europe.

3.5 Higher Standards

Stringent and well-enforced standards have a critical role to play in facilitating new products to come to market whilst delivering environmental improvements. For example, with 80% of a product's environmental impact determined at the design stage,⁴⁵ product standards have been critical in improving the quality and environmental impacts of products, especially when applied consistently across the Single Market.⁴⁶ According to the Commission's 2016 Impact Assessment, the energy consumption of the average product will be 18% lower by 2020 than would have been the case without the introduction of the Ecodesign Directive.⁴⁷ Similarly, consistent signals sent by the EU passenger car emission regulations have delivered significant investment in innovation, skills and job creation, and are partly responsible for the fact that the automotive sector now ranks fifth in R&D intensity globally⁴⁸ as well as the growth of the electric vehicles market.

Looking ahead to 2030, **standards on energy and resource use should be steadily increased across the EU to drive up investment in efficiencies**, thus boosting the added value and profit for the same, or similar inputs. Ecodesign standards could be broadened to include more products (especially plastics, given current political support for the Plastics Strategy), and standards will have to be introduced on future technologies like connected and autonomous vehicles in a way that encourages rather than hampers innovation.

3.6 Sending the right macroeconomic signals

The EU and its institutions can send powerful macroeconomic policy signals to the market through its fiscal and monetary policy. As such, **spending and loans from bodies like the European Central Bank (ECB) and EIB, as well as the CAP and public procurement should be aligned with the Paris Agreement.** Ongoing initiatives such as greening the European Semester are therefore very welcome, but greening efforts must be applied across the board. Research from the LSE Grantham Institute finds a carbon-intensive skew of Quantitative Easing (QE) purchases by the ECB (62% of ECB corporate bond purchases are in sectors contributing to 59% of the Eurozone's GHG emissions), undermining signals that financial regulators are making about the risks associated with high-carbon investments. This could be addressed by QE purchasing of green bonds, for example.⁴⁹

Under the new Multi-Annual Financial Framework (MFF) for 2021-2027 (InvestEU), 25% of the Budget is ringfenced for climate or resilience-aligned spending. InvestEU also sets out four windows for funding access: projects falling under the sustainable infrastructure window are subject to climate, environmental and social sustainability proofing to "minimise detrimental impacts and maximise benefits on climate, environment and social dimensions". Whilst this is a welcome start, **all projects receiving funds from the EU should be subject to this sustainability proofing requirement** – particularly through the CAP, which could be a powerful tool to encourage better natural capital management if payment were more conditional on doing so – and 100% of the Budget ought to be

⁴⁴ https://cordis.europa.eu/project/rcn/206259_en.html

⁴⁵ T. E. Graedel et al (1995) *Industrial ecology*

⁴⁶ Aldersgate Group (January 2017) *Amplifying Action on Resource Efficiency, EU Edition*

⁴⁷ The Economist (October 2016) 'The EU is reviewing the policy that makes its appliances so energy efficient'

⁴⁸ BuroHappold Engineering (December 2017) *Help or Hindrance? Environmental Regulations and Competitiveness*

⁴⁹ S. Matikainen et al (May 2017) *The climate impact of quantitative easing*

spent in a way that ‘minimise[s] detrimental impact’.⁵⁰ How these criteria are defined and audited will be important and must be linked to the 2050 long-term strategy on climate change. The EU cannot justify publically funding projects that cause environmental or social harm.

Public procurement, accounting for around 14% of the EU’s GDP,⁵¹ is amongst public institutions’ most significant interventions in the economy. As such it is essential that the procurement policies in the EU and its Member States be centrally aligned with EU climate, adaptation and circular economy goals and support domestic supply chains. The Commission has recognised the potential of reformed public procurement policy in driving sustainable business models via the Circular Economy Package handbook on public procurement and is now gradually implementing these across a range of different products, such as furniture.⁵² The next step is to accelerate and extend this, with criteria incorporating water use, energy use, transport modes, construction materials and other environmental indicators, and to encourage the application of these criteria across different Commission departments and Member States.

