

# **Better Recovery, Better World: Resetting climate action in the aftermath of the COVID-19 pandemic**

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**The Coalition  
of Finance Ministers  
for Climate Action**

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**Better Recovery, Better World:  
Resetting climate action in the aftermath of the COVID-19  
pandemic<sup>1</sup>**

**Group of Experts  
REPORT**



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<sup>1</sup> The paper was prepared at the request of the co-chairs of the Coalition of Finance Ministers for Climate Action ('the Coalition'). The co-chairs "invited Nicholas Stern and Amar Bhattacharya, advisors of the co-chairs, with input from the IMF, the OECD, the WB and WRI, to prepare a paper on the implications of the Coronavirus on recovery and long-term growth strategies from the finance ministers angle." The paper has benefitted from feedback from Coalition members and other institutional partners. The views expressed, however, are those of the authors and do not necessarily reflect those of the Coalition or its members.

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## Foreword

The Coalition of Finance Ministers for Climate Action ("the Coalition") is a group of fifty-two finance ministers, engaged in efforts to address climate change through economic and financial policies according to the six Helsinki Principles. Peer learning and knowledge exchange plays a fundamental part in the Coalition's success.

As part of the core mandate of Ministries of Finance, which is the design and implementation of sound macro-economic, fiscal and financial policies, the economic and social impacts of climate change are becoming increasingly relevant for the wellbeing of our society. This report examines the implications of the COVID-19 pandemic crisis on climate policies from the angle of economic policies and offers a set of policy options for Finance Ministers.

The COVID-19 pandemic has unleashed suffering and economic crises of historic proportions, adding to the urgent existing need for accelerated transitions to low-carbon economies. Concerns were raised about how the economic fallout from COVID-19 would affect climate action. Following immediate action to manage the crisis, policy-makers need to design and implement recovery strategies that support sustainable growth over the medium and long term. The need for sound analysis, in line with the Helsinki Principles, is all the more critical given the challenging financial and economic circumstances.

This Report is a working document. Opinions or points of view expressed are those of the authors and do not necessarily reflect the views of the Coalition or its members. The main findings of the Report will be presented to Finance Ministers at a later stage, after further preparatory work, with a view to gaining political guidance as well as direction for the Coalition's further work priorities.

The primary audience for this report is policy makers at Ministries of Finance and Economy that are responsible for economic policy and cross-sector coordination. The report will also be of great interest to other ministries, institutions and academia working to support strong, inclusive, and sustainable recoveries that will help address climate change.

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Co-Chairs of Sherpas, Coalition of Finance Ministers for Climate Action

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## Executive Summary

**The world has been transformed by the COVID-19 crisis.** Beyond its tragic human costs and loss of life, the pandemic and the necessary lockdowns have resulted in severe economic impacts with immense job losses and a major threat of global depression. Impacts will differ across countries, with emerging markets and developing countries also hit by historic declines in commodity prices, tourism and remittances and unprecedented reversals in capital flows, which have fuelled a deep loss of confidence and exacerbated vulnerability to other potential shocks. The outlook is uncertain. We are in uncharted territory and a fast bounce-back cannot be guaranteed. It could take several years to recover from this crisis, with long-lasting effects.

**The world was on an unsustainable and vulnerable path before the crisis and the recovery must avoid the dangers and fragilities of the past,** not only with respect to climate but more broadly with respect to the environment and planetary boundaries, and with increasingly inequitable growth and a lack of social cohesion.

**There can be no going back to the old normal.** Attempts to unwind existing environmental regulations and policies and return the economy to the old model, which was characterised by low productivity, high inequality and climate/environmental risk, would be misguided and could severely hinder the ability of countries to respond to the multiple challenges and forces of change they are facing.

In this context, **finance ministers will need to reflect on comprehensive and ambitious recovery/stimulus packages that can help resuscitate economies, restore employment and also build a better future** – one that is more inclusive, sustainable and resilient. A common challenge for all finance ministers will be around jobs, both in dealing with the immediate impacts of jobs losses, but also managing the structural challenges ahead that will see a rapid shift in skills and the way we work.

**Finance ministers have a unique opportunity to design recovery packages with well-articulated growth and investment strategies that create the right jobs and build a better future.** Recovery packages that aim to grow the denominator of debt/GDP through productive investment are also the most attractive route to debt sustainability.

**The right investments will need to be fast, labour-intensive in the short run, and have high multipliers and co-benefits,** including for air pollution, climate and resilience. Investments with these characteristics include clean physical infrastructure such as in renewable energy assets and grid modernisation, building efficiency investment in the form of renovations and retrofits, education and training in the skills of the future, research and development in clean technologies, rural support and investment in climate smart agriculture, and of great importance in light of COVID-19, natural capital investment to improve ecosystem resilience and restoration of degraded land and habitats. There are strong arguments, supported by mounting evidence, that fiscal multipliers from these types of investments outperform those of alternative investments. For example, these investments can create more and better jobs in the short run in growth industries such as renewable energy, compared to high-carbon alternatives with a high risk of asset and job stranding.

**There are a range of tools that can help finance ministers get the investment decisions right and maximise the benefits for jobs and growth.** A well-being lens can help to go

beyond green to consider a range of trade-offs and other factors critical to people's well-being. Green budgeting can help to better align with green stimulus. Project-level guidance and checklists can ensure proper project evaluation. Sector-level guidance can be especially helpful around cities/urban contexts, where most stimulus investment will take place. Tools for resilience, broadly defined, can help to ensure we go beyond mitigation to consider all investments through a resilience lens, including resilience of nature and other assets.

**Recovery packages will also need supporting policies to maximise the benefits of the investments, including carbon prices, supportive regulations and bailout conditions.**

Falling fossil fuel prices provide an opportunity for carbon pricing and inefficient subsidy reform, which can provide a source of much needed revenues, and can be part of wider fiscal reforms to restore fiscal sustainability. Complementary and supportive regulations and competition policies can provide clear signals, policy certainty and induce innovation in growth sectors, lowering the level of public stimulus expenditures required to bring an economy back to full activity. All policies will need to carefully consider distributional consequences to ensure a just transition for workers and communities.

**Finance is crucial for recovery and long-term transformation but will be more challenging in the post-COVID environment.** Recovery packages will be set in a difficult macro-fiscal context where fiscal expansion is necessary but severely constrained in many countries. Emerging markets and developing countries will face an extremely challenging situation where all sources of finance will be more constrained. Many will likely face debt difficulties and heightened vulnerabilities. Countries will need to find ways to create fiscal space and unlock finance for the best growth and job enhancing investments available to them. They will also need to anticipate the substantial investments needed to drive the transformation to a low-carbon climate-resilient economy.

**As such it will be critical to mobilise all pools of finance and utilise them more effectively.** This includes strengthening domestic public finance foundations, bolstering and making more effective use of international climate finance, and enhancing the role of international and national development banks. A range of climate finance instruments and other options are emerging, including debt for nature swaps, that can be scaled up through international collaboration, helping countries unlock fiscal space. It will also be crucial to augment substantially the mobilisation of private finance and align all finance with the Paris Agreement and Sustainable Development Goals (SDGs). This will involve working with The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) and others to shift the financial system, through the three Rs set out in the work of Mark Carney and his team: reporting, risk management and returns.

**The global context and the recovery packages we need will have important implications for the priorities and work agenda of the Coalition of Finance Ministers for Climate Action** ('the Coalition'); finance ministries will be central in the design and implementation of these packages. Many of the policies that the Coalition has been working on can help support a better recovery. Some elements of the work will be of particular benefit, e.g. revenue-enhancing measures and pricing, including carbon pricing and inefficient fossil fuel subsidy reform; some elements will need to be expanded, including around mobilisation of private finance, and in other cases some new work will be needed, including around complementary regulations. (See Box 1).



### **Box 1. Implications from COVID-19 for the priorities and work of the Coalition.**

The Coalition is actively engaged in discussions on green recovery with a view to sharpening the agenda and work under the six Helsinki Principles. There is much work already underway that the Coalition can build upon, but also new areas that should be given priority in the work programme. The work programme could evolve in the following directions:

**Helsinki Principle 1: Align.** The work on long-term strategies (anchored by SITRA and the World Bank) provide long term direction but may need to focus on specificity around links to investment programmes and projects, and how to use recovery packages to accelerate long-term transformation.

**Helsinki Principle 2: Share.** As more packages are prepared, released and implemented, Coalition members can work together to share and learn from their experiences. Policy evaluation of green recovery packages would enable finance ministries to learn from best practice and avoid mistakes. A common challenge will be around jobs, both in dealing with the immediate impacts but also structural challenges beyond.

**Helsinki Principle 3: Work.** The Coalition's carbon pricing work is even more urgent now and could focus on the opportunity from low fossil fuel prices to reform inefficient fossil fuel subsidies and fuel taxation in countries where political economy and institutional factors are favourable. In addition, it will be important to consider the role of supporting and complementary regulations in a crisis and to work on ways to better integrate broader well-being goals into climate policy. Policy work could also focus on bailouts and how they can be most effectively structured, especially as countries move from rescue to recovery.

**Helsinki Principle 4: Prioritise.** The work could be expanded to develop a better understanding of fiscal multipliers, and to improve tests for evaluation of stimulus packages. There is also a need to consider some simple and universally applicable green budgeting tools that can be developed and put in place in time for stimulus packages. A focus on implementing green public purchasing approaches, working closely with the OECD, could also be extremely helpful in greening recovery packages. In addition, support for the PEFA Climate pilot testing programme could help improve the ability of Public Financial Management (PFM) systems to support the implementation of government climate change activities, including NDCs. Lastly, for those countries that are both vulnerable and debt constrained, there is merit in looking at options for solutions linking debt to green recovery.

**Helsinki Principle 5: Stimulate.** Recognising the pressures on public balance sheets because of the COVID-19 response, the work needs to cover mobilisation more broadly. The crisis brings out the importance of international public finance for mobilisation, especially in emerging markets and developing countries. This will involve the critical role of multilateral development banks (MDBs)/ development finance institutions (DFIs), as well as ministries of finance, who can develop institutions and instruments to leverage private finance for recovery investments; this context highlights the importance of blended finance. There is also a need to continue the work on shifting the financial system, including through the work on reporting (TCFD), green taxonomies, risk management and returns. For vulnerable countries, it will be important to build on the work on financial preparedness against climate and disaster shocks in the time of COVID-19.

**Helsinki Principle 6: Engage.** The work needs to focus on understanding evolving country needs during their COVID-19 responses, to help support them implement and enhance NDCs in this challenging period. The focus on embedding economic advisors in finance ministries can be one immediate priority. Also essential is building on existing work to ensure that NDCs are developed in close collaboration with finance ministries; the Coalition's work shows that these NDCs are more fiscally sound and better consider macro-economic factors and wider financial and private sector implications. It is important that NDCs are situated within central economic and fiscal policies and are mainstreamed into Public Financial Management (PFM) systems.

## Introduction. Climate action in the COVID-19 context

**The world has been transformed by the COVID-19 crisis.** Beyond its tragic human costs and loss of life, the pandemic and the necessary lockdowns have resulted in a sharp contraction of aggregate demand, supply disruptions, loss of revenues for many service sector businesses and unprecedented increases in unemployment. We are in uncharted territory and a fast bounce-back cannot be guaranteed. Economic impacts will differ across countries<sup>1</sup> and it is likely to take several years to recover from this crisis, with long-lasting effects. There can be no going back to the old normal.<sup>2</sup>

**The demand, output and employment impacts are expected to be much greater than the 2008 financial crisis, with truly global reach.** The impact on many emerging markets and developing countries, in particular on youth and the fledgling middle classes, is already immense and with potentially long-lasting and deeply damaging consequences. Historic declines in commodity prices, tourism and remittances and unprecedented reversals in capital flows have fuelled a deep loss of confidence and exacerbated vulnerability to other shocks, including flooding and insect plagues.

**Finance ministers have had to respond quickly and act decisively.** Their immediate focus has been on shaping and implementing rescue plans and securing international support where needed. These have involved augmented fiscal support to prevent economies from imploding and to protect lives and livelihoods. Given the magnitude of the shock and uncertain duration, the amount of support that will be needed is potentially huge, with big implications for debt and fiscal positions.

**Finance ministers will now need to design and introduce comprehensive, longer time horizon stimulus packages to promote recovery and build back better.** The quality, content and strength of the stimulus packages will determine both economic and environmental outcomes for decades to come.

**At the same time, the climate and nature crisis remain just as pressing, requiring urgent action.** The enormous impact of the COVID-19 crisis on human well-being and health cannot allow the world to be diverted from a strong response to the climate and nature crisis. Concentrations of greenhouse gases in the atmosphere, largely unaffected by the economic downturn, are likely to keep rising and the world could see temperatures far outside human experience over the next few decades.<sup>3</sup> Much stronger action on mitigation, resilience and adaptation will be necessary. The importance of protecting nature has also become much clearer and sharper in the COVID-19 context: failure to protect nature has increased the risks of infectious diseases emerging and led to immense social and economic damage. Natural capital and nature-based solutions have moved much higher up the agenda.

**There are several paths countries can take in recovery.** All have risks, but the path of austerity that leads to a great depression would be particularly damaging – socially, economically and environmentally. As damaging would be an attempt to try to unwind existing environmental regulations and policies and return the economy to the old model characterised by the dangers caused by the destruction of natural capital and climate change; the risks from an attempt at a high-carbon recovery, locking in further rises in global greenhouse gas emissions and destruction of nature, are immense.

**A path to build back better, where carefully designed recovery packages aim to grow the denominator of debt/GDP through productive investment, is the most attractive route to debt sustainability. This will require expenditures on investments that are fast, labour-intensive in the short run and have high multipliers.** In this context, there are strong arguments, supported by mounting evidence, that green investments perform well, if not better than alternatives, across most of these dimensions. Green investments can bring more and better jobs than alternative high-carbon investments with a high risk of asset stranding. They also address climate risk at the same time and have other attractive co-benefits. Green investments are available in a broad range of productive complementary assets, including physical and human capital, knowledge and intangible capital, as well as natural and social capital. It will be important for the Coalition of Finance Ministers for Climate Action ('the Coalition') to build on this evidence and to bring country experience and further evidence to bear.

**Policy reinforcement will be key to driving green investments.** Finance ministers will need to act now to implement strong and supportive policies, backed by strong institutions, for effective delivery of green recovery packages that maximise short and long run multipliers and other benefits of green investments, including high labour intensity. Pricing carbon and pollution, inefficient fossil fuel subsidy reform, and supportive regulations will be central; the first two can provide much needed revenues as part of a well-designed package of wider fiscal mobilisation reform. Looking backwards, policy delay, policy failure, inaction, incoherence and uncertainty will have devastating economic and social effects. Policy inaction on a just transition could be particularly damaging. This is an important lesson from the past. All approaches will have to give strong attention to displacement and provide the right skills to the right people in the right places.

**There will be tremendous challenges around finance and debt that must be overcome.** Finance ministers will also need to act now on unlocking all pools of finance. At the end of the rescue phase, the balance sheets of national and subnational authorities will be stretched – action to resolve debt difficulties in more vulnerable countries could be needed – the firepower of MDBs/DFIs will be stretched, and private finance may be impeded if high risk premia prevail. Strong actions are needed to strengthen domestic public finance foundations and also to enhance international public finance flows. This will provide the finance needed to build back better through robust green recovery packages but also to prepare the foundations for the large investment needs for the transition to net zero over the coming decades. Action on private finance mobilisation, alignment and shifting the financial system will also be key; it will be particularly important to prepare now for ways to unlock private finance.

Development finance, including grant-based support from development banks and agencies, has an important role. It provides much needed resources and can help build capacity in key systems for delivering macroeconomic and fiscal actions, and mobilise and catalyse private finance, including for recovery strategies. To do so most effectively, Coalition members who are providers of development cooperation can support developing country member efforts to implement the objectives of the Coalition. They can deploy financial resources, support policy and regulatory measures, and support and fund the development of key capacities, including for integrating climate objectives and green recovery dimensions into national financing strategies, budgetary processes, fiscal policies and development of financial systems.

***There is a unique window for finance ministers across the world to act fast and put investment in sustainable growth at the centre of a recovery strategy for their countries and the world,*** both in terms of restoring confidence and to secure strong, resilient and inclusive growth and development that respects planetary boundaries.<sup>4</sup>

Public support for climate action remains high across countries<sup>5</sup> and the COVID-19 pandemic has shown we can act quickly and at scale when faced with immense risk. If we miss this opportunity and attempt to return to the dangerous models of the past, the legacy of the pandemic could lead to a whole series of damaging social, environmental and economic emergencies. The consequences of a prolonged global depression could be profoundly damaging and unmanaged climate change catastrophic.

# Section 1. Designing strong investment strategies, programmes and projects

## Summary

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This section provides guidance and tools to help finance ministers to act now to design clear recovery strategies for delivering strong, timely and productive green investment programmes and projects. These projects can contribute to climate change mitigation and adaptation, and can lead to more inclusive, resilient and sustainable growth.

Taking strong and timely action will mean facing the challenges of preparing green investment programmes and projects, many of which are not new. Smaller investment programmes and projects face fewer challenges and can be scaled up rapidly, boost employment, restore growth and deliver significant environmental benefits. At the same time, finance ministries can prepare for larger medium- to long-term sustainable infrastructure investments that drive long-term productivity and low-carbon transformation.

Countries will need to overcome several challenges if they are to design successful medium- to long-term investment strategies, programmes and projects. For infrastructure investments, there are institutional and political challenges across countries. On top of these, COVID-19 has increased the urgency of ensuring investments are sustainable and resilient, but sustainability is not yet well ingrained in planning, prioritisation, procurement, materials or construction.

As countries find ways to accelerate sustainable investment programmes and projects, there is much to be gained by learning from one another and from international support. Nearly 80 per cent of finance ministries or planning respondents in a recent NDC Partnership survey on COVID-19 indicated an interest in learning from other countries on how to deploy stimulus support. There are already initiatives underway to help countries achieve a high level of sustainability in their investments and bring these programmes and projects forward.

How to prepare and implement stimulus packages is the immediate challenge, but one we must face head on and succeed at quickly.

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### 1.1. The first task of finance ministers is to consider investment strategy

**As finance ministers stabilise their economies and health systems, their attention will turn to designing sound and realistic recovery strategies.** A well-articulated growth and investment strategy can be a powerful guide for better stimulus packages. Long-term transformation and decarbonisation strategies articulated in revised Nationally Determined Contributions (NDCs) and other development plans, including industrial strategies and plans to tackle inequality,<sup>6</sup> can be valuable inputs in setting strategic directions that are inclusive, resilient and sustainable. The French-German principles for recovery place emphasis on green and digital investments.<sup>7</sup> The paper by SITRA for the Coalition under Helsinki Principle 1, which examines member countries' long-term decarbonisation strategies, also provides helpful guidance.<sup>8</sup> This work finds differences in country strategies in terms of geography and environment, the technical solutions that are viable and available to them, and their economic and social structures. Yet many challenges are relatively similar. For developed countries, challenges in common include distributional impacts, the required behavioural

changes by households (e.g. for home heating technology, mobility, and diet) and availability of new technologies. For less developed countries, the challenges include adaptation and emissions reductions, while improving economic growth and poverty reduction.