⁵⁰ For a further discussion on how the EU can green the MFF and spending see E. Yrjö-Koskinen, M Nesbit (2018) *Aligning EU resources and expenditure with 2030 objectives*, IEEP Policy Paper

⁵¹ Directorate-General for the Internal Market, Industry, Entrepreneurship and SMEs (April 2016) Preventing corruption – new public procurement rules as of April 2016: <http://bit.ly/2cGTmcn>

⁵² European Commission, EU GPP criteria: <http://bit.ly/1hHx4X9>

4 How to get there? Engaging financial markets in green investment

The annual investment gap to meet the current 2030 Climate & Energy Package is estimated at €178bn, and the EIB estimates the overall investment gap in transport, energy and resource management infrastructure at an annual €270bn.⁵³ This gap – while considerable – is less than 3.5% of the value of the EU's capital markets.⁵⁴ **Engaging the financial markets in green infrastructure can raise this investment and provides an opportunity to better connect finance with the real economy, delivering benefits to people across Europe whilst also improving the stability of the financial system over the long-term.**

Many of the recommendations from section 2 will help to boost private sector investment by increasing the supply of bankable, mature and attractive projects, and increasing investor confidence with greater clarity on long-term direction of travel. In addition, meeting this investment need will require creating an enabling landscape in which green finance can flourish. In the near term, the EU can do so by reconfirming its commitment to the Commission's Sustainable Finance Action Plan (hereafter The Action Plan), and specifically tackling the short-termism of financial markets, improving definitions and information available to the market and reducing private sector risk to encourage investment.

4.1 Tackling short-termism of the financial markets

Climate change presents considerable risks for the financial system through regulatory, transition and physical changes.⁵⁵ Physical impacts of climate change may have a negative impact on the EU by reducing economic growth potential and forcing increased fiscal spending on extreme weather events and changing conditions.⁵⁶ The EU has already increased financing for regions hit by natural disasters in July 2017 by nearly €10bn in response to the growth in annual natural disasters.⁵⁷ In terms of transition and regulatory risk, modelling suggests that if fossil fuels assets are stranded due to reduced demand and/or regulatory restrictions, the global economy could lose \$1-4tn (for scale, the 2008 crisis cost \$0.25tn).⁵⁸ With many European investments, such as pension funds, still heavily involved in high-carbon assets, a drop in valuation in line with the internationally agreed direction of travel could be highly destabilising. As a first step, **the Commission should assess short, medium and long-term implications of climate change scenarios on EU debt and the financial markets to identify areas of future risk for the finances of the EU and its citizens.**

Many of these risks are inherently long-term and are therefore likely to be missed by standard financial analysis which tends to apply short-term thinking through risk and valuation models, fed by

⁵³ Communication from the Commission to the European Parliament, the European Council, the Council, the European Central Bank, the European Economic And Social Committee and the Committee Of The Regions (8 March 2018) *Action Plan: Financing Sustainable Growth* COM/2018/097 final

⁵⁴ European Commission (18 February 2015) *Green paper: Building a Capital Markets Union* COM (2015) 63 final

⁵⁵ Bank of England Governor Mark Carney identified these as transitional, physical and regulatory risks in his 2015 Tragedy of the Horizon speech

⁵⁶ IMF (January 2016) *After Paris: Fiscal, Macroeconomic, and Financial Implications of Climate Change*

⁵⁷ European Parliament Policy Department for Budgetary Affairs (April 2018) *The EU spending on fight against climate change*

⁵⁸ J. Mercure et al (2018) *Macroeconomic impact of stranded fossil fuel assets*, Nature Climate Change vol. 8, pgs 588–59

the lack of adequate information to assess climate-related risks. There are a range of regulatory changes the EU could make to encourage more long-term thinking in financial markets. Much of this is captured in the The Action Plan and is also occurring across the G20. To be in a position to write the rules of this large-scale international shift in approach, **the new Commission and Parliament must accelerate and build on the Action Plan, harnessing the current momentum.**