**The role of finance ministers is key in designing stimulus packages;** they can integrate different investment ideas, including sectoral and cross-sectoral perspectives, and ensure there is a whole-of-government approach anchored in the sectoral transitions that are needed. A culture of working in silos will need to change if these different aspects of a better recovery are to be effectively incorporated into recovery plans.

**It is both sensible and the right time for finance ministers to look closely at recovery packages from the perspective of long-term strategy and sectoral transformation.** Learning from cross-country perspectives can be helpful in developing these strategies. A powerful example where long-term strategy has helped drive a better recovery and transformation is the European Green Deal and the road map of actions that had been adopted before the pandemic.<sup>9</sup> In part, because of the European Green Deal, Europe has been well-positioned to show leadership in shaping a better recovery, with many European countries setting out strong national recovery packages.<sup>10</sup> Germany, for example, adopted a recovery package that addresses both short-term stabilisation and medium to long-term transformation, particularly focusing on green mobility, energy transition and compliance with climate targets.

**There is also an urgent need for finance ministers to embrace a more active role in the planning and implementation of NDCs,** and to share experiences. This can help in designing recovery packages; NDCs can inform and benefit this process, while the design of the packages can also help to raise the ambition of NDCs.

Helsinki Principle 6 aims to encourage finance ministers to engage actively in the preparation, implementation and review of the NDCs due to be submitted prior to COP26. This work stream of the Coalition aims to: profile existing efforts by finance ministries to engage in different facets of NDC development and implementation; identify potential obstacles impeding their greater engagement, and opportunities to overcome them; prepare 'good practice' guidance aimed at encouraging finance ministries to stretch beyond their current level of involvement on NDC issues; disseminate this guidance and good NDC examples via a range of distribution channels; and to learn from this current NDC cycle for use in future NDC updates.

The work under Helsinki Principle 6 now needs to focus on understanding country needs as they evolve during their COVID-19 responses, in order to help support them to implement and enhance NDCs in this challenging period. In April 2020 the NDC Partnership Support Unit gathered input from developing country members, which included asking what support would be most helpful for country-specific pandemic recovery efforts. The surveys targeted finance ministries. Building on the survey's outcomes, the NDC Partnership will offer developing country members funding to rapidly embed economic advisors within their finance ministries. Also essential is building on existing Coalition work that shows NDCs developed in close collaboration with finance ministries are more fiscally sound and better consider macro-economic factors and wider financial and private sector implications. It is important that NDCs are situated within central economic and fiscal policies and are mainstreamed into Public Financial Management (PFM) systems.

1.2. The next task is the preparation of investment programmes and projects.

**Investments are available in a broad range of productive complementary assets,** including physical infrastructure and human capital, knowledge and intangible capital, as well as natural and social capital. Most countries are not, to any significant degree, prepared with investment programmes and projects, let alone green investments in these assets, although many have started to develop them as part of their NDC responses.

Developing countries face many challenges in preparing these investments, especially physical infrastructure. They are likely to need strong international support in the preparation and implementation of their stimulus programmes and projects. International financial institutions (IFIs) will have an important role to play and have been enhancing client country support under the leadership of the IMF and World Bank. Assistance and support are also available from the Global NDC Partnership and the Global Infrastructure Facility. Developing countries will need direct support and assistance preparing investments – special facilities to help with capacity building, implementation and finance are likely to be needed – and indirectly through concessional support from bilateral agencies.

It is important to get sustainable investments in place as quickly as possible – these will also contribute to long-run transformation and the drive to net-zero emissions – and this will involve strengthening public investment management and governance.

**Governments will need to strengthen public investment management and governance if they are to deliver an effective stimulus and make progress in greening public investment.** In economic crises, attention might be given to large and complex infrastructure projects that can have a transformative impact through the use of low-carbon technologies. However, any large clean infrastructure project that is 'shovel-ready' will have been designed well before the crisis; it will take time to design, approve, procure and launch a generation of new, greener, more resilient large-scale programmes and projects. Most countries are not yet at this stage and even where these projects do exist, a project that was ready to go before the COVID-19 crisis hit may no longer be. Project feasibility studies, cost-benefit analyses and financing arrangements may all have to be reviewed after the pandemic, and this may take time.

**Recovery packages can be implemented quickly.** As large-scale sustainable infrastructure investments are likely to take time, finance ministers have the option to consider programmes and projects that can be implemented more rapidly in the early stages of the recovery.

Some large-scale projects may have already been underway before the crisis. Governments can assess these projects and get them restarted, which will help reduce cost-overruns from interruptions in project implementation. But there are also many smaller-scale programmes and projects that can be planned and implemented fast and that have strong multiplier effects in terms of growth, employment and climate payoffs. Many of these will be at the urban/peri-urban level and these areas are the drivers of economic growth across most Coalition countries; most stimulus investments will be urban in nature, increasing the importance of spatial planning around city design and land-use. Activities like renewable energy deployment, e.g. rooftop solar programmes, some energy efficiency measures such as loft insulation, rail electrification programmes, new cycleways and widening of footpaths, micro-mobility and active modes of transport including bicycles and e-



bikes, better road space management, wetland and landscape restoration, reforestation, flood protection, irrigation and environmental management programmes can be proactively identified and accelerated. There is no reason to wait: they can start now with appropriate social distancing protocols or other low-cost, effective protective measures in place, such as face masks and shields.

**Smaller-scale projects are likely to be labour-intensive but not import-intensive or susceptible to offshoring.** They also typically use a higher proportion of locally sourced materials and labour. They can be rolled out across cities and regions, helping to counterbalance the negative economic effects of the crisis by boosting employment and growth in the short term, while also achieving long-term payoffs (Box 2).<sup>11</sup>

### **Box 2: Job creation potential from green programmes and projects**

Global estimates show the high job creation potential of renewable energy and energy efficiency: while \$1 million spending in fossil fuels would create 2.7 full-time equivalent jobs (FTE), that same spending would create 7.5 FTE jobs in renewable energy and 7.7 FTE jobs in energy efficiency. Thus each \$1 million shifted from brown to green energy would create a net increase of five jobs due to the higher labour intensity of the renewable energy sector.<sup>12</sup> Globally, one estimate is that the wind and solar sectors can create 52 million jobs over the next decade, far exceeding the estimated 27 million jobs lost in the transition out of the fossil fuel industry during the same period.<sup>13</sup> In parallel, the energy efficiency industry can respond quickly to new incentives, scale up readily available technologies, and create substantial savings and earnings for households and businesses.<sup>14</sup>

It is important to note the job creation potential in downstream segments of the value chain that can easily be supported by recovery measures, e.g. installations and services, not just in midstream manufacturing. In the solar PV sector, for instance, the job creation potential is even higher for downstream activities than for the midstream manufacturing segment.<sup>15</sup>

'Nature-based solutions' use the forces of nature itself to achieve the triple wins of economic resilience (food and water security), reduced physical risks (flood control, coastal protection and ecosystem health), and reduced carbon emissions (through carbon sequestration and avoided emissions). Investments in nature-based solutions typically create low-skill and fast-implementing jobs: data from the US show that they create an estimated 39.7 FTE jobs per \$1 million invested, or over 10 times the job creation rate of investments in fossil fuels.<sup>16</sup> This is due to high labour intensity and low capital intensity of the investments – factors that also contribute to their high multiplier effects in the local economy.

Overall, the rates of return on resilient infrastructure – whether in transport, energy, water, agriculture or nature-based solutions – typically exceed those on traditional infrastructure, presenting benefit-cost ratios above 4:1, and they make the whole economy more robust.<sup>17</sup> A successful stimulus focus on green investments was demonstrated by South Korea following the 2008 financial crisis, with positive impacts on quality of life,<sup>18</sup> although some negative impacts were reported around nature-based solutions, e.g. with the Four Rivers Restoration project.<sup>19</sup>

**In addition, many of these smaller-scale programmes channel resources through local authorities and civil society organisations.** This will require strong central coordination and capacity but if done well, it is an approach that can help in identifying the best projects and draw on a wide network of local contractors and

suppliers, facilitating implementation through local knowledge. While these programmes will typically respond to locally identified priorities, government can structure programmes to favour investments that support their climate change objectives.

***Scaling up small-scale infrastructure programmes poses its own set of challenges in terms of design, allocation of resources and managing the supply response.***

Governments may need to assess the carbon reductions of projects through use of shadow prices in cost-benefit analyses, guided by the price of carbon implied in the NDC pledges. This will help governments allocate funds across climate-friendly versus other investments. These factors will need careful management.

***Recovery packages will also need to be fair to workers and communities hit hard by COVID-19.*** To achieve this, governments can focus all programmes and projects, and especially ones that can be implemented quickly, on providing training and jobs for those workers and regions hit hardest by the pandemic, including young people, the disadvantaged, the lightly skilled, and workers in high-carbon regions.<sup>20</sup> This will help to ensure a just transition for these workers and their communities, many of which are also facing impacts from multiple other forces of change.

***Not only is the COVID-19 crisis one of the biggest structural dislocations the world has ever seen, it comes at a time of multiple other transitions,*** including in technologies, globalisation, structural change within economics, and the climate transition. Finance ministries will play a central role in managing these confluent changes. That's why this paper is called "better" recovery. Better recovery packages can help governments manage the COVID-19 recovery but also change more broadly, including climate change. Packages can equip workers impacted by multiple overlapping transitions with the training, skills and resilience they will need for the vastly different labour market and employment opportunities of the future. Managing change in this way is essential to help to smooth the transition for workers and communities and reduce social resistance.

***Programmes and projects with longer lead times can be structured and financed now and implemented over the medium term, but challenges need to be overcome.*** These projects can increase the resilience of the recovery in the medium term and support longer-term objectives, including climate change mitigation: investments that accelerate decarbonisation, strengthen resilience to future crises and sustain economic growth will have the largest benefits for society. Crucial to realising these benefits will be strategic planning of infrastructure, an area that requires far greater attention to ensure we are building the future we want. Planning of infrastructure investments needs to adopt a systems focus if we are to bring about systemic change.

Programmes and projects could include rural electrification, which tends to be labour-intensive and so simultaneously contributes to the stimulus, universal access goals, and the expansion of renewables, e.g. solar, wind, hydro and biomass, in power generation. Energy efficiency programmes, such as retrofits of larger buildings, also tend to be labour-intensive with long-term climate payoffs. Infrastructure can also be upgraded so that it is resilient in the face of more frequent and more intense weather events – droughts, floods, cyclones – with the benefits of resilience being taken into account in cost-benefit analyses. The resilience of recovery investments is a crucial consideration for finance ministers. In a resource-constrained, low-carbon world, it will be wise to prevent lock-in to a range of assets (physical, but also human, intangible and natural) that may be rendered devalued or stranded in the future.<sup>21</sup> For example, falling demand, lower prices and rising investment risk from COVID-19 are likely to slash

the value of oil, gas and coal reserves by nearly two-thirds. Combined with other forces of change, this greatly increases the risk of stranded assets.<sup>22</sup>

In preparing these longer-term, sustainable and resilient infrastructure programmes and projects, finance ministers and others will need to tackle a range of long-standing challenges to scaling up. These will need urgent focus and attention (Box 3).

### **Box 3. Challenges to scaling up sustainable infrastructure investments**

Sustainable infrastructure, which incorporates resilience, is an essential foundation to achieving inclusive and sustainable growth, delivering on the Sustainable Development Goals (SDGs), and meeting the targets of the Paris Agreement. The world needs to ramp up investments in sustainable and resilient infrastructure to tackle large deficits in infrastructure services, especially in emerging markets and developing countries, to respond to the structural changes that are underway – especially urbanisation, to accelerate the replacement of ageing and polluting infrastructure, and to ensure infrastructure is resilient to a more hostile climate and environment.

Two fundamental and persistent gaps act as barriers to the quantity and quality of investment needed. First, countries are often unable to transform the tremendous needs and opportunities into a concrete pipeline of projects, due to the inherent complexities of infrastructure investment (its long-term nature, interconnectedness, social impacts, and positive and negative externalities), as well as policy and institutional impediments. Second, despite the large pools of available savings, mobilising long-term finance at reasonable cost to match the risks of the infrastructure project cycle and ensuring that finance is well-aligned with sustainability criteria, remains a widespread challenge.

Tackling these two challenges will require concerted efforts to: strengthen the upstream policy and institutional framework; design, build, operate and decommission projects based on sustainability criteria; develop better platforms for project preparation and for upstream financing support; and develop better structures to mobilise and utilise all pools of finance, especially private finance from long-term institutional investors, and align these pools of finance with sustainability criteria.

Key to providing this support will be continued advancement of the G20's infrastructure as an asset class agenda, which needs to move beyond project-by-project investments towards programmatic approaches, incorporating standardisation that lays the foundations for replication, aggregation, and asset recycling models, which are key to crowding-in institutional investors. The development finance community, including donor-funded global collaboration platforms like the Global Infrastructure Facility (GIF), is well positioned to support developing countries in times of economic downturn and to ensure a greener recovery. The GIF provides upstream advisory services to developing country governments to help build pipelines of sustainable, quality infrastructure investments that are attractive to private capital. Its model of coupling project preparation funding with hands-on technical expertise to developing country governments, with support from multilateral development bank partners to address capacity gaps and complement in-house capabilities, is a powerful enabler of private investment in sustainable, quality infrastructure.

*Source: Bhattacharya, A., et al. (2019), OECD (2018) and Global Infrastructure Facility.<sup>23</sup>*

**Research and development (R&D) support can greatly enhance the growth potential of recovery investments.** New technologies can be facilitated by bold government R&D programmes, as China and Germany demonstrated with wind and solar energy after the 2008 financial crisis.<sup>24</sup> Today there are many more opportunities for R&D investment and the focus could shift to international efforts to support new and complementary energy sources and technologies, such as green hydrogen and better batteries, along with a range of nature-based solutions to achieve lower cost and more resilient infrastructure. These technologies are further from market but are rapidly evolving.

While new breakthroughs may emerge in these technologies, it is important to recognise that much of the knowledge and many of the technical solutions needed for rapid advancement and cost reduction already exist, e.g. in aviation.<sup>25</sup> Moving to the frontier and exploiting this technological progress can have huge payoffs,<sup>26</sup> which will be crucial to ensuring cost-effectiveness and affordability and sparking a new cycle of sustained and equitable growth.

As with the efforts to fight COVID-19, pairing technological development and innovation with global cooperation to manage climate risks and improve lives is an idea that Bill Gates has highlighted as being “totally common between these two problems”.<sup>27</sup>

**The quality of infrastructure governance will be crucial for effective public investment.** Governments may be tempted to accelerate programme and project preparation by relaxing the prefeasibility, environmental and consultation requirements. This must be avoided, but the needs of a quick response could in some cases justify changes to ensure speed. Rigorous review will reduce the risk of adverse social and environmental consequences and ensure that the project is resilient to climate change. Monitoring, reporting and oversight of the public investment portfolio are critical throughout the crisis and recovery process. This will require better coordination of governance at the national and sub-national levels. Feedback on programme performance and impacts helps improve design and inform the reallocation of resources to the most effective programmes. Civil society and citizens can facilitate project monitoring, and this is particularly useful when monitoring small-scale projects that are widely dispersed.

**Finance ministries can learn from previous financial and economic crises**, particularly from green stimulus investments since the 2008–9 global financial crisis. Recent OECD analysis has assessed the evidence and discussed lessons from these past stimulus investments, finding key lessons to include the importance of whole-of-government coordination, good policy design to maximise cost-efficiency and other economic benefits, policy for key market failures if environmental benefits are to be realised, the need for careful consideration of distributional consequences, coordination of stimulus investments across countries to maximise multipliers, and risks around picking winners from direct R&D investment.<sup>28</sup> The International Energy Agency has also provided useful guidance on renewable energy stimulus investments, including lessons from the 2008–9 financial crisis.<sup>29</sup>

### 1.3. Tools to help finance ministers ensure sound investments and spending

When designing strategies and investment programmes and projects, several tools can help ensure the investments and spending that come forth are sound.

### *1.3.1. Place stimulus packages and project selection in the wider perspective*

A well-being lens links climate and other socially driven objectives and takes a more holistic approach to stimulus packages and programme and project selection.

**Synergies between emissions reduction and broader well-being objectives, such as reduced air pollution and improved health, increase the incentives for early mitigation action.**<sup>30</sup> In contrast, trade-offs between climate policies and affordability of energy and jobs reduce the incentives and exacerbate political economy barriers to early action. These synergies and trade-offs need to be taken into account to counter growing economic and social inequalities within and between countries. Applying a well-being lens across climate policies can help make visible such synergies and trade-offs, enabling decision-makers to increase the former and anticipate, manage and minimise the latter.

In the context of COVID-19, this becomes even more crucial. Identifying and managing the synergies and trade-offs between climate action and broader well-being goals will significantly enhance the positive impacts of recovery packages and catalyse the systemic changes needed across the economy.

For example, in the transport sector, fiscal stimulus packages focused solely on accelerating the uptake of private electric vehicles would reduce tailpipe emissions from private vehicles. However, this would also lock-in the existing mobility paradigm to private car ownership and low-occupancy rates. Given the current CO<sub>2</sub>-intensity of electricity supplies in many countries, this approach has limited capacity to make the radical emissions reductions needed from the transport sector and it is ill-equipped to deliver on other social (e.g. inclusion) and economic (e.g. reduced congestion, accessibility) outcomes.

**A focus on accessibility (i.e. the ease of reaching opportunities including jobs, services and leisure activities), rather than mobility, would better address these well-being and climate goals while still supporting recovery.** Policymakers will in any case need to address the potential challenges around perceptions of the safety of public transport (mass transit) in the wake of the COVID-19-crisis due to contamination fears. However, many people – including many of the key health workers who remain critical in the struggle against COVID-19 – do not have the option to use alternatives to public transport. Hence, the priority has to be to make public transport safer through investment in broader public health measures, such as effective screening and isolation of COVID-19 victims and the mandatory use of personal protective equipment, rather than encouraging private mobility that will further lock in inequalities.

### *1.3.2. Adopt a green filter, given the importance of the climate agenda*

**Green budgeting is a helpful tool for informing tax and spend decisions that support the achievement of climate and environmental goals in recovery strategies.** It is a focus of the Coalition's work under Helsinki Principle 4. Governments' budget decisions are key to delivering economic recovery. Green budgeting provides an opportunity to bring a green perspective to the budget process and help direct large-scale public finances towards policies and programmes that both revitalise the economy and help meet a government's climate and environmental goals. For example, green budgeting can help ensure that the right information is available on how proposed budget measures impact the environment.

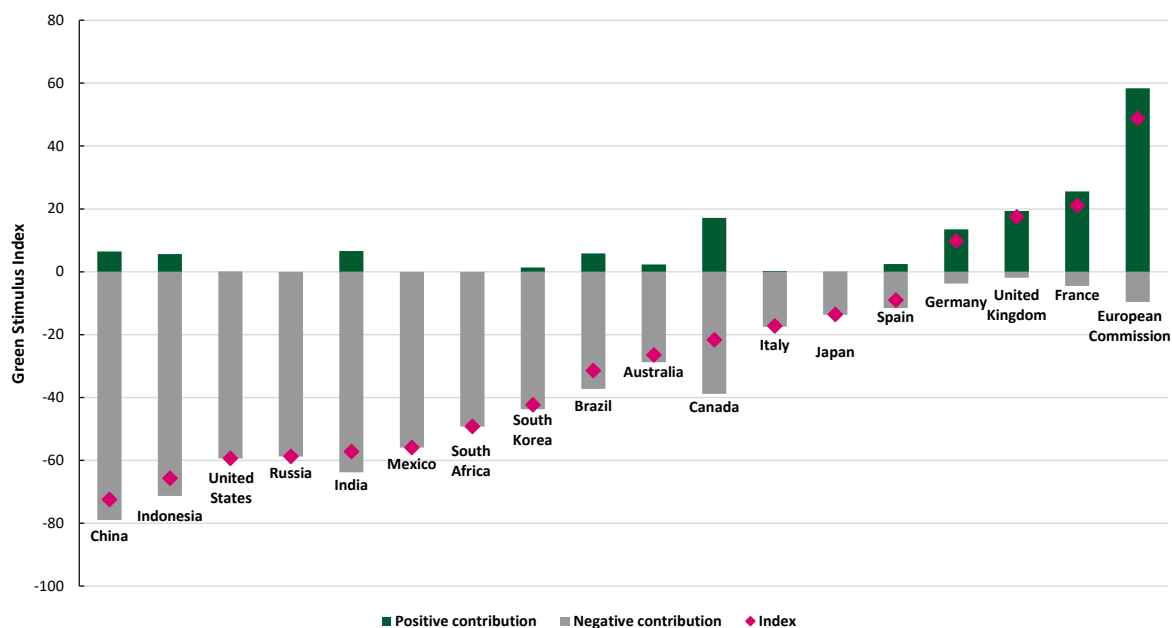
Ministries of Finance can use this information to assess different proposals and design a fiscal stimulus package that has a material impact on a government's ability to

meet its economic objectives as well as its environmental and climate goals. The OECD's forthcoming Green Budgeting Framework will set out the building blocks of a comprehensive green budgeting approach, strategic and fiscal planning, budgeting tools for evidence generation and policy coherence, accountability and transparency and an enabling budgetary governance framework. Depending on national circumstances, countries may already have some of the building blocks in place, while for others, data, methodologies or institutional set-ups are missing. A strong green budgeting approach will be supported by all of the building blocks, allowing a step-change in how governments think and act in the budgetary process, in order to address climate change, biodiversity loss and wider environmental degradation – some of the defining challenges of our future.

However, the application of green budgeting is limited right now and will take time to be applied across countries. For example, some aspects of green budgeting are quite sophisticated, e.g. tagging of revenues and expenses as green, or otherwise, and are not yet ready to be adopted across countries. There is a need to consider some simple and universally applicable tools that can be developed in time for stimulus packages. These could be complemented by upstream elements of green budgeting (targets and objectives in the 'strategic and fiscal planning' phase), which are already in place across a large number of countries thanks to their SDG frameworks. This is part of the agenda of the Coalition Principle 4 working group and of the OECD and there are already important insights coming out from that work and from some early cases including France and Ireland. The Principle 6 working group paper shares useful insights on the importance of green budgeting and tagging with respect to the development and implementation of the NDCs.<sup>31</sup> This will also help in designing effective stimulus packages aligned with the SDGs. The Principle 6 paper makes the point that while green budgeting applications are limited, finance ministries can pursue a variety of entry points and phased approaches to suit their economic situation when mainstreaming their NDC into the budget.

**Policy evaluation of green recovery packages would enable finance ministries to share, learn from best practice and avoid mistakes.** There are complex methodological challenges in assessing jobs and economic impacts from stimulus spending, ex-ante and ex-post. Despite these challenges, policy evaluation is necessary and should be an integral part of green stimulus programmes in response to the COVID-19 crisis.<sup>32</sup> An ongoing exercise by Vivid Economics, in partnership with the Finance for Biodiversity Initiative, assesses the greenness of stimulus flows; so far these consist mostly of rescue spending but the assessment provides a useful indication and is updated regularly. The index is constructed by combining the flow of stimulus into key sectors and applying an impact indicator to assign a greenness value (positive or negative) to each sector. Further details are provided in their most recent report<sup>33</sup> and the latest results available are presented in Figure 1 below. The IMF also tracks stimulus and recovery policies across countries<sup>34</sup> and a new project by Johns Hopkins University will conduct a climate impact assessment of COVID-19 stimulus packages.<sup>35</sup> It is valuable to have these metrics and ongoing research projects. The Coalition can contribute through a systematic stocktaking of member country packages as they are put together.

**Figure 1: Green stimulus index**



Source: Vivid Economics, 2020<sup>36</sup>

### 1.3.3. Apply project-level guidance and checklists to guide investment programmes and projects

**Project guidance and checklists can be valuable tools and frames of reference when building and assessing investment programmes and projects for recovery.** As mentioned, finance ministers do not need to start from scratch when designing recovery packages. They can use programmes and projects already identified in countries' national or sectoral masterplans, as well as climate change adaptation plans, long-term transformation and decarbonisation strategies (including in Nationally Determined Contributions), and other sectoral and urban/city-level guidance (see Box 4). Nationally Determined Contributions are currently under review, and many aim to increase ambition and align with the Paris Agreement, creating an opportunity to better embed climate and well-being goals in recovery packages in an integrated way.

Programmes and projects should then be assessed in terms of their potential to fit the needs of a stimulus package, by considering various temporal and sectoral dimensions; investment programmes and projects should be timely, targeted, temporary and transformative.<sup>37</sup>

In the current resource-constrained environment, it is also important to ensure that all investment spending has high economic returns. Most countries have been underinvesting in all types of capital for decades and many continue to invest in dirty capital and in ways that damage nature. For example, with infrastructure investment the quantum and type of investment is important, as sustainable infrastructure investment must be sufficient to replace the dirty and polluting capital stock. If we underinvest or invest in the wrong type of capital then dirty and unsustainable capital stock, with a high chance of becoming stranded, will remain in the system. Therefore, a crucial question for all governments to consider when designing investment

programmes and projects is whether or not the investments are productive with high future returns and contribute to the sustainability of the capital stock. In a post COVID-19 world, investments also have to meet the test of jobs, economic efficiency and cost effectiveness, as fiscal resources are going to be much tighter. Add in the need to maximise economic multipliers and environmental soundness and all governments will need to be particularly prudent to ensure they are maximising the productivity of their spending.

If stimulus investments are to meet the criteria explained, they are going to need to conserve resources in the fullest. There is considerable scope today to improve resource productivity/efficiency and accelerate the transition towards a more circular economy. Shifting away from unsustainable natural resource use can reduce environmental impacts and supply risks and create job opportunities, for example in collecting recyclables, preparing and processing secondary materials and repairing goods. Investments to support repairability, reusability, remanufacturing and recycling, largely absent in the green elements of the Global Financial Crisis of 2008-09 stimulus, can be considered as they can help support value creation and economic resilience.<sup>38</sup> Some countries were putting in place circular economy laws before the crisis, e.g. France;<sup>39</sup> laws of this nature can be an important dimension of recovery packages.

#### **Box 4. Sector and city investment guidance**

Sector guides, examples of which are provided below, can help to inform programme and project design and selection. Guidance is available for investment in transport, in the energy transition and other key areas such as cities.<sup>40</sup>

For investment in transport, IRENA has produced detailed investment roadmaps.<sup>41</sup> Key investments and policies include: minimum standards for vehicle emissions; priority for electric vehicles in city access; accelerating a modal shift in transport; promoting the shift from passenger cars to public transport (electric railways or trams), and from trucks to electric railways; promoting electric two- and three-wheelers (e-bikes and electric buses); creating the conditions for the electric mobility market to develop; deploying and incentivising charging infrastructure; promoting sector coupling (linking EV batteries with electricity grids) and the circular economy (battery recycling); supporting battery and charging R&D, considering both mobility and grid needs; and exploring innovative mobility services such as car sharing, increasing connectivity and autonomous driving (these promote energy efficiency and reduce energy consumption through reducing the car fleet size and traffic volume).

For energy systems, the Energy Transitions Commission (ETC) suggests governments should embrace five priorities to help the global economy recover while building a healthier and more resilient economy: unleash massive investment in renewable power; boost the construction sector via green buildings and green infrastructure; defend the automotive sector while pursuing clean air; make support to businesses conditional to climate commitments; and do not provide subsidies/support to the fossil fuel sector.<sup>42</sup>

The International Finance Corporation (IFC) estimates a cumulative climate investment opportunity of \$29.4 trillion across six urban sectors in emerging market cities to 2030, including in green buildings construction and retrofits (\$24.7 trillion), improvements in low-carbon public transport infrastructure and electric vehicles (\$2.6 trillion), climate-smart water and wastewater management and infrastructure (\$1 trillion). Many of these investments can be planned and implemented now. To arrive



at these estimates, the report measures current and targeted sectoral estimates of usage and uptake of the technologies and infrastructure required for each sector and applies regionally disaggregated costs. To arrive at a cumulative sectoral investment estimate up to 2030, these estimates were then scaled by projected urban populations by region in 2030.<sup>43</sup>

For cities, which are the engines of innovation, productivity and economic growth in emerging markets and developing countries, and are projected to grow rapidly over the next decade, investments can start quickly and can ensure cities are built sustainably, are liveable, and are also aligned with the Sustainable Development Goals and the objectives of the Paris Agreement.

The Coalition for Urban Transitions sets out feasible urban investments that can bring cities close to net zero by 2050, in buildings, transport, waste and materials efficiency. They propose investments close to \$2 trillion (about 2 per cent of global GDP) per year to 2050 with a net present value of \$24 trillion, or close to \$40 trillion if higher energy prices and faster technological learning rates are assumed. These estimates could turn out to be conservative as other benefits such as long-run productivity gains and improved public health are not included.<sup>44</sup>

***Over the short term, three additional considerations around programme and project selection can be helpful to keep in mind:***

- **Job creation**, looking at the number of jobs created per dollar invested, but also the types of jobs created and who benefits from them, and the match between the skills needed and those available in the local workforce.
- **Boost to economic activity**, focusing on the economic multiplier each intervention can deliver (see the discussion on multipliers in Section 2), the ability of a programme and project to directly replace missing demand, and its impact on import levels or the national trade balance.
- **Timeliness and risk**, understanding if the project generates stimulus and employment benefits over the very short term and if these are durable even in the face of possible re-imposition of local quarantine measures.

***Over the longer term, programmes and projects can also integrate the following three different dimensions:***

- **Long-term growth potential**, looking at the impact on human, natural and physical capital. For instance, some projects do better at improving human capital, by building the future skills and health of the population, especially if air and water pollution can be reduced, or access to improved drinking water is improved. Others may promote the use of more efficient technologies, provide important public goods like modern energy or sanitation, or address market failures, such as distortive subsidies that are obstacles to long-term growth.
- **Resilience to future shocks**, with interventions to build capacity for societies and economies to cope with and recover from external shocks, like COVID-19 today, but also other forms of natural disaster and future climate change impacts. This will require continuity of government plans to ensure more rapid recovery from disasters.
- **Decarbonisation and sustainable growth trajectory**, with actions to support and disseminate green technologies, like grid investments that facilitate the use of renewable energy and electric vehicles, or low-tech options like afforestation and landscape and watershed restoration and management. It will be particularly

important to ensure that investments from stimulus packages do not impose large stranded asset costs on the economy in coming decades, for instance because they bet on declining technologies or place projects in high-flood-risk zones.

**The goal of the above analysis is to provide governments with some basic criteria and tools to compare interventions and focus on the most promising investment options.** It is also important to assess whether complementary policy or institutional changes are required to ensure that action on programmes and projects can really begin now. One of the key lessons of the 2008 stimulus programmes, as mentioned, was how failure to enact basic market reforms, e.g. removal of inefficient fossil fuel support, or supportive policies, standards and carbon prices, placed many green programmes and projects at a disadvantage to incumbent technologies and did not allow momentum to build that could disrupt long-standing development approaches.

**Governments seeking to apply the above-mentioned framework may wish to use it in two phases.** First, it can be used as a quick cut, 'yes-no-maybe' assessment, identifying the 'worst offenders'. The goal is to ensure that governments do not invest in programmes and projects that are attractive for their stimulus characteristics but detrimental to the environment over the long term, or that are not cost-effective or resource efficient.

In a second phase, the World Bank has set out a range of indicators<sup>45</sup> to help decision-makers prioritise among the remaining projects, identifying the 'best in class' that are timely and deliver multiple benefits to society, both in the short and long term.

#### *1.3.4. Ensure resilience across programmes and projects*

**The current crisis has exposed the vulnerability of our highly interconnected world.** Indeed, our current development model is increasing the risks of novel disease emergence through a number of different channels related to forest loss and land-use change. Urbanisation and international economic and social networks facilitated the rapid spread of COVID-19 globally. Our overall lack of preparedness for a risk that was widely expected to materialise, albeit with an uncertain onset, only amplified the disastrous impacts of the crisis. While climate change and other natural hazards are different, they pose similar challenges to pandemics in terms of societal and economic resilience. Countries face increasingly frequent and severe climate-related extremes. Without effective early action to reduce greenhouse gas emissions, climate impacts will become still more pervasive and severe, with many impacts irreversible.

Our international economic system comprises a globally connected network of cities and regions that concentrate people, activities and capital. This has delivered huge economic and social benefits, albeit unequally. But its guiding principle has been a focus on economic efficiency, rather than resilience. In other words, a focus on maximising economic growth, not on ensuring the sustainability of that growth. Nor have we managed to avoid significant shocks to that growth. Some of these have been positive, driven by innovation and technological transformation; many more have been negative due to recurring financial, security and (now) health crises, that we may have anticipated but have all too often failed to prevent. The COVID-19 crisis has demonstrated that the societal costs of prioritising economic efficiency over resilience are huge. There are clear lessons for our as-yet inadequate responses to the risks of climate change and deforestation and forest fragmentation.

In response to crises, governments are often quick to implement national emergency measures and to use large-scale public spending for emergency support and to help affected regions recover.<sup>46</sup> The adaptation community has worked to shift the focus

of policymakers away from costly ex-post responses to building resilience through better risk identification and assessment, investment in organisational and physical risk prevention measures, and ensuring that recovery and rehabilitation efforts do not perpetuate existing vulnerabilities and exposures, *thereby building back better*. Climate and disaster risk financing instruments and insurance are suitable instruments that strengthen ex-ante disaster preparedness and require proactive advanced planning and upfront investments. Strengthening resilience is also an important driver to align economic stimulus with the NDCs and the Long-Term Strategies (LTS). Jamaica, for example, is shifting its disaster management paradigm to include both ex-post and ex-ante responses. By doing this it hopes to achieve macro-fiscal goals, minimise the impacts on GDP, and prepare better for economic impacts from natural disasters and other risks such as COVID-19.

**A key imperative is therefore to strengthen societal resilience in a way that integrates people's well-being and climate goals.** Consider what this might mean for cities, for example. There are three key points:

- *First*, build in redundancy and back-ups in critical infrastructure services. For example, by providing a range of low-emissions transport options (e.g. subways, buses, cycling, walking) to allow easy access to key locations. In the current crisis, health workers – especially those on low incomes, perhaps without access to a vehicle – need to be able to travel easily and affordably to and from work.
- *Second*, limit unplanned urban sprawl – which can place significant pressure on the climate and ecosystems and increase infrastructure costs compared with more compact and well-planned cities. We also need to incorporate nature into urban areas to a greater extent to make them more resilient by moderating the impacts of extreme weather and to contribute to climate change mitigation (e.g. by reducing energy demand for heating and cooling and by increasing natural water absorption capacity, which reduces urban flooding).
- *Third*, foster a whole-of-society approach to building resilience, where each government and non-government actor, including infrastructure providers and operators, is responsible for enhancing their own resilience to future risks.<sup>47</sup>

**Finally, there is a need for a more coherent approach to managing climate change risks and broader disaster risks, including pandemics, and a better understanding of fiscal risks.** The two approaches share common objectives but are too often developed in and deployed through administrative silos. The wide range of institutions and government officials responsible for managing climate hazard exposures and reducing vulnerability often means that potential synergies are missed, and efforts are duplicative. The adoption in 2015 of the Sustainable Development Goals, the Paris Agreement on climate change and the Sendai Framework for Disaster Risk Reduction provide a clear mandate for a more coordinated approach on climate and disaster risks. While the three frameworks refer to their respective objectives and mandates, the achievement of their individual agendas depends on the successful implementation of all of them. Only in combination can they address the range of potential risks to sustainable development.<sup>48</sup> There is also a need for better understanding of fiscal risks in general.<sup>49</sup> In this context it will be important build on the Coalition's work under Helsinki Principle 5 on financial preparedness against climate and disaster shocks in the time of COVID-19.

## Section 2. Macro-fiscal context and supportive policy and institutional frameworks

### Summary

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Policy and institutional frameworks to support recovery plans and investments need to be set in the current macro-fiscal context. Countries will face immense fiscal stress as they move out of the COVID-19 crisis and will need the right strategies and policies to create fiscal space for the recovery. The priority is to find ways to deliver a strategy for investing in better growth, as challenging as this will be, especially in emerging markets and developing countries.

Fiscal multipliers will be a crucial consideration in investment programme and project selection. Higher short and long run fiscal multipliers will deliver greater growth for each dollar invested. The arguments and evidence set out in this section suggest that sustainable investments have higher short and long run multipliers than fossil fuel and other alternative investments.

To ensure the highest multipliers, finance ministries will need supportive policy and institutional frameworks that align expectations, help to overcome the challenges of preparing investments, and drive green investment programmes and projects forward. Carbon pricing will be central, as will supportive regulations and bailout conditions. All can tilt incentives to green investments. Although there are unlikely to be net job losses from well-designed pricing policies, jobs are likely to decline in some higher-carbon industries, increasing the imperative of a just transition for workers and communities. Falling fossil fuel prices provide an opportunity for carbon pricing and inefficient subsidy reform, which can provide a source of much needed revenues, and can be part of wider fiscal reforms to restore fiscal sustainability.<sup>50</sup> Carbon pricing and inefficient subsidy reform will also help to mitigate the dangers of low fossil fuel prices incentivising greater user demand for fossil fuels.

Policies that the Coalition has been working on can help provide important support for the recovery packages. Some elements will be of particular benefit, e.g. revenue enhancing measures and pricing, including carbon pricing and inefficient fossil fuel subsidy reform, and new work will also be needed, e.g. around fiscal multipliers, supportive regulations, and bailout conditions.

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Key considerations for finance ministers in designing supportive policy frameworks.

***A key objective of any recovery package is to stabilise expectations, restore confidence and channel surplus desired savings into productive investment.<sup>51</sup> To achieve this, countries need strong, coherent and credible policy and institutional frameworks, set in the current macro-fiscal context, to support their investment strategies.*** There is evidence to suggest that investment is directly impacted by the attractiveness of the broader policy and investment environment.<sup>52</sup>

This is strongly embedded in the work of the Coalition; the work under Helsinki Principles 3 and 4 is well aligned with the policy reforms that need to take place. COVID-19 has made some of this more urgent and the work underway will be helpful in supporting green packages. Other areas are also emerging and becoming important, including around regulation and bailouts.