4.1.1 Clarifying fiduciary duty

Better application of long-term thinking could be required by reforming fiduciary duties. Fiduciary duty requires those entrusted with managing money (fiduciaries) to act prudently to protect the interests of those whose money they are managing (e.g. savers).⁵⁹ However, the scope of duties in relation to environmental, social and governance (ESG) factors are not clearly defined in law. To address this, **the next Commission should pursue the work announced as part of The Action Plan to develop legislation to clarify the fiduciary duties of investors pertaining to sustainability considerations.** The legislation should be clear that investors' fiduciary duties should include consideration of financially material ESG factors, building on existing literature and industry reviews.⁶⁰ The duty should extend across the investment landscape, applying to asset managers and intermediaries (including credit rating agencies) in line with the findings of the EU's High Level Expert Group on Sustainable Finance (HLEG).⁶¹

4.1.2 Adjusting capital weighting

Greater stability could also be encouraged by adjusting capital weighting requirements for green infrastructure investments. European financial markets are subject to 'capital weighting' requirements for financial institutions to hold money against their investments in reserve to protect against bankruptcy. This has resulted in less investment in illiquid infrastructure compared to other markets like Canada, where regulations allow for a lower degree of capital reserves.⁶²

Investing in infrastructure over the long term as a means of increasing financial stability should be supported by prudential rules. The new Commission should build on The Action Plan and **carefully consider the case for introducing a 'brown penalty factor' to increase capital weighting for 'brown' investments like fossil fuel projects** to disincentivize investments that exacerbate a high carbon, higher risk financial system, without lowering prudential standards or introducing additional risk to the market. The Commission should also consider the possibility of lowering capital weighting for green infrastructure on the grounds that it is less threatened by transition, regulatory, and/or physical risks (known as a 'green supporting factor'). If done with care and sufficient lead in time for implementation, this could help level the playing field for green investment but will require the **industry to work with the Commission to collect evidence to support adjusted risk weightings.**

4.2 Improving information available to the market

High quality data is vital for making sound investment decisions – it is used to measure risk, performance and potential for new revenue. Currently, the information available on green factors, such as revenue arising from 'green' activities and the impacts of climate-related risks and opportunities is not sufficiently well captured. This obstructs green investment, as the financial industry cannot accurately analyse whether green investments convey lower risk or are more profitable, or to identify climate-related liabilities across portfolios. To tackle this, the Commission needs to act on two fronts: improve definitions to set out what constitutes a "green investment" and

⁵⁹ ShareAction (October 2014) *Fiduciary duty explained*

⁶⁰ Law Commission (July 2014) *Fiduciary Duties of Investment Intermediaries*

⁶¹ EU High Level Expert Group on Sustainable Finance (January 2018) *Final report*

⁶² FT (21 November 2017) 'UK life insurers can help boost infrastructure'

require more comprehensive business and investor disclosure on the financial risks and opportunities linked to climate change.

Improved information can also be gathered and shared by a **European Observatory for Sustainable Finance as recommended by the HLEG on Sustainable Finance, which tracks progress on green financial flows, establishes the scale of investment required for both public and private investors, and provides the input for evidence-based policymaking.** A European Observatory would also be well suited to perform a scenario-analysis or climate risks to EU debt and financial stability, suggested above.

4.2.1 *Establishing better definitions*

To facilitate the alignment of financial markets with the EU's environmental objectives, the next Commission will need to press on with the work to establish a Europe-wide definition or "taxonomy" on sustainable finance. **Providing clear, implementable definitions on what constitutes green investment will reduce both risk and investment costs for financial markets and should form the basis of developing green financial products** like bonds and securities. In developing a system of classification, the upcoming Commission (and Technical Expert Group) will need to strike a careful balance between providing clarity and ensuring that new definitions and standards can accommodate new innovative green technologies and financial products. Consistency with standards being developed in other markets, such as the Green Financial Management Standard being developed by the British Standards Institute, and China's efforts to establish a common language on green finance⁶³ will also be important to reduce investment friction across borders.

The development of a robust green taxonomy should be fully integrated with InvestEU's sustainability proofing requirement, as any divergence will reduce the clarity that investors need to create a deeper green finance market. Defining a taxonomy must not be neglected by the incoming Commission, and it must be developed in a way that can evolve over time to suit the needs of the market.