## 2.1. The macro-fiscal context

***In developed countries characterised by low productivity growth, surplus desired savings and limited scope for stronger monetary policy, temporary expansionary fiscal action can be very effective.***<sup>53</sup> These countries can finance investments that drive not only spending but also productivity and growth. More generally, in advanced countries expansionary policies tend to be more effective during recessions.<sup>54</sup> The evidence suggests that every dollar of spending funded by public borrowing during a severe downturn is likely to raise output by \$2–3 by leveraging private spending and 'crowding in' productive capacity.<sup>55</sup>

***However, this often raises questions about debt sustainability.*** One way to attain debt sustainability in terms of public debt/GDP is to focus on the denominator by seeking highly productive investments that boost growth. Many countries, including the UK, used high growth to chip away at their immense debts after the Second World War. The UK's debt burden, for example, was at 250 per cent of GDP in 1950, but high growth in the subsequent decades meant that, over time, it was brought down without austerity policies.<sup>56</sup>

***In this context, worries about limited 'fiscal space' must be addressed head-on.*** Real bond rates in rich countries remain close to zero. This reflects abundant investor appetite for public borrowing, if it can generate real returns. Financial assets are not net wealth: what matters is how wisely government borrowing is invested to generate resilient output and sustainable capacity; investments are needed with high economic returns that can be sustained over the medium to long term. In many countries interest rates are so low that even a doubling of debt levels will result in lower debt servicing costs as a share of tax receipts than at any time in the 20th century.<sup>57</sup>

***Emerging markets and developing countries face a much more complex and challenging situation.*** Once countries have stabilised their economies and start to emerge from the COVID-19 crisis, their fiscal firepower will be stretched, but for emerging markets and developing countries their constraints will be much greater, both from the erosion of fiscal space and also balance of payments pressures, e.g. widening current account deficits, capital flight and loss of access to capital markets. Many are also facing multiple other emergencies. For example, parts of Africa are facing extreme flooding, a second wave of desert locusts in East Africa and the economic impacts of the global COVID-19 pandemic,<sup>58</sup> alongside the ongoing climate crisis – all are intrinsically linked. East Asia, the Pacific and South Asia are facing the threat of a severe typhoon/cyclone season together with the impacts of the COVID-19 pandemic. The Caribbean and many parts of Latin America are also facing heightened vulnerability to climate-related weather shocks.

COVID-19 has therefore amplified vulnerability in many emerging markets and developing countries. For many countries, COVID-19 will see their limited reserves depleted, exposing them to the impacts of other ongoing emergencies and also future shocks, e.g. typhoons in the Philippines. The COVID-19 crisis has therefore underscored the importance of building physical, financial and economic resilience. The InsuResilience Global Partnership for Climate and Disaster Risk Finance and Insurance (CDRFI) Solutions aims to strengthen the resilience of developing countries and protect the lives and livelihoods of poor and vulnerable people against the impacts of disasters. The InsuResilience Program Alliance, the collaborative delivery vehicle of the Partnership, which brings together leading programs on CDRFI, delivers a full package of services to countries, including risk analytics, technical assistance, solution design, financial packages and project management.<sup>59</sup>

From this position of extreme debt servicing stress and heightened vulnerability, emerging markets and developing countries will need new sources of finance for recovery packages that take a multi-dimensional and whole-of-system approach; they will need to address these multiple stressors, build resilience to future shocks, and restore growth. In this context, emerging markets and developing countries will need to consider all options discussed in this paper, including strengthening public finance through carbon tax/subsidy reforms that can provide new sources of revenue, and mobilisation of green private finance through strong actions by development banks. The MDBs will have a special role, as discussed in Section 3 below.

While not the subject of this paper or the role of the Coalition, there will be low-income countries and some emerging markets that face severe debt difficulties. However, it is worth noting that the record capital outflows observed at the start of the crisis have started to abate and risk premia stabilise, with some countries able to access international capital markets.<sup>60</sup>

Different countries will require different solutions, but a range of sustainable finance innovations in funds, guarantees and swaps, could be helpful and create much needed fiscal space (see Box 5). Debt for nature swaps are increasingly being discussed as part of the solution, and nature is one aspect that is relevant for the Coalition. These swaps can help tackle the challenges around finance for climate activities and nature, which often don't generate the same revenue streams as other investments.

**Box 5. Sustainable finance innovations could assist emerging market economies overcome sovereign debt problems and support the Sustainable Development Goals.<sup>61</sup>**

Emerging market sovereign debt issuance is anticipated to reach \$300 billion in 2020. Many emerging market economies face limitations issuing international debt, with devaluation risking the sustainability of their current outstanding debt and further compromising their sovereign health. Debt relief will result in credit rating downgrades and loss of market access. New approaches are needed which provide emerging market economies with the fiscal firepower to respond to the immediate COVID-19 crisis and steer their economies on a pathway of long-term transformation.

Three possible sustainable finance innovations could be deployed to help emerging markets and developing countries tackle the threat of a sovereign debt crisis: the fund, the guarantee and the swap:

**1. Create a fund to invest in emerging markets' SDG-linked debt.** Initially, part of the fund would purchase existing non-SDG emerging market debt, supporting emerging market economies and improving their refinancing opportunities. The participation of SDG-aligned bonds in the fund would increase over time until it reaches 100 per cent. A first-loss absorbing tranche of \$750 million in equity from IFIs could help leverage \$5 billion from the private sector. This amount could help to address the needs of countries eligible for International Development Association (IDA) support (i.e. the poorest countries). Furthermore, this idea could be replicated regionally (by creating regionally focused SDG funds) and leverage regional development banks.

**2. Guarantee new issuances that replace existing emerging market sovereign bonds, at no economic loss for investors holding this debt.** These new issuances would have a strong SDG component, enabling a partial guarantee (for example by an MDB), and would not have principal or interest payments for the first year. Including these

bonds in an emerging market index would raise investor appetite. For example, an existing Ghana 2030 bond has a partial IDA guarantee of 40 per cent of the principal.

**3. Swap sovereign debt restructuring for commitments to invest in environmental and development goals.** The 2018, \$27 million Seychelles debt for climate and nature swap is a recent example. This led to investment in climate resilience, fishery management, biodiversity conservation and ecotourism. This niche market could be scaled up and its scope broadened to cover the full range of SDGs. Moving to scale will require complex international coordination across international organisations, NGO's and governments. MDBs can play a leading role.<sup>62</sup>

For emerging market sovereign bond issuers considering a possible debt restructuring process could engage with private investors prepared to support their long-term transition. This could involve a temporary reduction in interest payments now, creating fiscal space now, and a commitment to invest in SDGs. For example, Argentina could issue a new set of instruments with a uniform 7.5 per cent coupon, but with an initial 6 per cent rate. Issuance of \$200 billion of bonds would generate additional cashflow of \$3 billion a year under this structure.

## 2.2. The size and effectiveness of fiscal multipliers

The importance of considering multipliers in programme and project selection has been mentioned throughout this paper. The best projects are the ones that give the best 'bang for your buck': they can stimulate employment rapidly in the short run and also lead to large 'learning curve' effects via lower production costs in the longer term.<sup>63</sup> A large fiscal multiplier – in excess of 1 – not only ensures the efficiency of expansionary policy for recovery, but also enhances the potential for future revenues and fiscal sustainability. However, there is little consensus in the literature on the size and relative effectiveness of fiscal multipliers.<sup>64</sup> Estimating fiscal multipliers is difficult, partly because spending and taxes react automatically to the business cycle through automatic stabilisers. Fiscal multipliers depend on country characteristics: they tend to be larger in countries with fixed exchange rate regimes, that are closed to trade and have lower debt, and, conversely, smaller in countries with flexible exchange rate regimes, that are open to trade and have higher debt.<sup>65</sup>

**Fiscal multipliers are lower in developing countries.** Spending multipliers are generally lower in developing countries than developed – which may be due to expenditure inefficiencies limiting the impact of fiscal policy on output.<sup>66</sup> Using spending induced by World Bank lending (and that of the other creditors), existing research finds that fiscal multipliers for developing countries are only around 0.4–0.5, much less than 1.<sup>67</sup> A country's debt situation is to some extent captured in fiscal multiplier estimates too: countries with high debt levels tend to have low spending multipliers. This implies that countries going into the present recessions with debt distress have less scope for using fiscal policy for stabilising their economy.

**Despite the estimation challenges, there are strong arguments, supported by mounting evidence, that fiscal multipliers from green projects outperform those from alternative investments.** For example, in the short run, renewable energy infrastructure built after the global financial crisis of 2008 led to higher numbers of jobs created compared with traditional stimulus.<sup>68</sup> High labour intensity yields multipliers above 1 in the short run, because it stimulates demand and crowds in spare resources. Indeed, the economic return for every dollar of expenditure in the short run, i.e. a project's short run multiplier, is a key factor in assessing the impact of a stimulus package.<sup>69</sup> The



IEA has produced estimates of jobs created per million dollars of investment across a range of energy related stimulus investments.<sup>70</sup>

In the long run, recent evidence finds that learning-by-doing in the operation and maintenance of more productive clean technologies makes them less labour-intensive. Investment more broadly in clean technologies lowers their upfront capital and installation costs and, as they outcompete fossil fuel alternatives, helps to accelerate deployment and innovation in a virtuous reinforcing cycle.<sup>71</sup> The 'clean innovation machine' can be more innovative and productive than the conventional high-carbon alternative; and knowledge spillovers generated along the way then benefit the whole economy.<sup>72</sup> As such, green investments generate higher long-run multipliers arising from resulting energy cost savings and energy and resource efficiency, which has significant flow-on effects to the wider economy, liberating resources and "crowding-in" growth.<sup>73</sup> The alternative, for example, is building fossil power stations which exhibit limited innovation induced reduction in costs and then retiring/scrapping them early as energy markets transform, they become uncompetitive and are pushed out of the system. These factors make low-carbon investments very powerful in the context of stimulus packages that need to be transformative.

**The role of expectations and confidence is crucial.** Both the short run and long run multipliers hinge on a clearly expressed, credible and confident policy vision that supports long-term green transformation. This will give investors confidence to invest as they expect others will too. Creating this confidence and clear expectations will require strong communications strategies on policy and careful management of the political economy. There will be challenges that question whether now is the time to invest in green, given other alternatives. Even if governments understand and accept it is best to invest in capacity for growth, rather than other approaches to recovery, e.g. austerity, they could alternatively invest in schools or hospitals. But this is not about substituting one investment for another: it is recognising that green investment delivers the employment and growth outcomes we need most effectively.

### 2.3. Environmental taxes, regulations and bailout conditions can be a powerful way of tilting incentives to green

Economic crises focus attention on fiscal reform, as fiscal systems are usually put under huge stresses and there is a need to repair and find new sources of revenue. A key priority for fiscal reform is environmental taxation: it can tilt incentives to support green recovery strategies and investments, and it can generate valuable revenues while increasing economic efficiency. Carbon pricing and the phasing out of environmentally harmful subsidies can be a critical component in a package of climate policies needed to restore growth and decarbonise the economic system. It will be important to ensure a just transition for workers in higher-carbon industries that restructure or decline. Regulations are also needed. They are an important complement to carbon pricing (or a substitute if political economy factors prevent carbon price reform) and can be particularly timely and effective in times of crisis. Bailout conditions are also timely and helpful in times of crisis when significant numbers of jobs are at stake. They can save jobs and accelerate low-carbon restructuring in 'brown' firms/industries.

Implementation of carbon pricing will need to take into account that the elasticity of response may be limited due to political acceptability and limited alternatives to carbon-intensive consumption behaviour, e.g. limited access to public transport. Overall accounting for climate change when designing and implementing fiscal



policy and investment will need to be embedded in a larger well-being agenda to secure synergies with other well-being goals and avoid relevant trade-offs and potential roll-back on climate action.

### *2.3.1. Carbon pricing: finance ministers have identified carbon pricing and inefficient fossil fuel subsidy reform as key economic policy tools to address climate change*

**Carbon pricing and inefficient fossil fuel subsidy reform plays a dual role of (i) establishing price signals for redirecting investment to low-emission technologies and (ii) mobilising revenue.** By ensuring fossil fuel prices reflect both supply and environmental costs, pricing measures reduce the risk of locking-in carbon-intensive capital (e.g. fossil fuel power plants). In the current context, such pricing measures can contribute to the sustainable macro-fiscal frameworks needed for funding social assistance and post-crisis recovery programmes. Carbon pricing can take the form of carbon taxes, that is, charges on the carbon content of fuel supply, or emissions trading systems (ETSs), where firms need permits to cover their emissions, the government controls the supply of allowances, and trading establishes the allowance price. Fuel excise taxes, which are economically similar to carbon taxes, and inefficient fossil fuel subsidy reform are also part of the policy context in which carbon pricing discussions take place.<sup>74</sup> Not only do inefficient fossil fuel subsidies undermine global efforts to mitigate climate change, but they also distort fossil fuel (and therefore carbon) prices, induce economic inefficiencies and poor environmental outcomes. They represent a considerable strain on public budgets as well, draining scarce fiscal resources that could be put to better use. Irrespective of instrument choices, effective reform designs entail comprehensive coverage, robust and predictable prices, and putting the revenues to the most productive uses.<sup>75</sup>

#### ***The emissions reductions embodied in Coalition countries' commitments for the Paris Agreement are substantial (Figure 2) and have changed little as a result of the crisis.***

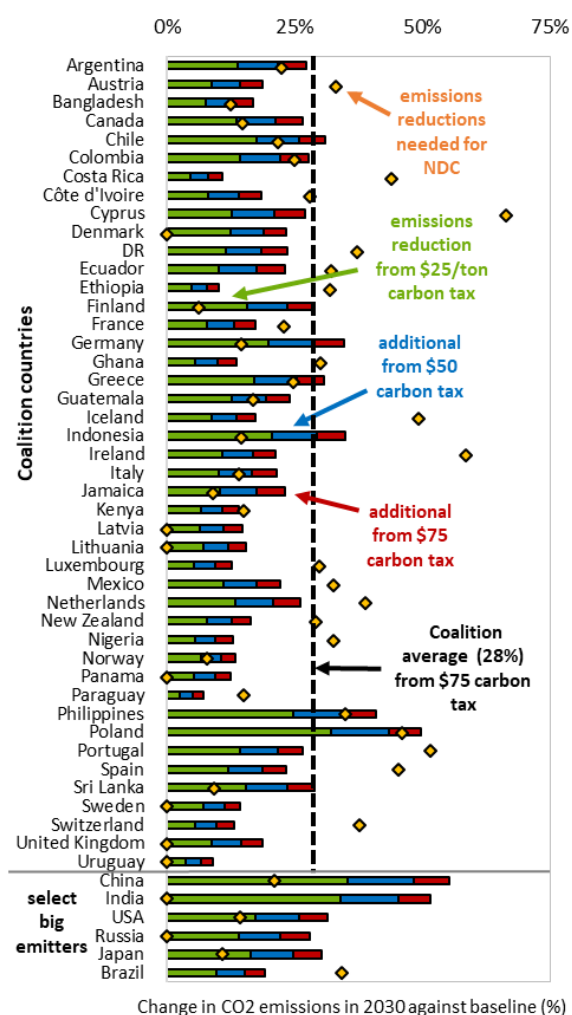
There are considerable differences across Coalition countries in the emissions reductions below business as usual (BAU) levels, i.e. levels in the absence of stronger climate change mitigation policies in 2030, needed to achieve the Nationally Determined Contributions (NDCs).<sup>76</sup> Needed reductions exceed 35 per cent in 11 cases and are less than 10 per cent in 11 others. Cross-country differences reflect, for example, varying preferences for leading on climate change and the principle that advanced countries have greater responsibilities than others. Although projections (as of April 2020) for 2030 GDP have been revised downwards, the emissions savings are relatively modest and may be offset by extra emissions induced by lower energy prices.<sup>77</sup> On average, the percentage emission reductions below BAU levels implied by Coalition commitments exceed those in large emitters like China, India, Japan, Russia and the United States. It is also worth highlighting that the aggregate impact of the commitments across all NDCs will not limit average global temperature increase to 2 or 1.5°C.

**Carbon prices implicit in mitigation pledges for 2030 are also substantial but again differ considerably across Coalition countries** – from over \$75/tCO<sub>2</sub> in 14 cases to less than \$25/tCO<sub>2</sub> in 13 other countries.<sup>78</sup> These differences reflect both differences in the stringency of commitments and in the price responsiveness of emissions. The price dispersion underscores the case for international coordination mechanisms like carbon price floors that could help to scale up action globally and address competitiveness concerns.<sup>79</sup>

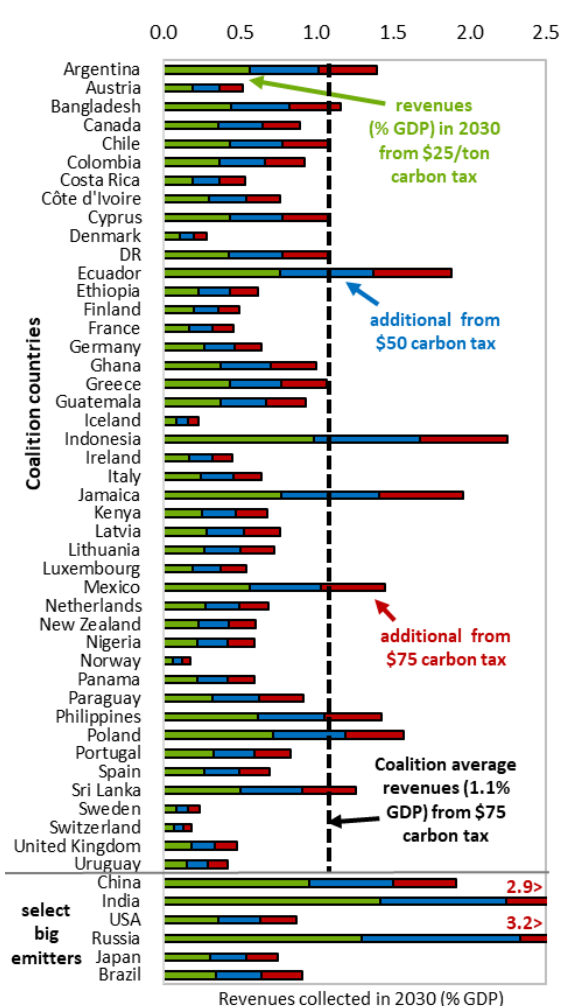
**Carbon pricing revenues are potentially significant.** A \$25 carbon price would raise around 0.3–0.6 per cent of GDP in revenues in 2021, rising to 0.8–1.2 per cent of GDP

for a \$50 carbon price in 2030 (Figure 3). Broader reform of fossil fuel prices to reflect the full range of environmental damages, such as local air pollution, would generate substantial additional government revenue.<sup>80</sup> Ultimately, carbon pricing revenues would need to be replaced by other revenue sources as economies are decarbonised, but this is an issue for the longer term.

**Figure 2. Potential CO<sub>2</sub> emissions reductions by carbon tax in 2030 (% change against baseline)**



**Figure 3. Potential revenues from carbon taxes in 2030 (% GDP)**



Source: Black and Parry (2020)

Note: Coalition averages are computed by weighting countries by their shares in total Coalition emissions or revenue in the 2030 BAU. Needed emissions reductions are based on submissions for the 2015 Paris Agreement and do not account for subsequent national pledges (e.g. Denmark, Germany and the UK have national targets to cut emissions by 70, 55 and 57 per cent below 1990 levels by 2030 respectively) or variation within blocs (e.g. in the EU).

**Additional carbon pricing revenues should be put to the most productive uses**, which will differ by country. Some countries may wish to focus on fiscal neutrality from carbon taxation, e.g. using the additional funds to reduce distortionary taxes. Others with large funding needs can use the revenues to support quality sustainable infrastructure investments that are labour intensive and contribute to inclusive, resilient and

sustainable growth. It will be important to use part of the additional revenues to support a just transition and alleviate distributional consequences (see below).

**The environmental and fiscal advantages of carbon pricing over other mitigation instruments are generally large in relative terms.** For example, comprehensive carbon pricing is around twice as effective at cutting emissions than pricing systems for the power and industrial sectors only and has at least twice the revenue potential. A comprehensive combination of feebates<sup>81</sup> and regulations that promote fuel switching in power generation and major opportunities for energy efficiency improvements has around 60–75 per cent of the effectiveness of broad carbon pricing but forgoes revenue benefits.<sup>82</sup> Having said that, the choice of carbon tax instrument is also important. Evidence suggests that revenue raised from carbon taxes is more than twice that of ETS auctions, despite the larger coverage of emissions by ETSs, as most permits are given away for free.<sup>83</sup>

**A comprehensive package can enhance the effectiveness, equity and acceptability of carbon pricing, though its appropriate timing will depend on national circumstances.** Constraints on the acceptability of energy price reforms may imply a role for other mitigation instruments, such as regulations and feebates, to reinforce key incentives to encourage, for example, a shift to zero-emission vehicles and other forms of mobility. Public investments, e.g. in smart grids, electric vehicle charging points and cycle lanes, and enhanced incentives for development and deployment of critical technologies, are needed.<sup>84</sup>

Nonetheless, such policies and investments need to be set out in the context of the need to shift away from a transport system based on private ownership and low occupancy. This means that incentives for zero-emission vehicles need to be accompanied with policies and regulations that aim to make shared mobility (including public transport) predominant; while also acknowledging alternative use of funds in infrastructure for public transport, active modes and micro-mobility. The location and type of supporting infrastructure for electrification (e.g. charging stations) will also need to be thought out in a context where shared rather than private mobility becomes the norm.

**Assistance measures for households, workers, firms and regions vulnerable to higher energy prices are especially important given the heightened vulnerability of the poor from the crisis.** Visible and productive use of carbon pricing revenues, funding recovery-related measures, for example, may enhance public acceptability.<sup>85</sup> Carbon pricing may be more acceptable at a time of lower energy prices,<sup>86</sup> though countries able to borrow may prefer delaying pricing until economic recovery is well underway. There are several examples of successful carbon pricing reforms where a comprehensive package was implemented at the right time, including in British Columbia, Canada.<sup>87</sup>

**Inefficient fossil fuel subsidies impose a burden on government budgets and taxpayers that is usually also environmentally harmful and socially inequitable.** A recent update of the OECD Inventory of Support Measures for Fossil Fuels shows that following a steady decline since 2013, government support for fossil fuel production and use is rising again.<sup>88</sup> In 2019, oil and gas industries in several countries have received additional benefit, mostly through direct government support to absorb corporate debt, fossil fuel infrastructure investments, and tax provisions that provide preferential treatment for cost recovery. Such policies could go against domestic efforts to help the environment by inducing increased greenhouse gas emissions and undermining the competitiveness of clean energy alternatives. The OECD Inventory analysis also

shows that the increase is coupled with a shift from consumption to production support. This shift seems to be confirmed also by the first fossil-fuel-related measures announced in support of a post-pandemic recovery by a number of oil-producing countries.

**By phasing out inefficient fossil fuel subsidies, countries are following through on their commitment to align public financial flows with climate objectives and transition to a low-carbon economy.** Inefficient fossil fuel subsidy reviews are being undertaken in several contexts globally including under the G20, G7 and APEC. These organisations committed in 2009 to rationalise and phase out inefficient fossil fuel subsidies over the medium term while providing targeted support for the poorest. The review process is an opportunity to evaluate current fiscal and other government support policies that may tilt the energy playing fields toward fossil fuel use and production. The review process can help identify areas for reform and better policy alignment.

*2.3.2. Regulations – these come into play during times of economic crisis and recovery in three ways:*

**First, finance ministers can avoid weakening existing environmental and worker protections in pursuit of short-term gains.** Examples include efforts in the US and EU to weaken automotive fuel efficiency standards even though economic analysis shows negative impacts on jobs, innovation, air pollution, health outcomes and carbon emissions. Efforts to relax regulations are often ineffective, as illustrated by the US coal industry performance in the last four years. They can also backfire on the businesses they are meant to support by inducing higher lifetime capital costs, especially for those investing in long-term assets.

**Second, regulatory and competition policies can induce innovation in growth sectors, lowering the level of public stimulus expenditures required to bring an economy back to full activity.** Although regulations are often the realm of sectoral ministries (such as energy and trade) and subnational governments, ministers of finance can have a larger role to ensure that resources from stimulus packages are well-used, or that pricing incentives, such as through a carbon tax, are leveraged. To incentivise change and innovation, it is often more effective to blend price signals with regulations, such as for energy efficiency or pollution control, than to rely on price signals alone.

Regulations can also accompany national-level co-financing of subnational investments. For example, finance ministers could reasonably foster changes in zoning, water and energy regulations that would improve markets and maximise the impact of fiscal outlays. For this purpose, finance ministries often need to develop analytical capacity. Technical advice and assistance from development financial agencies can be valuable in these cases, facilitating uniformity or harmonisation in standard setting.

Progressive regulations and standards can provide signals and policy certainty (and they align expectations) for the private sector that guide investments over the medium term. In addition to promoting savings through economic efficiencies, and promoting better living conditions to consumers, new standards can give a competitive edge to industries by driving innovation. This has happened in sectors ranging from information technology to transport to agriculture. Then, after new technologies are scaled up, the benefits they offer flow through to productivity gains, product differentiation and competitive advantages.

Regulations can also help address market failures that arise, for instance from split incentives. One example is in the rental building sector, where electricity bills are paid by tenants, therefore reducing the incentive for landlords to invest in energy efficiency. Compliance with new standards in new construction would, nonetheless, eventually lead to a better capital stock. Regulations, mixed perhaps with short-term subsidies, can drive economies of scale that will drive down the cost of the new climate-friendly technologies as they mature.

To better illustrate these broad principles, here are six specific examples of efficiency-inducing regulations that also reduce climate risks:

- Regulations that reduce urban air pollution can be highly cost-effective with significant benefits for health and productivity, including reducing the spread of highly infectious respiratory diseases. The connection with health has been established by the WHO, which estimates that 7 million people die prematurely due to pollution exposure every year. These regulations also reduce carbon emissions. The combined effect of eliminating major pollutants such as soot (black carbon) and methane can reduce the rate of global warming by half. The transport sector will no doubt have a crucial role in improving air quality or further exacerbating air pollution and related negative health impacts. The reduction in economic activities during the COVID-19 crisis led to significant improvements in air quality in many countries. Limiting bounce-back by implementing policies to redesign transport systems around accessibility, with an enlarged role for active modes and micro-mobility in the immediate term and also for public transport modes progressively, will be key.
- Increasing competition and updating energy market structure can facilitate the introduction of renewable energy, while compensating other energy sources for specific services they may provide for the electric system. One example is addressing the market handicap faced by renewable generators in the US, where interstate trade of natural gas and coal is regulated by federal law and electricity markets are regulated by states. This results in a fragmented market that hinders the access of solar and wind producers. A second example is the urgent need to foster regulatory mechanisms that split how productivity gains from the adoption of renewables are allocated. Currently, consumers enjoy the benefits, but the transition would be facilitated by regulations that allow workers and owners of stranded fossil fuel assets to be compensated as well. A third example is how new global standards for hydrogen could facilitate the development of a global market, benefiting both supply-side countries with high solar resources and demand-side countries with cleaner hydrogen-fuelled vehicles.
- Introducing new efficiency standards for buildings, responsible for around 30 per cent of global emissions, can contribute to important reductions in emissions, while promoting new technologies and semi-skilled jobs (major training and reskilling programmes may also be needed to make this feasible). Many countries are already acting. For example, in the commercial sector, the Netherlands announced in 2016 a ban on renting space not compliant with a 'C' energy efficiency rating by 2023 and 'A' rating by 2030. Applying new standards to the existing stock of buildings is reasonable in terms of climate

impact wherever the rate of new construction is low. Buildings that are not upgraded by the deadline will lose their value and will be difficult to resell. Announcing changes with enough lead time and providing options for financial support, e.g. subsidies, to budget-constrained owners are important considerations. This is an efficient way to stimulate demand for work in the aftermath of the COVID-19 pandemic, since renovations of the existing building stock can greatly contribute to jobs and strengthening social cohesion. Most of these types of projects support local contractors and business and generate savings that are reinvested in local economies, creating in the order of one full-time equivalent job per \$20,000–50,000 of investment.

- Efficient air conditioning and larger chillers can reduce energy consumption. Efficiency standards do not need, however, to be restricted to specific classes of equipment. When applied to whole systems, such as buildings, they can benefit from the same economic advantages of carbon taxes of fostering innovation and unexpected ways to reach the established goals, as illustrated by the growth of LED and other low-consumption lighting.
- Changing urban zoning to avoid urban sprawl, promoting location-efficient housing and compact urban development, in tandem with improving accessibility through public transport and active modes, improves the quality of urban life, health and efficiency. As seen across Latin America, from Mexico City to Bogota, Lima, Santiago and Buenos Aires, public transport fleet renewal – with electric buses and possibly subways along dense corridors – can have an important impact on pollution, productivity and carbon emissions; but significant changes will require the development of dense and integrated multi-modal transport networks. In addition to financial support, technical assistance may be needed to help reroute traffic, create hubs, update zoning maps, and explore property (or betterment) taxes that help capture positive externalities. Rethinking institutional frameworks to allow for and foster implementation of metropolitan bodies can help align funding with overall well-being priorities, ensure consistency within urban areas and increase technical capacity. Assigning dedicated central government funds to support infrastructure, but conditioning this to the development of solid planning tools and sustainable project pipelines, can be a powerful tool.
- Modifying cement standards can reduce both the cost and CO<sub>2</sub> content of concrete. In most countries, the requirements are the same for cement regardless of use (i.e. whether in large, high-stress structures or low-stress construction in houses or pavements/sidewalks). Despite the potential risks of fraud, the market could be segmented by admitting a large proportion of fillers with lower strength options. This would yield savings for retail users and reduce carbon emissions by double-digit factors.

***Third, regulations can also have far-reaching benefits through public purchasing.***

Implementing green public purchasing approaches – whether for low-emitting light bulbs, sustainable energy or building materials – can help shift markets and bring down costs of clean alternatives through economies of scale in a way that can become permanent after the crisis. For example, in addition to the opportunity

mentioned above for developing new standards for cement, public procurement regulations can be an important driver for introducing cement saving techniques in public buildings and complex constructions, with innovative use of concrete and low-carbon materials such as wood. The OECD has designed a collection of best practices for green public procurement at national and sub-national levels. The practices cover: Green Public Procurement Legal and Policy Framework; Understanding Market Capacity and Assessing Costs and Benefits; Introducing Environmental Standards in Procurement; Professionalising Green Public Procurement; Raising Awareness; and Monitoring Green Public Procurement.<sup>89</sup>

### 2.3.3. *Bailout conditions*

Polluting industries employ millions across the world, and they are some of the hardest hit by the pandemic. Many fossil fuel extraction and usage sectors are already asking for government bailouts. This does not have to be seen as a trade-off between climate and jobs. Preserving many companies will be essential to save jobs and maintain a strong foundation for economic recovery. Therefore, in the short term, bailouts will focus on stabilisation and jobs. To do this, the IMF has urged governments to offer loans, guarantees, capital injections and wage subsidies. As longer-term support is also likely to be needed, it is at this point that bailout conditions could be linked to sustainability objectives, including climate, to support a strong and sustainable recovery. One lesson from the 2008 financial crisis is to avoid building back pre-existing inefficient and vulnerable systems, and instead encourage firms to embrace newer (but proven) standards and business models.

Experience shows that attaching efficiency and emissions targets to financial support can give corporations an edge to compete in a changing marketplace. One example is the success of the American Recovery and Reinvestment Act of 2009 regarding the automotive sector: those bailouts included a commitment to higher fuel economy regulations and successfully fostered a range of new technologies. It can therefore be beneficial to include more stringent emissions targets to guide the longer term support provided to airlines, hotels, carmakers and many other industries that can invest in new more sustainable business models, including in resource and energy efficiency, and/or renewable energy sources. This is starting to happen. The airline industry has one of the highest emissions growth rates of any economic sector and special attention (going beyond the EU Emissions Trading System, for example) is warranted. Conditions were attached to both the recent Air France-KLM Group and Austrian Airlines bailouts, including emissions reductions targets, sustainable fuel use targets, and cuts in domestic flights where rail alternatives less than 2.5 hours exist.<sup>90</sup>

### 2.4. What decision-makers, including finance ministry officials, are thinking and doing on recovery packages

A recent survey of 231 finance ministry officials, central bank officials and other economists, representing 53 countries, including all G20 nations, sheds new light on current perspectives around COVID-19 fiscal recovery packages, giving a possible insight into what countries might deliver. Twenty-five fiscal recovery 'archetypes' were defined<sup>91</sup> and respondents assessed each archetype on four core metrics: speed of implementation, long-run economic multiplier, climate impact potential and overall desirability of the measure. Figure 4 presents the results.

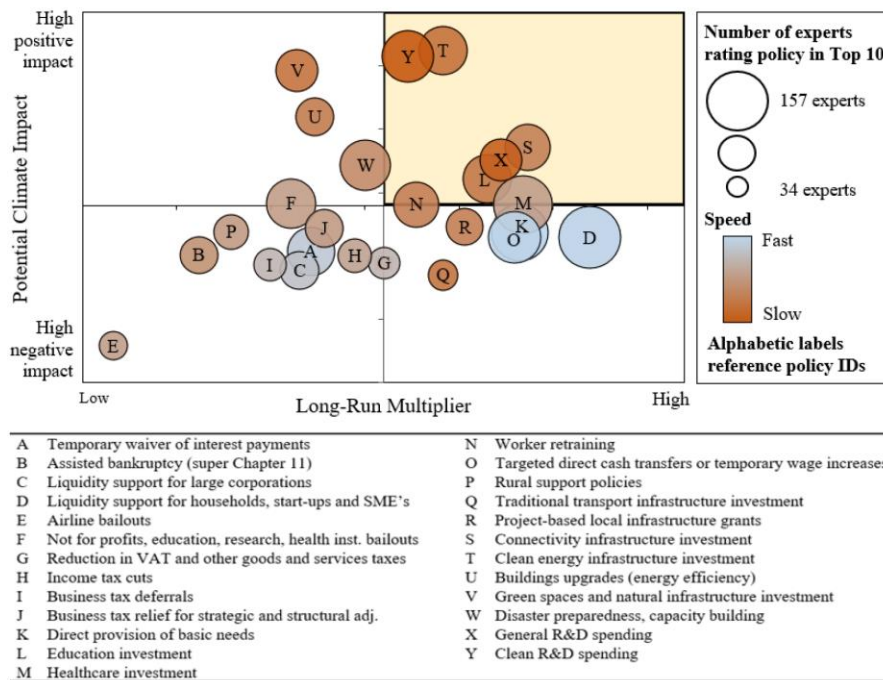
On average, the most *desirable* recovery-type policies were healthcare investment (labelled M in Figure 4, Panel A), disaster preparedness (W), clean R&D spending (Y), not for profit bailouts (F), and clean energy infrastructure investment (T). The worst-performing policies were airline bailouts (E), traditional transport infrastructure (Q),



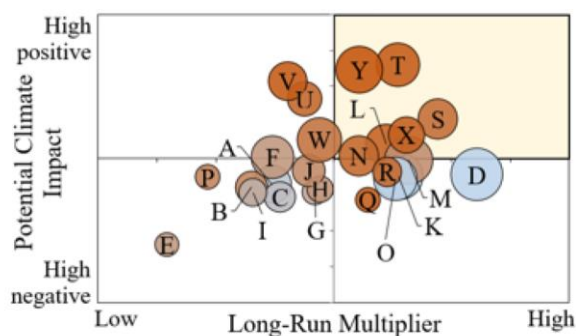
income tax cuts (H), reduction in VAT and other goods and services taxes (G), and rural support policies (P).

Sample results for just finance ministry officials are also included in the research and differ from the averages in Panel A. Finance officials perceived that the negative climate impacts of unconditional airline bailouts (E) were not as severe as the average response shown in Figure 4, Panel A, that the multiplier of business tax relief for strategic and structural adjustments (J) was much higher, and that the speed of implementation of assisted bankruptcy (B) and VAT reductions (G) were much lower. On an overall basis, finance officials' opinion on the climate impact potential of policies across all groups was the least controversial (lowest variation), while speed of implementation was the most controversial (highest variation).<sup>92</sup>

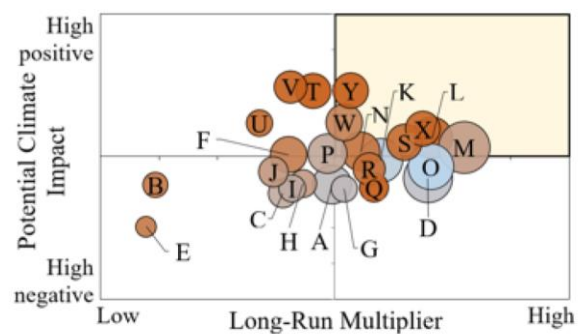
**Figure 4. Panel A: Mean survey results across 25 fiscal recovery archetypes**



**Panel B (left): High income countries**



**Panel C (right): Lower and middle-income countries**



Source: Hepburn et al. (2020)<sup>93</sup>

The study combines survey responses with evidence from the literature to reveal a core set of fiscal recovery options, for both developed and developing countries, with the highest economic multipliers and positive climate impact. These include:



- **Clean physical infrastructure investment** in the form of renewable energy assets, storage (including hydrogen), grid modernisation and carbon capture and storage (CCS) technology
- **Building efficiency investment** in the form of renovations and retrofits, including improved insulation, heating, and domestic energy storage systems
- **Education and training investment** to tackle both the immediate impacts of COVID-19 on employment and wider structural shifts from decarbonisation
- **Natural capital investment** to improve ecosystem resilience and restoration of degraded land and habitats
- **Clean R&D** investment and partnerships to bring down the cost and encourage diffusion of innovative new technologies that can drive low-carbon, climate resilient growth
- **Rural support and investment** to accelerate the adoption of sustainable agriculture, ecosystem regeneration, or to accelerate clean energy installations. (Although we note that rural support policies are not seen to be as desirable in the survey results).