4.2.2 *Encouraging better disclosure*

Better information for the market is most usefully delivered by providing investors with relevant data in Annual Reports, as the Non-Financial Reporting Directive (NFRD) set out to do. The Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) recommendations go further, establishing a forward-looking framework for disclosing physical, transitional and regulatory risks, including undertaking scenario planning for relevant potential future climate conditions.⁶⁴ These should be incorporated into the NFRD guidelines, to help ensure widespread adoption of the TCFDs.

In parallel, the Commission should work with Member States to make TCFD recommendations mandatory at the national level in due course, sharing best practice such as Article 173 of the French law on energy transition for green growth. It must also support a trial and error approach, as corporate climate scenario risk analysis is very new. Companies need a safe way to trial TCFD-aligned disclosure without the fear of raising investor concern. To help businesses get to grips with the recommendations and ensure smooth implementation, **the upcoming Commission should establish the European Corporate Reporting Lab as per The Action Plan without hesitation.**

4.3 *Using public funds to reduce risk*

⁶³ EIB & Green Finance Committee of China Society for Finance and Banking (November 2017) *The need for a common language in Green Finance*

⁶⁴ Financial Stability Board Taskforce on Climate-related Financial Disclosures (2017): <https://www.fsb-tcfd.org>

Simply put, the cost of investment is linked to levels of risk of not generating an acceptable return on investment. **EU institutions can play a significant role in reducing that risk for investors through risk-sharing guarantees to make low carbon investments as - or more - appealing than their non-green equivalents.**

Using public funds to de-risk projects and leverage private finance is a powerful means of increasing investment. The EU as a bloc has a greater capacity to absorb financial loss than its Member States and the private players that make up its financial system. As such, it is well placed to provide risk-sharing guarantees against potential financial loss through InvestEU and the European Fund for Strategic Investment (EFSI). This is particularly suitable in the current context of historically low interest rates, but must be set up in such a way that is resilient to future economic or financial downturns, if it is to maximise long-term infrastructure and job creation benefits.

For example, the Commission has developed a flexible guarantee facility for energy efficiency through the Smart Finance for Smart Buildings initiative, to be deployed at national level. This guarantee is expected to unlock €10bn of public and private funds to 2020 for energy efficiency, and to be instrumental in incentivising the development of financial products for energy efficiency, thanks to reduced risk profiles for banks and other investors. **Further guarantees in priority policy areas (e.g. industrial energy efficiency, natural capital) and regions in the short to medium term should be a focus for the next Commission, to facilitate green investment and lending to kickstart a wider green finance market across Europe.** The Commission and EIB could further consider sponsoring other risk-sharing instruments like emerging resilience bonds as a means of limiting the EU's own risk.⁶⁵

National Promotional Banks (NPBs) can also play a key role, using their knowledge of local markets to improve reach and impact of EIB funding. In November 2017, five NPBs and the EIB launched Marguerite II, a €700m infrastructure fund which aims to act as a catalyst for investment in renewables, energy, transport and digital infrastructure, to implement key EU policies, following the success of the Marguerite Fund, enabled by the EFSI which guaranteed €100m of EIB funds, allowing the bank to invest in higher risk projects.

⁶⁵ Re.Bound (September 2017) *A guide for public-sector resilience bond sponsorship*

5 Conclusion

There is real potential for the EU to limit costly environmental damage and take the lead in an increasingly competitive global low carbon economy, as long as it acts decisively now. Coming shortly after the release of the IPCC's 1.5°C Special Report, this paper has argued that **the EU must establish a level playing field for green infrastructure and green investment, by fully aligning targets, policies and spending with the Paris Agreement goal to remain within 1.5°C of global temperature increase.** In the next five years, the next European Commission and Parliament must set the growth of a net zero, resource efficient and resilient economy as its legislative priority, focussing on targeted measures to boost a pipeline of projects whilst creating an enabling investment environment to fund such projects. In this way, the EU can meet its Paris Agreement and SDG commitments cost effectively and in doing so, build a competitive low-carbon economy fit for the 21st Century.

The building blocks to 2030