While the Hepburn et al. (2020) paper indicates current thinking and a strong view among policymakers and experts, recent evidence supports this thinking (as discussed in Section 2.2), in particular that these investments are more labour intensive in the short run than traditional stimuli.

There is significant heterogeneity in terms of what countries are doing on recovery packages, largely reflecting their stage of the pandemic: Europe, North America and northern Asia were hit the hardest first and the pandemic is now hitting other regions, mainly in the developing world. Except for a few East Asian countries, the virus is continuing to spread in many developing countries, in particular in South Asia and Latin America. As such, many countries have not yet entered the recovery phase. What is clear is that the economic impacts from the pandemic are severe and countries will need to implement recovery packages as soon as they have contained the health emergency. In this context of economic, financial, and social stress, there may be push-back on climate action. But finance ministers need to underscore the many economic benefits that can be derived from green recovery packages, including jobs and economic multipliers.

While surveys and evidence are vital to learn from and set the necessary foundations, in practice recovery packages will be tailored to individual country circumstances and will likely vary by and within regions, as the Latin America and Caribbean regional example in Box 6 demonstrates. Many countries have already announced details of their recovery packages and they are indeed very country specific. Details of a selection of packages are presented in the Appendix. As more packages are prepared, released, and implemented, Coalition members can work together to evaluate, share and learn from their experiences.

## Box 6. Mobilising capital and investments at scale for the green recovery in Latin America and the Caribbean

*Investments and the development of a financial sector in a highly diverse region require tailor-made approaches.*



Figure 5. Climate risk and financial systems of Latin America: regulatory, supervisory and industry practices in the region. Source: IDB.

As is the case in other regions with emerging market economies, there is great variety across the Latin America and Caribbean region (LAC) when it comes to the progress made by Ministries of Finance to integrate climate considerations in policy, regulations and supervision of the real economy and financial sectors.

As of May 2020, countries including Brazil, Chile, Colombia and Mexico continued to lead the region in the development of sustainable finance markets, with green bonds issuance, and active dialogue with investors and financial institutions to agree on sustainable practices (domestic ones and/or international frameworks). However, many others still lack the frameworks and the capabilities that could underpin capital flows towards a green recovery.

As countries are working on building momentum and progress, through partnerships and alliances forming in the private sector, a green/climate-friendly recovery needs to leverage these new partnerships, while being conscious of the level of progress and existing challenges in each country.

An economic recovery package focused around green investment will need to consider the socioeconomic and institutional realities that characterise countries in LAC, and emerging market economies in general, but can also learn from ongoing practices in more advanced economies. Ministries of Finance could consider options for the mobilisation of capital from the private sector to support the recovery, and instruments for greening their budget and for prioritising public policies with the highest impact.

A first group of policies could include:

- (i) Classification of public investments and expenditures against green/sustainable taxonomies and/or standards for the prioritisation of public investments and the preparation of financial instruments (e.g. Sovereign Green Bonds) that the Ministry of Finance could use to tap domestic and international financial markets (as in the case of the green bonds of Chile and the framework prepared by Colombia and Mexico).
- (ii) The promotion of market transparency and adoption of appropriate frameworks for environmental, social and governance (ESG)/climate risk management and exposure assessments. These could be considered as conditions for companies and financial intermediaries accessing public lending programmes, following the example of Canada – at least for countries where regulators and supervisors have committed

to international standards for transparency on socio-environmental risk, such as Chile and Mexico.

(iii) Assistance for project preparation facilities at a national and sub-national level, and provision of risk mitigation facilities to allow cities, states and provinces to access finance with liquidity drying up in domestic markets.

(iv) The promotion of systematic resilience assessments for any public investment project and programme, including those developed under PPP frameworks (as in the case of Jamaica).

A second group of green policies could include, in the context of implementing a green filter such as green budgeting, adoption of zero-based budgeting practices. These can correct synergies that favour ineffective budget allocations that undermine the Paris Agreement and improve the understanding of effective fiscal multipliers in unlocking green jobs growth.

*Source: Prepared by the Inter-American Development Bank (IADB)*

## Section 3. A supportive financial system

### Summary

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The agenda set out in this paper will require concerted national actions on the part of all countries. This section underscores that international cooperation and support can play a powerful role in reinforcing national actions, especially in emerging markets and developing countries. This includes support for capacity building to strengthen the preparation and implementation of robust recovery packages, including around investment plans, strengthening supportive policy frameworks and in mobilising and aligning the scale of finance that will be needed.

The rescue and stabilisation of economies will greatly amplify pressures on the balance sheets of national and sub-national authorities, use up the firepower of international financial institutions, and could raise risk premia for the provision of private finance to most emerging markets and developing countries. In this context it will be necessary to mobilise all pools of finance and utilise them more effectively.

As discussed in Section 2, strengthening domestic public finance foundations must be a key priority, but international public finance will have to be strengthened to meet the urgent needs of vulnerable developing countries and support ambitious climate action in emerging markets and developing countries. Although the negotiations of climate finance commitments are outside the remit of finance ministers, the Coalition can play a role in identifying priority needs and making the most effective use of international climate finance.

The challenge of scaling up sustainable investments to support a strong and green recovery and the much more difficult environment for mobilising finance in the post-pandemic world has also underscored the importance of strengthening the role of national and international development banks. Given the important catalytic role they can play in supporting both better public and private investment and in scaling up and reducing the cost of finance, national authorities should seek to reform, strengthen or even create effective national development finance institutions.

The role of multilateral development banks and international development finance institutions has also become much more important given the challenges that emerging markets and developing countries will face in developing and financing recovery packages, and, beyond that, in long-term transformation. As shareholders of the MDBs and the international DFIs, the Coalition can help give impetus to the changes needed to make the overall system more effective.

The task of enhancing the mobilisation of private finance for climate action (the central goal of Helsinki Principle 5) has become more important and more difficult in the COVID-19 context. To increase the scale and pace of climate finance in emerging markets, there is a need to crowd-in capital from investors and create new low-carbon and resilient markets. Concerted efforts are needed to overcome the impediments to mobilising private capital. Government commitments and processes are important to ensure that the necessary pre-conditions and supporting environment of promoting sustainable finance are in place, including through pipeline development and better taxonomies and standards.

The financial system also needs to remain focused on the opportunities and risks in the climate transition. All finance now needs to be aligned with the Paris Agreement and sustainable development. The Coalition could work with The Network of Central Banks

and Supervisors for Greening the Financial System (NGFS) and other stakeholders in taking forward this agenda through the three 'Rs' that Mark Carney has set out: reporting, risk management and returns.

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***The rescue and stabilisation of economies will greatly amplify pressures on the balance sheets of national and sub-national authorities, use up the firepower of international financial institutions, and raise risk premia for the provision of private finance to most emerging markets and developing countries.*** Emerging markets and developing countries are likely to face not only more acute fiscal constraints but also balance-of-payment pressures from widening current account deficits and reversals in capital flows. It will be challenging in this context to mobilise the scale of finance necessary to finance robust rescue packages and long-term transformation that can drive to net-zero emissions and accelerate climate resilience. This will require mobilising and utilising *all* pools of finance more effectively. It will also be important to ensure that the financial system is able to respond to risks posed by climate change, and in so doing help to reduce and manage that risk.

***Strengthening domestic public finance foundations has emerged as a key priority,*** as underlined in Section 1. International public finance will also have a major role to play in supporting developing countries and emerging markets, both to meet critical needs that call for concessional finance but also to scale up development finance and to mitigate risks and catalyse private finance. Thus, the Coalition will need to give attention to four elements of climate finance to enable the implementation of climate-friendly stimulus packages and successful long-term transformation:

- (a) Bolstering and making more effective use of international climate finance
- (b) Harnessing the potential of the MDBs and the DFI system
- (c) Mobilising private finance at scale
- (d) Strengthening the financial system so that it is better able to respond to climate risk

### 3.1. Bolstering and making more effective use of international climate finance

Although the targets and delivery of the climate finance commitments fall under the rubric of the negotiations, the availability and effective use of concessional finance is a matter of relevance for finance ministers. As the Coalition brings together important donor and recipient countries, it may be useful to consider priority climate finance needs, especially of the poor and vulnerable countries in the aftermath of COVID-19 and how these could be met most effectively. This could include enhanced and better deployment of, and access to, bilateral concessional finance and strengthening the multilateral concessional finance architecture.

### 3.2. Enhancing the potential of national and multilateral development banks

***Development banking at both the national and international levels can play a powerful role in unlocking investments and mobilising finance at scale for the green recovery.*** Development banks can add value to both public and private investment by taking a long-term view and account of spillovers and externalities, especially for infrastructure investments. They can help bring forward and prepare sound projects (from large complex projects to aggregation models), create platforms for scale, and set new examples and facilitate their multiplication. Capital markets are often weak in managing large risks, taking long-term horizons and tackling government-induced policy risk and other political risks. Development banks can be trusted conveners,

develop technical and sector skills and build partnerships to overcome capital market failures (particularly for early stage risk), and can deploy a range of instruments – equity, long-term loans, mezzanines, political risk guarantees, climate and disaster risk financing and insurance – to manage risk, thereby reducing the costs of financing. Development banks that are themselves well governed can improve governance and transparency of public and private investments and financing facilities by being an accountable public entity (to parliament, for example). They can make a major difference in unleashing private finance, including by working with private retail banks to take programmes to scale, such as rooftop solar. Examples exist from IFC, EIB, EBRD and other regional development banks and several national investment banks such as KfW and Caisse des Depots. Given the imperative both to scale up sustainable investments and secure the needed financing in supporting a strong and green recovery, national authorities should seek to reform, strengthen or even create effective national development finance institutions. Governments can collaborate on this agenda through IDFC and EDFI.

**Multilateral development banks and international development finance institutions can play an important catalytic role especially in emerging markets and developing countries.** In particular, the MDBs and the DFIs, working with other stakeholders, including national institutions, are uniquely positioned to support an ambitious scaling up and alignment of finance needed for the stimulus packages. Together they can help countries to prepare and implement robust stimulus packages, bolster the types of investments and policies described in Section 2, engage much more strongly in upstream project preparation and platforms to go to scale, and they can help countries reflect these commitments and actions in more ambitious NDCs. By working in partnership with national institutions and the private sector, they can also help countries mobilise the volume of finance needed and bring down the cost of capital and manage risk because of their capacity to mitigate risks and tap low-cost finance. To do this more effectively, they must strongly increase the scale of their own lending and their focus on better aligned risk structures, e.g. fewer loans and more guarantees and concessional finance, and internal incentives to attract private finance. MDBs should seek much bigger ‘multipliers’ in their collaboration with the private sector. In this way the role of MDBs (and DFIs more broadly) can be significantly enhanced if they work better as a system, as the G20 Eminent Persons Group has underscored.<sup>94</sup> As shareholders of the MDBs and the international DFIs, the Coalition can help give impetus to the changes needed to make the overall system more effective.

**Emerging market and developing countries will face severe economic stress in the coming period on several fronts, including very difficult fiscal balance of payment pressures.** Risk aversion of the private sector will be high and it is unlikely to provide finance on the scale needed nor on terms consistent with sustainability. The MDBs/DFIs can bring down the perception of risk around green investments and help reduce the cost of capital. This will make green investments more attractive than high-carbon alternatives, where the risk of stranded assets is likely to be high, which could leave governments exposed in the future. Today the world is at an inflection point in terms of the role of MDBs in emerging markets and developing countries. Their actions now are likely to influence not just the strength and quality of the recovery packages but also the success of longer-term transformation and the future of the climate.

**MDBs have been working on enhancing their support for climate action since the Paris Agreement.** At the UN Climate Summit in September 2019, the MDBs issued a high-level statement on climate action in which they set out collective ambitions including

for increased climate finance with a collective target for 2025 (\$65 billion, with \$50 billion for low- and middle-income countries); doubling of finance for adaptation; increasing private sector mobilisation by \$40 billion; helping countries to deliver on their Paris Agreement commitments and move away from fossil fuels; and developing a new transparency framework. They have been working as a group on aligning their support, finance and internal operations with the Paris Agreement through a new framework based on six pillars: alignment with mitigation goals; adaptation and climate resilient operations; accelerated contribution to transition through climate finance; strategy, engagement and policy development; reporting; and aligning internal activities. Most MDBs have been revamping their climate support strategies and setting more ambitious targets. The European Investment Bank will play a central role in mobilising and financing at least €1 trillion of sustainable investments over the next decade under the European Green Deal Investment Plan.<sup>95</sup> They have also been working on how to tackle impediments to sustainable infrastructure investment and finance through the joint MDB Investment Cooperation Platform linked to the G20. The IDFC too is now fully engaged on enhancing its contribution to the Paris agenda, and is seeking to engage public development banks across the developed and developing world through a special planned conference in advance of COP26. There is also renewed focus on the resources and effectiveness of the multilateral climate funds including the GCF, the CIFs and the Global Environment Facility.

***MDBs need to work more systematically with the private sector to achieve scale of finance.*** As liquidity improves after the COVID-19 crisis, and private finance starts to look for a home, we will need to enable innovation in the financial sector to find new ways to channel capital to the companies, sectors and countries that need it most. This will require a rapid expansion of MDBs' own finance and renewed action on mobilising finance by working more closely with the private sector. Mobilisation will involve establishing public-private partnerships and new market structures to increase sustainable private finance flows. But we must go beyond project-based mobilisation. MDBs will need to assess their toolkits and identify what they can replicate and scale, including syndication platforms, targeted green bond funds, technical assistance/advisory services for tackling investment barriers and building local capacity, and better structures for a rapid expansion of blended concessional finance.

***MDB shareholders need to provide strong and coherent support, in concert with client countries.*** There is a need to strengthen the governance of the MDB system as a whole, as laid out in the G20 EPG report.<sup>96</sup> There should be a strong recognition that there is no zero-sum game, and indeed there are powerful synergies, in MDBs serving the needs of both low- and middle-income clients. Important will be increasing demand from client countries for green development. The COVID-19 pandemic has also increased the urgency to leverage MDB resources more efficiently. In the response to COVID-19, the MDBs must respond with the capital they presently have. They can also greatly improve on private sector multipliers. But the scale and urgency of the climate challenge can be met only if the MDBs are able to catalyse sustainable investments not just for recovery but for sustained transformation. MDBs have committed unprecedented support to meet the rescue and stabilisation needs of emerging markets and developing countries. This will likely utilise much of their lending headroom and capital. Given the anticipated demands for recovery and beyond, there is an urgent need to review the role and capital adequacy of MDBs in the post-COVID-19 context. Because of their financial structure, growing the capital base of the MDBs is one of the most efficient ways to expand the volume of resources



available for climate adaptation and mitigation, alongside other sustainable development objectives. The Coalition can foster a better understanding among an important group of finance ministers on the role of the DFI system and build support for the necessary ambition and urgency of action. It can also help to support donor countries create greater demand from client countries for mitigation and resilience.

### 3.3. Mobilisation of private finance

**The need to mobilise greater sums of private finance to meet climate goals is well accepted and will only increase in the post-COVID-19 world – the question remains how to achieve this mobilisation.** Asset owners (typically pensions and insurance) with their long-term investment goals could offer a good match to sustainable investments; asset managers and investment banks are increasingly interested in sustainable investments, possibly driven by investor requests, the need for portfolio diversification and pipeline origination, social responsibility and, in some countries, regulatory requirements. The number of impact investors and philanthropy foundations is growing fast, with increased social awareness. Yet in 2016, institutional investors worldwide contributed just \$2 billion of their more than \$42 trillion in AUM to climate finance, which represents a significant increase over the previous years, but still equals just 1 per cent of all private sector climate finance and less than 1 per cent of total climate finance.<sup>97</sup>

The OECD has examined the characteristics of sustainable infrastructure investments involving institutional investors with project-level intervention by the public sector.<sup>98</sup> It uses an updated database containing 152 observations from projects in G20 countries between 2010 and 2018. The data show that renewable electricity, and specifically the wind sector, dominate sustainable institutional investments with public intervention. More than two-thirds of projects in the database are financed through an intermediary who finances unlisted project equity. Almost all projects benefit from a risk-mitigating public intervention and in almost half of the cases more than one. Transaction enablers are used in a quarter of cases and rarely without risk mitigants present.

**To increase the scale and pace of climate finance in emerging markets, there is a need to crowd-in capital from investors and create new low-carbon and resilient markets.** This is particularly true in the wake of the COVID-19 crisis where developing countries are vulnerable to the growing credit crunch, with impacts on many low-carbon sectors. As the global economy recovers, institutional investors will likely resume seeking opportunities for investments in emerging climate business. However, there is a disconnect between what the private sector is willing to invest in climate and what they are willing to invest in emerging markets. Most institutional investors have only minimal allocations to emerging markets, with most climate investment funds going to industrialised markets. And as a result of the growing COVID-19 crisis, we are seeing large capital outflows from emerging markets. MDBs and other DFIs need to help investors bridge this gap and create investable green asset classes, which may require bringing in concessional finance at scale to de-risk the investments.

**Concerted efforts are needed to overcome the impediments to mobilising private capital.** The impediments include: i) information asymmetry, which needs to be addressed in order to lower transaction costs (such as in project origination and preparation) and correct the perceived high risks; ii) scalability of sustainable investment and standardisation of practice, which calls for joint efforts by multiple stakeholders to 'blend and conquer'; iii) challenges to match these different investors



with the risk-adjusted returns they seek, and to allocate the 'social returns' through new fund structures.

**Government commitments and processes are important to ensure that the necessary pre-conditions and supporting environment of promoting sustainable finance are in place.** In addition to a sound financial system, governments' commitment to sustainable development is key. Governments can help by including climate and SDGs, as appropriate, in services they contract from the private sector, including for infrastructure through PPPs. Infrastructure projects could be an important anchor to implementing SDG and climate change objectives from two angles: in the way the specific infrastructure asset is designed (sustainability and resilience) and increasing the community development interventions in the area of influence of the asset in question. The latter should be aligned with national and subnational social and environmental public policies to maximise impact and facilitate access to available funding resources.

**The other key role governments play is through pipeline development.**<sup>99</sup> Individual project-by-project mobilisation will not solve the issue fast enough, particularly for emerging markets. Although governments are already taking actions to develop robust pipelines in a range of country settings, these efforts need to be strengthened – and lessons shared – if long-term climate mitigation objectives are to be met. Governments' role includes: leadership, through championing the development of a robust project pipeline; transparency, by developing sectoral investment plans, sourcing projects, and using data effectively; prioritising, through expediting strategically valuable projects; project support, including through the investment-enabling environments that affect the risk-return profiles of projects such as policy incentives, the supply of public funds and institutional support; and eligibility criteria to align projects with long-term climate objectives – combined with dynamic adaptability to keep project pipelines aligned with policy objectives over time. Several MDBs are working on new business models and innovative platforms for scaling up and crowding in private capital. For example, the IFC along with partner institutions has launched the FAST-Infra platform, which targets both the supply and demand side of infrastructure finance.

**A new approach to 'blended finance' is needed.**<sup>100</sup> Blended finance projects to date have resulted in leveraging disappointing levels of private finance and have not directed capital to emerging markets at a scale sufficient to tackle rising climate needs. Institutional investors prefer to invest through an infrastructure fund or other externally managed vehicles, and by investing equity rather than issuing debt.<sup>101</sup> Public actors already use a variety of approaches to mobilise and catalyse institutional investment in sustainable infrastructure – the three most prevalent risk mitigants are loans, co-investments and cornerstone stakes, i.e. co-investments with a majority stake taken by a public actor, such as a green investment bank. Blending will need to incorporate a range of interventions: i) spending on public policies, regulations and institutional reforms supportive of private sector financing of the SDGs; ii) standardised investment instruments and vehicles incorporating SDG performance objectives (e.g. impact, resilience bonds); iii) grant or concessional capital to bridge the potential risk/return gap for traditional commercial investors.

### 3.4. Strengthening the financial system to support recovery and climate transition

**The financial system as a whole also needs to remain focused on the opportunities and risks in the climate transition.** All finance now needs to be aligned with the Paris

Agreement and sustainable development. To mitigate the risks of financial instability due to climate change, governments, central banks, regulators and the financial industry need to transform risk management, improve the information and disclosure of climate risk, and enable investors to make informed decisions on the climate readiness of their portfolios. Information asymmetry could also be addressed by improving and, possibly, standardising metrics for the classification of assets as 'green', 'brown' or in transition to green, to provide investors and markets with a clearer indication of which activities are to be considered sustainable and to mitigate 'greenwashing'. These steps will lay the basis for a more sustainable financial system that helps drive and smooth the transition to a zero-carbon and climate-resilient economy. Financial instruments to achieve these goals – including green loans and bonds – need to be developed and supported further, for example through nationally agreed taxonomies and standards. The relative performance of these instruments though the economic downturn should be monitored to determine their resilience to shocks. Initial evidence suggests that ESG-based instruments have fared better, although heightened risk aversion has affected all new issuance including for green bonds.<sup>102</sup>

**Monetary authorities also need to remain focused on the opportunities and risks.** The scaling up of Quantitative Easing (QE) early in the crisis was intended to provide liquidity, but ongoing support is likely to be needed and this could be linked to sustainability and quality of the assets to support a strong and sustainable recovery; there is a need for greater fiscal-monetary coordination. QE programmes after the global financial crisis of 2008–09 did not consider climate change, and evidence suggests they leaned towards assets from carbon-intensive companies.<sup>103</sup> Central banks now have ample tools to ensure that its responses at least 'do no harm' and balance the multiple objectives of QE, including supporting the recovery; for example they can provide liquidity but avoid companies that are clearly inconsistent with climate goals.<sup>104</sup> These companies will be poorly positioned to take advantage of the major secular trends and the long-term transformation to net-zero.

**The Coalition could work with The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) and other stakeholders in taking forward this agenda** on financial system transformation. The three 'Rs' that Mark Carney has set out – reporting, risk management and returns,<sup>105</sup> aim to ensure that every company, bank, insurer or investor develops credible plans for the transition and implements them:

- **Refine reporting methods and develop pathways to make them mandatory:** Reporting/disclosure has been set out by the Task Force on Climate-related Financial Disclosures (TCFD), which is a private sector, voluntary initiative supported by the official community, including the NGFS. Together, the reporting (TCFD), risk and return framework can assist the financial sector in allocating capital in a way that manages risk and seizes the opportunities in the transition to net-zero. The TCFD is an important part of the system transformation that is needed and demand for this is building. For example, banks, insurers, pension funds and investors with balance sheets of \$139 trillion are demanding TCFD disclosure. Canada has required mandatory reporting for employers accessing liquidity assistance during the crisis.<sup>106</sup>

The TCFD focuses on encouraging companies to report their strategic forward look, risk management and hedging strategies, and to decarbonise activities and supply chains to safeguard shareholder value against transition risks.<sup>107</sup>

There has been surprisingly high uptake. Over 75 per cent of the top 1,100 companies globally now report against TCFD standards, but not all of the standards, which is an issue. And while the TCFD is moving forward in advanced markets, there is some way to go to get a more systematic application in emerging markets. Going forward, once TCFD disclosure recommendations are finalised, governments and regulators will need to decide pathways to make the TCFD recommendations mandatory and take them beyond advanced economies. There is also a need for central banks and regulators to set supervisory expectations for TCFD-consistent disclosures for financial firms.

- ***Rapidly accelerate the development of better data and analytic tools to improve climate risk management:*** A step change in risk management is needed to ensure firms and investors can manage and measure the risks in the transition to a net-zero world. The purpose is to stretch horizons so that firms can manage the risks better and take different decisions today in the light of otherwise opaque future financial risks. A key part of this is better supervision and the development of open-source climate stress testing and scenario analysis that can be used by all sectors; the NGFS will soon publish guidance on climate-related scenario analysis and a collection of reference scenarios for use by all interested central banks and financial regulators. A priority is to build a large coalition of central banks and supervisors to conduct climate stress tests. The IMF is also stepping up its work on climate stress testing in the context of the Financial Sector Assessment Program (joint with the World Bank).<sup>108</sup>
- ***Ensure all financial firms and companies are focused on the opportunities and returns from the transition to net-zero:*** 120 countries so far have committed to reducing emissions to net-zero. The United Nations-convened Net-Zero Owner Alliance represents a group of institutional investors with over \$4.6 trillion in assets under management which have united to align their portfolios with a 1.5°C scenario.<sup>109</sup> Every company in every sector – insurer, pension fund, etc. – should be expected to commit to net-zero and disclose a net-zero plan, including the opportunities and returns they expect. Providers of capital, banks, investors' pensions funds and insurers need to disclose where they are on the path to net-zero, including what their overall portfolio looks like compared to Paris objectives. Priorities for this work include creating a common framework for investors through which they can assess the credibility of company transition plans and assess capital allocation, expanding the coalition of financial firms committed to net-zero (including a commitment to publishing transition plans and disclosing progress), and agreeing approaches to Paris alignment. The latter involves better metrics and methods to align investor portfolios with net-zero, and also to align finance flows. Progress on aligning flows will mean moving away from binary green/brown taxonomies or broad ESG scoring to metrics that better measure and support a whole-economy transition through the various shades of green to net-zero.

## Appendix. Details of recovery packages announced, selected countries

Country	Recovery packages announced
Germany <sup>10</sup>	<p>Germany has a €130 billion fiscal package to strengthen broad consumption and incentivise private and public investment, particularly in green and digital technologies. The stimulus package includes 57 detailed measures, a selection of which are summarised here:</p> <ul style="list-style-type: none"> <li>• The VAT tax rate will be cut from 19% to 16%, with the lower band going from 7% to 5% from 1 July until the end of the year. This measure has a cost of approximately €20 billion.</li> <li>• A 'Social Guarantee for 2021' to stabilise contributions into the social security system at 40% – this will protect net incomes of employees and improve competitiveness of companies. Cost is approx. €5.3 billion for 2020.</li> <li>• EEG levy on electricity prices to subsidise wind and solar renewable energy sources reduced, to reduce electricity prices for consumers. Compensated by the federal budget (approximately €11 billion), so that there will be no adverse impact on the promotion of solar and wind.</li> <li>• €25 billion programme for companies in hard-hit economic sectors. Compensation of up to 80% of fixed costs of business (capped at €150,000 per company) for companies which had an April/May revenue decline of more than 60% relative to the same period in 2019. Corporates allowed to carry over up to €10 million (per company) of losses incurred in 2020. Introduction of a 2.5x higher depreciation factor for Capex. Specific plan for the continuation of the short labour scheme beyond 1 January 2021 to come.</li> <li>• €50 billion future investment package aimed at reducing Germany's carbon footprint and promoting R&amp;D. Includes: support for climate-friendly mobility (e.g. grants for e-cars, investment grants for rail network, federal investment grants for e-buses and e-trucks, climate-friendly power and fuel supplies for the shipping and aviation industries); €7 billion funding for the national hydrogen strategy; promotion of R&amp;D, especially on green and digital projects (e.g. tax incentives, funding for AI and quantum computing programs, and 5G and 6G technologies and networks); €10 billion funding for health systems, hospitals, health care personnel, medical supply production and COVID-19-related vaccine research.</li> <li>• Public investment will focus on municipalities. Public investment projects worth €10 billion will be moved forward in 2020 and 2021. An additional €4 billion p.a. for municipalities, through a higher federal payment into social housing schemes. Launch of a</li> </ul>

	<p>Municipal Solidarity Pact 2020 to cover all losses in the corporate taxes accruing to municipalities. Additional grants for municipal public transport systems (€2.5 billion). Upcoming EU Presidency will be used to launch an initiative to accelerate public investment across the EU. Capacities in child-care facilities will be expanded (€1 billion) and there will be an additional €2 billion for daycare and full-day schooling investment programmes.</p> <ul style="list-style-type: none"> <li>• At the European level, Germany will use its German Council Presidency to agree on an ambitious recovery initiative, building on the Franco-German proposal for a €500 billion European recovery fund and to finish all required legislative work by the end of this year to make the funds available by the beginning of 2021. The government will also commit an additional €3 billion by 2021 in international support.</li> </ul>
<p><b>New Zealand</b><sup>111</sup></p>	<p>New Zealand's NZ\$50bn (US\$30bn) recovery package includes:</p> <ul style="list-style-type: none"> <li>• Business support, including: <ul style="list-style-type: none"> <li>- A wage subsidy scheme to keep workers connected to their jobs.</li> <li>- A business finance guarantee scheme.</li> <li>- NZ\$400m tourism sector relief package.</li> <li>- Targeted sector support totalling NZ\$41.4 million to be spent across three years in the construction, digital and agritech sectors.</li> <li>- NZ\$0.6 billion support for the aviation sector. The government has also approved a NZ\$0.9 billion debt funding agreement (convertible to equity) with Air New Zealand to ensure continued freight operations, domestic flights and limited international flights.</li> </ul> </li> <li>• NZ\$6.3 billion invested in the health sector.</li> <li>• NZ\$15 billion to fund infrastructure projects.</li> <li>• NZ\$1 billion is being invested to improve transport, including NZ\$667 million for rail infrastructure (including tracks and new wagons and locomotive) and NZ\$400 million to replace Interislander ferries.</li> <li>• NZ\$56 million increase to the government's insulation and heating programme.</li> <li>• 8,000 new public and transitional homes.</li> <li>• NZ\$1.1 billion environmental jobs package, which will create almost 11,000 new jobs.</li> <li>• NZ\$900 million to support Māori, which includes a \$200 million Māori employment package and NZ\$400 million increase to Māori education.</li> </ul>

<b>Greece</b> <sup>112</sup>	<ul style="list-style-type: none"> <li>• Greece has a three-part economic strategy: <ol style="list-style-type: none"> <li>1) Exit strategy, applying to the immediate future and involving the gradual lifting of lock-down measures.</li> <li>2) The 'new normal' strategy, applying to the period after lifting lockdown measures and before the medical endgame is achieved (e.g. a vaccine or effective therapy).</li> <li>3) The 'day after' strategy, aiming to accelerate long-term growth, after the medical endgame has been reached.</li> </ol> </li> <li>• This strategy faces two major, interrelated challenges: medical uncertainty, which leads to increased economic uncertainty, causing headwinds to economic recovery, and idiosyncratic risks due to legacy imbalances and increased exposure to sectors particularly affected by the pandemic (e.g. tourism), which raise the prospect of the crisis's asymmetric transmission.</li> <li>• During the exit and 'new normal' phases, Greece aims to moderate the supply and demand shocks caused by the pandemic – by maintaining liquidity, supporting employment, applying measures incentivising firms' production and labour participation, and frontloading, as much as possible, investment spending (public and private), adjusting the policy mix as they move forward. In parallel, the reform agenda will be accelerated, in order to prepare the economy for the day after the pandemic has ended.</li> <li>• Green reforms focus on three areas: <ol style="list-style-type: none"> <li>1) Transforming the financial system to support climate transition. Includes greening the financial system, adopting the new EU taxonomy, cooperating with the Hellenic Capital Market Commission and Athens Stock Exchange on green listing and with the Bank of Greece on green banking.</li> <li>2) The gradual integration of green budgeting principles to 'green filter' fiscal decisions.</li> <li>3) Collaborating with other relevant ministries on planning and implementing their national energy and climate plan, including the clean energy transition, circular economy and waste management strategic plans.</li> </ol> </li> </ul>
<b>Philippines</b> <sup>113</sup>	<p>The Philippines has designed a 4-Pillar, P1.74 trillion (US\$35 billion) economic strategy to address the health and socioeconomic impacts of COVID-19:</p> <ul style="list-style-type: none"> <li>• Pillar 1: Includes emergency subsidy programme for 18 million low-income families; wage subsidy programme for employees of micro, small and medium enterprises (MSMEs) and cash assistance programme to displaced workers; loans for MSMEs; loans for farmers and fishers.</li> </ul>

	<ul style="list-style-type: none"> <li>• Pillar 2: Expanded medical resources to fight COVID-19 and ensure the safety of frontliners (includes health insurance coverage for all COVID-19 patients; special risk allowance, hazard pay, and personal protective equipment [PPE] for frontline health workers; increased testing capacity).</li> <li>• Pillar 3: Fiscal and monetary actions to finance emergency initiatives and keep the economy afloat (PHP610 billion/US\$12 billion), which includes standby financing for Pillar IV and PHP233 billion/US\$4.58 billion liquidity infusion into the economy.</li> <li>• Pillar 4: Economic recovery plan. Key elements of the strategy released to date include: <ul style="list-style-type: none"> <li>- Social Amelioration Programme (SAP)- provides an emergency subsidy to around 18 million low-income COVID-19 impacted households.</li> <li>- Tulong Panghanapbuhay sa Ating Disadvantaged/ Displaced Workers (TUPAD) – a community-based package of assistance that provides emergency employment for displaced workers, underemployed and seasonal workers.</li> <li>- COVID-19 Adjustment Measures Programme (CAMP) – a safety net programme providing financial and employment assistance for workers.</li> <li>- Abot Kamay ang Pagtulong (AKAP) – assistance intended for displaced land- and sea-based overseas Filipino workers.</li> <li>- A Small Business Wage Subsidy (SBWS) Programme – monthly cash assistance for two months to qualified employees of small businesses.</li> <li>- Pondo Para sa Pagbabago Enterprise Rehabilitation Financing (P3-ERF) – a facility established for MSMEs to help them stabilise and recover from pandemic losses.</li> <li>- Executive Order No. 114 by the President or the ‘Back to the province, new hope programme’, which aims to encourage migrants residing in Metro Manila to relocate back to their provinces. Aims to spur economic development in the countryside, as well as decongesting Metro Manila and promoting resilience against disasters.</li> </ul> </li> </ul>
<b>Finland</b> <sup>14</sup>	<ul style="list-style-type: none"> <li>• Finland's approximately €15 billion package to support businesses and individuals includes: <ul style="list-style-type: none"> <li>- €10 billion available to businesses, primarily in the form of Finnvera (state-owned financing institution) guarantees.</li> <li>- Business Finland's grant authorisations will be increased by €800 million.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>- ELY Centres (Centres for Economic Development, Transport and the Environment) grant authorisations for business development projects will be increased by €400 million.</li> <li>- TESI (governmental agency providing private equity type of financing for Finnish SMEs) will provide €150 million financing for midcap companies.</li> <li>• Relief on business tax payments via extensions of payment deadlines for VAT and payroll tax, reduced interest on late payments and avoidance of late payment fees.</li> <li>• Relief on pension obligations.</li> <li>• €1.3 billion package for climate-friendly recovery and sustainable transport, including a number of transport infrastructure projects that can be started immediately. €43 million will be allocated to municipalities for infrastructure projects promoting walking and cycling (€18 million in 2020, €25 million in 2021). €100 million for purchasing and developing public passenger transport services.</li> </ul>
<b>Ireland</b> <sup>115</sup>	<p>Ireland's €13.3 billion stimulus package includes protection for workers and businesses:</p> <ul style="list-style-type: none"> <li>• The wage subsidy scheme is a 12-week programme (from 26 March 2020), which refunds employers up to 70% of employees' wages, up to €410 per qualifying employee.</li> <li>• €10,000 restart grant for micro and small businesses based on a rates/waiver rebate from 2019.</li> <li>• Three month commercial rates waiver for impacted businesses.</li> <li>• €2 billion credit guarantee scheme to support lending to SMEs.</li> <li>• €2 billion Pandemic Stabilisation and Recovery Fund within the Ireland Strategic Investment Fund (ISIF), which will make capital available to medium and large enterprises.</li> <li>• 'Warehousing' of tax liabilities for a period of 12 months after recommencement of trading.</li> </ul>
<b>Indonesia</b> <sup>116</sup>	<p>Indonesia's IDR 695.2 trillion (4.2% of GDP) or equivalent USD 48.9 billion package includes:</p> <ul style="list-style-type: none"> <li>• Support to the health care sector to boost testing and treatment capability for COVID-19 cases (Rp.87.55 trillion or USD 6.2 billion).</li> <li>• Increased benefits and broader coverage of existing social assistance schemes to low-income households such as food aid, conditional cash transfers, and electricity discount (Rp203.9 trillion or USD 14.3 billion).</li> <li>• Business Incentives (Rp 120.6 trillion or USD 8.5 billion) including government-bourne income tax, Income tax exemption on</li> </ul>



	<p>imports, tax deduction, VAT return, corporate IT rate reduction and other stimulus.</p> <ul style="list-style-type: none"> <li>• SMEs (Rp123.46 trillion or USD 8.7 billion), including interests subsidy, fund placement, guarantee return, working capital guarantee, government borne final income tax, and investment financing to cooperatives.</li> <li>• Corporate Financing (IDR 53.57 trillion or USD 3.8 billion), including labour intensive-fund placement, capital injection, and working capital bail-out.</li> <li>• Sectoral and Regional Government (IDR106.11 trillion or USD 7.5 billion), including line ministries labour intensive program, housing incentives, tourism, regional incentive fund (DID), physical special allocation fund reserve, regional loan facility, and expansion reserve.</li> </ul>
<p><b>United Arab Emirates (UAE)</b><sup>117</sup></p>	<p>The UAE has announced a two-phase plan to shape the post-COVID-19 economy:</p> <ol style="list-style-type: none"> <li>1) A short-term phase, which includes the gradual opening of the economy and businesses, supported by stimulus totalling AED 282.5 billion (US\$79 billion). This phase will focus on the sectors most affected by the crisis, support SMEs, and link funds to beneficiaries through effective schemes and plans. <ul style="list-style-type: none"> <li>- AED 16 (US\$4.4 billion) to support the private sector by reducing various government fees and accelerating existing infrastructure projects</li> <li>- AED 1.5 billion (US\$0.4 billion) in measures by the government of Dubai to reduce government fees, provide additional water and electricity subsidies, and simplify business procedures.</li> <li>- AED 9 billion (US\$2.5 billion) announced by the government of Abu Dhabi as part of the ongoing 'Ghadan-21' fiscal stimulus programme. Provides water and electricity subsidies, as well as credit guarantees and liquidity support to SMEs.</li> </ul> </li> <li>2) Long-term stimulus package to accelerate recovery, advance growth and transform challenges into opportunities. Will encourage investment in sectors with high potential: <ul style="list-style-type: none"> <li>- The digital economy – 5G networks, smart cities, blockchain.</li> <li>- The green economy – support for renewable energy, electric cars, circular economy.</li> <li>- Food security – adopting advances in AI, biotechnology and genetic engineering.</li> </ul> </li> </ol>

## Endnotes and references

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<sup>1</sup> The COVID-19 crisis has triggered the largest global decline in GDP since the great depression. Three recent forecasts, from the [OECD](#), [IMF](#) and [World Bank](#), all show a worsening of economic impacts in 2020 and a slower recovery in 2021. The timing of the recovery itself is highly uncertain, both because of the persistence of the medical emergency and uncertainty around the effectiveness of medical responses, e.g. development of a vaccine. There are also strong differential impacts between countries and regions. Europe has experienced some of the largest declines in GDP and recovery is expected in 2021. In emerging markets and developing countries, China is the only country expected to maintain growth throughout the crisis. Asia is, however, at the time of writing, affected much less than Europe. Latin America is experiencing some of the largest declines in GDP in 2020, in part due to economic weakness before the crisis. Africa sees the smallest GDP impacts and a stronger recovery is expected. Nevertheless, revenue impacts from the slowdown are substantial for all regions. And access to finance is going to be challenging for many emerging markets and developing countries.

<sup>2</sup> LSE Business Review: [Covid and climate – building a strong and sustainable recovery](#)  
Grantham Research Institute: [From rescue to recovery, to transformation and growth: building a better world after COVID-19](#)

E3G: [Briefing Summary- Recovering Better: A Green, Equitable and Resilient Recovery from Coronavirus](#)

<sup>3</sup> Recent research, assuming a scenario of unmanaged climate change, finds mean temperature rise experienced by human populations by 2070 could be as high as 7.5°C compared to the pre-industrial, about 2.3 times the mean global temperature rise by this time. Up to 3 billion (range of 1-3 billion) people (roughly 30% of the projected global population) would have to move. <https://www.pnas.org/content/early/2020/04/28/1910114117>

<sup>4</sup> Previous studies have identified key actions on investments, policies and finance that are central to building back better and avoiding the dangerous models of the past. These include the New Climate Economy *Better Growth*, *Better Climate* reports and work by the OECD, IMF, World Bank, London School of Economics, and the World Resources Institute – all institutional partners of the Coalition. They have outlined the actions but also the opportunities and net benefits associated with low-carbon, resource-efficient growth. See, for example: <http://newclimateeconomy.net/publications> and OECD: [Investing in Climate, Investing in Growth](#)

All the institutional partners mentioned above and others are working on different facets of the recovery agenda that this paper has drawn on, and that can help inform the deliberations and further work of the Coalition. See for example: Joaquim Levy, Carter Brandon and Rogerio Studart *Designing the COVID-19 Recovery for a Safer and More Resilient World*, May 14, 2020.

<sup>5</sup> IPSOS: [How do Great Britain and the world view climate change and Covid-19?](#)

<sup>6</sup> NDCs can provide a ready-made roadmap. Many countries with NDC Partnership Plans have already identified key policy levers, sustainable infrastructure projects and investment opportunities that ministries of finance can build off and also use to identify potential shovel-ready projects.

<sup>7</sup> See Bundesregierung: [A French German Initiative for the European Recovery from the Coronavirus Crisis](#)

<sup>8</sup> The Coalition of Finance Ministers for Climate Action (2020). Long Term Strategies for Climate Change: A Review of Country Cases. <https://www.financeministersforclimate.org>

<sup>9</sup> EU: [European Green Deal](#)

<sup>10</sup> Victor, D.G. (2020). [Building back better: Why Europe must lead a global green recovery](#), Brookings.

<sup>11</sup> Governments can also address the significant and long-term maintenance backlog in high and low-income countries. Maintenance priorities will already have been identified. Many

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maintenance activities can be undertaken by small-scale contractors and they tend to be labour-intensive.

<sup>12</sup> Garrett-Peltier, H. (2017). Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model. <https://ideas.repec.org/a/eee/ecmode/v61y2017icp439-447.html>.

<sup>13</sup> See World Economic Forum: [Energy efficiency and the fight against climate change Ramm \(2019\)](#), projects 4 million new jobs in the solar industry in South Asia by the end of the current decade.

<sup>14</sup> The energy efficiency sector is the fastest growing energy sector in the US. See IEA: [Multiple Benefits of Energy Efficiency](#)

<sup>15</sup> OECD (2015), Overcoming Barriers to International Investment in Clean Energy, Green Finance and Investment, Éditions OECD, Paris, <https://doi.org/10.1787/9789264227064-en>.

<sup>16</sup> Edwards, P.E.T. et al. (2013). [Investing in nature: Restoring coastal habitat blue infrastructure and green job creation](#)

<sup>17</sup> Adapt Now, Global Commission on Adaptation (2019).

<sup>18</sup> In the aftermath of the 2008 crisis, South Korea spent \$36 billion dollars in green investments, about 80% of its total stimulus spending. Low-carbon projects included railroads and mass transit (\$7bn), energy efficient buildings (\$6bn), water and wastewater management (\$14bn), and fuel-efficient vehicles and renewable energy (\$4bn). By the third quarter of 2009, South Korea had a growth rate of 2.8%, one of the highest in the OECD (see Robins, Clover, and Singh, 2009. [A Climate for Recovery](#) HSBC. Evidence suggests these green investments launched a longer-term commitment to green growth that has reduced air and water pollution, improved solid waste management, and reduced congestion in Seoul. <https://www.oecd.org/korea/greengrowthinactionkorea.htm>

<sup>19</sup> The Four Rivers Restoration Project reduced the number of large floods, improved water quality and increased water availability, but it also induced algae blooms, reduced the population of certain aquatic species, and adversely affected the habitats of several other species. Agrawala, S., D. Dussaux and N. Monti (2020), "What policies for greening the crisis response and economic recovery?: Lessons learned from past green stimulus measures and implications for the COVID-19 crisis", OECD Environment Working Papers, No. 164, OECD Publishing, Paris, <https://doi.org/10.1787/c50f186f-en>.

<sup>20</sup> Data to facilitate geographic and distributional targeting are now available at the local level in some countries, e.g. see the Turn2US [Needs Analysis Project](#) in the UK which identifies the groups and regions most impacted by COVID-19 <https://public.tableau.com/profile/npc8488#!/vizhome/NPCDashboard/UserGuide>

<sup>21</sup> Task Force on Climate-related Financial Disclosures (June 2019) [TCFD: 2019 Status Report](#).

<sup>22</sup> Carbon Tracker: [Decline and Fall: The Size & Vulnerability of the Fossil Fuel System](#)

<sup>23</sup> Bhattacharya, A., Contreras Casado, C., Jeong, M., et al. (2019). [Attributes and Framework for Sustainable Infrastructure. Consultation Report](#). Global Economy and Development at Brookings, IDB Group.

OECD (2018), Developing Robust Project Pipelines for Low-Carbon Infrastructure, Green Finance and Investment, OECD Publishing, Paris, <https://doi.org/10.1787/9789264307827-en>

<sup>24</sup> As highlighted by empirical OECD analysis, feed-in tariffs and public RD&D spending have stimulated patenting activity in renewable power technologies across OECD and G20 countries during this period. In addition, renewables investment from 2000 (and especially after 2008) until 2014 was primarily driven by targeted investment incentives like feed-in tariffs, renewable certificates and public tenders. Ang, G., D. Röttgers and P. Burli (2017). The empirics of enabling investment and innovation in renewable energy, OECD Environment Working Papers, No. 123, OECD Publishing, Paris, <https://doi.org/10.1787/67d221b8-en>

<sup>25</sup> See for example, <https://solarimpulse.com/>

<sup>26</sup> Agrawala, S, et al., 2020, What policies for greening the crisis response and economic recovery? Lessons learned from past green stimulus measures and implications for the COVID-19 crisis, Working Paper No. 164. <https://oe.cd/il/31g>

<sup>27</sup> See Gates, B (2020). [TED Connects](#). How we must respond to the coronavirus pandemic

<sup>28</sup> Agrawala, S., et al. (2020).

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- 29 IEA (April 2020) [What the 2008 financial crisis can teach us about designing stimulus packages today](#)
- 30 OECD (2019) [Accelerating Climate Action: Refocusing Policies through a Well-being Lens](#), OECD Publishing, Paris.
- 31 The Coalition of Finance Ministers for Climate Action (2020). Ministries of Finance and Nationally Determined Contributions: Stepping Up for Climate. <https://www.financeministersforclimate.org>
- 32 Agrawala, S. et al. (2020).
- 33 The Green Stimulus Index examines 17 major economies and the European Commission (July 2020 update) to assess the green vs. brown orientation of their stimulus funding. The method is explained in detail and updated regularly at: [Green Stimulus Index](#)
- 34 See IMF: [Policy responses to COVID-19](#)
- 35 See Axios: [Tracking the carbon emissions from the world's coronavirus stimulus](#)
- 36 Source: Vivid Economics: [Greenness of Stimulus Index](#)
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Energy Transitions Commission: [7 priorities to help the global economy recover](#)
- 41 See for example the IRENA 2019 [Global energy transformation: The Remap transition pathway](#)
- 42 Energy Transitions Commission: [7 priorities to help the global economy recover](#)
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- 50 Brookings Institution: [The carbon tax opportunity](#).
- 51 Hepburn, C., et al. (2020) op. cit.
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See also: Auerbach, A.J., and Y., Gorodnichenko (2012). Measuring the Output Responses to Fiscal Policy, American Economic Journal: Economic Policy 4(2), 1–27.  
Auerbach, A.J. and Y., Gorodnichenko (2013). Fiscal Multipliers in Recession and Expansion. In Fiscal Policy after the Financial Crisis, ed. Alberto Alesina and Francesco Giavazzi. University of Chicago Press.
- Cohen-Setton J., Gornostay, E. and C. Ladreit (2019). Aggregate Effects of Budget Stimulus: Evidence from the Large Fiscal Expansions <sup>60</sup>Database, Peterson Institute for International Economics.

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By contrast, Ramey and Zubairy (2018) claim that the evidence that fiscal multipliers are larger in recessions is fairly weak, and not robust.

<sup>55</sup> Blanchard, O. and L. Daniel (2013). [Growth Forecast Errors and Fiscal Multipliers](#), IMF WP1301; Christiano, L., Eichenbaum, M. and S. Rebelo (2009). [When is the Government Spending Multiplier Large?](#), London School of Economics.

<sup>56</sup> LSE British Politics and Policy Blog: [The economic response to COVID-19 is not austerity: Four pillars for strong public finances](#)

<sup>57</sup> Ibid.

<sup>58</sup> Although Africa, excluding South Africa, is not yet hit as hard by the virus as other regions, the economic impact is proving to be just as severe and the other challenges it is facing are in many ways just as acute.

<sup>59</sup> See NDC Partnership: [InsuResilience Global Partnership](#).

<sup>60</sup> Ocampo, J.A. (2020). [Financing and debt management for emerging market economies. Future Development](#), Brookings.

<sup>61</sup> This box is drawn from an LSE Grantham Research Institute commentary, [How could sustainable finance help avoid an emerging market sovereign debt crunch?](#)

<sup>62</sup> Steele, P. (2020). [Tackling the debt, climate and nature emergencies together](#), IIED.

<sup>63</sup> Strand, J. and M., Toman (2010). Green Stimulus, Economic Recovery, and Long-Term Sustainable Development, The World Bank, Policy Research Working Paper 5163.

<sup>64</sup> Fiscal multipliers measure the impact of discretionary fiscal policy on output. They are usually defined as the ratio of a change in output to an exogenous change in the fiscal deficit with respect to their respective baselines.

<sup>65</sup> Barrell, R., Holland, D. and I. Hurst (2012). [Fiscal Consolidation: Part 2. Fiscal Multipliers and Fiscal Consolidations](#), OECD Economics Department Working Papers, No. 933, OECD Publishing;

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<sup>68</sup> Allan, J., Donovan, C., Ekins, P., Gambhir, A., Hepburn, C., Reay, D., Robins, N., Shuckburgh, E. and D., Zenghelis (2020). A net-zero emissions economic recovery from COVID-19, Smith School Working Paper 20-02.

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<sup>69</sup> Hepburn, C., et al. (2020). Op. cit.

<sup>70</sup> IEA (2020). [Sustainable Recovery](#). World Energy Outlook Special Report. IEA/OECD.

<sup>71</sup> Van der Meijden, G. and S., Smulders (2017). [Carbon Lock-In: The Role of Expectations](#), *International Economic Review*, 58(4), 1371-1415.

<sup>72</sup> Acemoglu, D. et al (2012). [The Environment and Directed Technical Change](#). *American Economic Review*, 102, No. 1, 131-166.

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<sup>73</sup> Allan, J., et al. (2020).

<sup>74</sup> See OECD: [OECD-IEA Analysis of Fossil Fuels Support](#)

<sup>75</sup> About 60 carbon pricing schemes have been implemented at regional, national and sub-national levels (WBG, 2019). Prices in 2019 were around \$5 to \$25/tCO<sub>2</sub> in most schemes, but will likely rise over time, and prices are substantially higher in some cases (e.g., Scandinavian countries).

<sup>76</sup> Country commitments are under revision ahead of COP26 in Glasgow, now postponed to 2021.

<sup>77</sup> Projected (real) oil prices are \$50/barrel in 2030 in Black and Parry (2020), compared with \$66 in 2019 and a previous forecast for 2030 of \$74.

<sup>78</sup> All monetary values are expressed in constant 2018 US dollars.

<sup>79</sup> See IMF (2019) for further discussion. [Fiscal Monitor 2019: How to Mitigate Climate Change](#). In addition, given the importance of consistency of prices across jurisdictions, evidence from recent work gives us a sense what the levels of pricing should be to meet climate goals. It will be important to consider consistency in terms of a commitment to a price range and in terms of carbon border adjustment taxes. See the [Report of the High-Level Commission on Carbon Prices](#)

<sup>80</sup> Full energy price reform would yield revenues, on average, twice as large as those from a \$50 carbon tax. See Black and Parry (2020). This paper also presents results from implementing a minimum carbon price of €30/tCO<sub>2</sub>, which would result in a +1.1 per cent increase of GDP or revenue across OECD and G20 countries – except USA – not accounting for behavioural responses.

<sup>81</sup> Feebates apply, usually in a revenue-neutral way, a sliding scale of fees on products (e.g. vehicles) or activities (e.g. power generation) with above average emission rates and a sliding scale of rebates for products or activities with below average emission rates (see IMF 2019, Appendix III).

<sup>82</sup> Black and Parry (2020).

<sup>83</sup> Marten, M. and K. van Dender (2019). The use of revenues from carbon pricing, OECD Taxation Working Papers, No. 43, OECD Publishing, Paris, <https://doi.org/10.1787/3cb265e4-en>

<sup>84</sup> More holistically, climate considerations need to be integrated into broader decisions such as city design, provision of mass transit, and land use.

<sup>85</sup> Burke, J., Fankhauser, S. and A. Bowen (2020). [Pricing carbon during the economic recovery from the COVID-19 pandemic](#), Policy Brief, Grantham Research Institute on Climate Change and the Environment, LSE.

<sup>86</sup> Carbon prices of around \$65/tCO<sub>2</sub> for could be introduced without raising projected 2021 retail road fuel prices above 2019 price levels.

<sup>87</sup> Rydge, J. (2015). [Implementing Effective Carbon Pricing](#). Working Paper, New Climate Economy, Global Commission on the Economy and Climate.

<sup>88</sup> See OECD: [Fossil Fuel Support and Other Analysis](#)

<sup>89</sup> See OECD: [Green Public Procurement](#)

<sup>90</sup> World of Aviation: [Air France bailout tied to green conditions](#)

<sup>91</sup> The study defined the archetypes following a wide cataloguing effort of over 700 significant G20 fiscal stimulus policies proposed or implemented over the period 2008–20.

<sup>92</sup> Hepburn, C., et al. (2020). Op. cit.

<sup>93</sup> *ibid.*

<sup>94</sup> Report of the G20 Eminent Persons Group on Global Financial Governance, [Making the Global Financial System Work for All](#). October 2018.

<sup>95</sup> European Union: [Financing the green transition: The European Green Deal Investment Plan and Just Transition Mechanism](#)

<sup>96</sup> *Ibid.*

<sup>97</sup> Climate Policy Initiative (2018). [Global Climate Finance: An Updated View 2018](#).

<sup>98</sup> Röttgers, D., Tandon, A. and C., Kaminker (2018), [OECD Progress Update on Approaches to Mobilising Institutional Investment for Sustainable Infrastructure](#), OECD Environment Working Papers, No. 138, OECD Publishing, Paris.

<sup>99</sup> OECD (2018). [Developing Robust Project Pipelines for Low-Carbon Infrastructure. Policy Highlights](#)

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<sup>100</sup> OECD DAC (2018). [Blended Finance Principles for Unlocking Commercial Finance for the Sustainable Development Goals](#)

<sup>101</sup> Röttgers, D., et al. (2018). Op. cit.

<sup>102</sup> [International Network of Financial Centres for Sustainability's \(FC4S\)](https://www.fc4s.org/) <https://www.fc4s.org/>

<sup>103</sup> Centre for Climate Change Economics and Policy and Grantham Research Institute on Climate Change and the Environment (May 2017). [The climate impact of quantitative easing](#)

<sup>104</sup> Visual Capitalist: [How Global Central Banks are Responding to COVID-19, in One Chart](#) and INSPIRE (2020) [A Toolbox for Sustainable Crisis Response Measures for Central Banks and Supervisors](#)

World Resources Institute (May 2020) [Quantitative Easing for Economic Recovery Must Consider Climate Change](#)

<sup>105</sup> Most recently in his remarks at the Petersberg Climate Dialogue, April 29, 2020. To inform climate risk management of financial regulators and industry practitioners (including investors and insurers), the OECD is launching a series of workshops in 2020-22 on Climate Science, Policy, Regulation and Practice.

<sup>106</sup> See the Large Employer Emergency Financing Facility (LEEFF) [Factsheet](#).

<sup>107</sup> Centre for Climate Change Economics and Policy and Grantham Research Institute on Climate Change and the Environment (July 2016), [The importance of looking forward to manage risks: submission to the Task Force on Climate-Related Financial Disclosures](#)

<sup>108</sup> IMF blog: [Assessing climate change risk by stress testing for financial resilience](#)

<sup>109</sup> Responsible Investor: [Post-Covid recovery packages must quicken the pace to net-zero carbon emissions](#)

<sup>110</sup> This information was provided by the German Ministry of Finance.

<sup>111</sup> RNZ: [Budget 2020: What you need to know](#)

<sup>112</sup> This information was provided by the Greek Ministry of Finance.

<sup>113</sup> This information was provided by the Philippines Ministry of Finance.

<sup>114</sup> EY: [Covid-19 — Overview of financial assistance and relief solutions in Finland](#)

Finnish Government: [Supplementary budget includes major climate-friendly recovery package: Public transport support and infrastructure projects across the country](#)

<sup>115</sup> IMF: [Policy responses to COVID-19](#)

Gov.ie: [Government agrees next phase of Ireland's COVID-19 response](#)

<sup>116</sup> This information was provided by the Indonesian Ministry of Finance

<sup>117</sup> Gulf News: [UAE to build post COVID-19 economy on digital, announces two-phase recovery plan](#) IMF: [Policy responses to COVID-19](#)