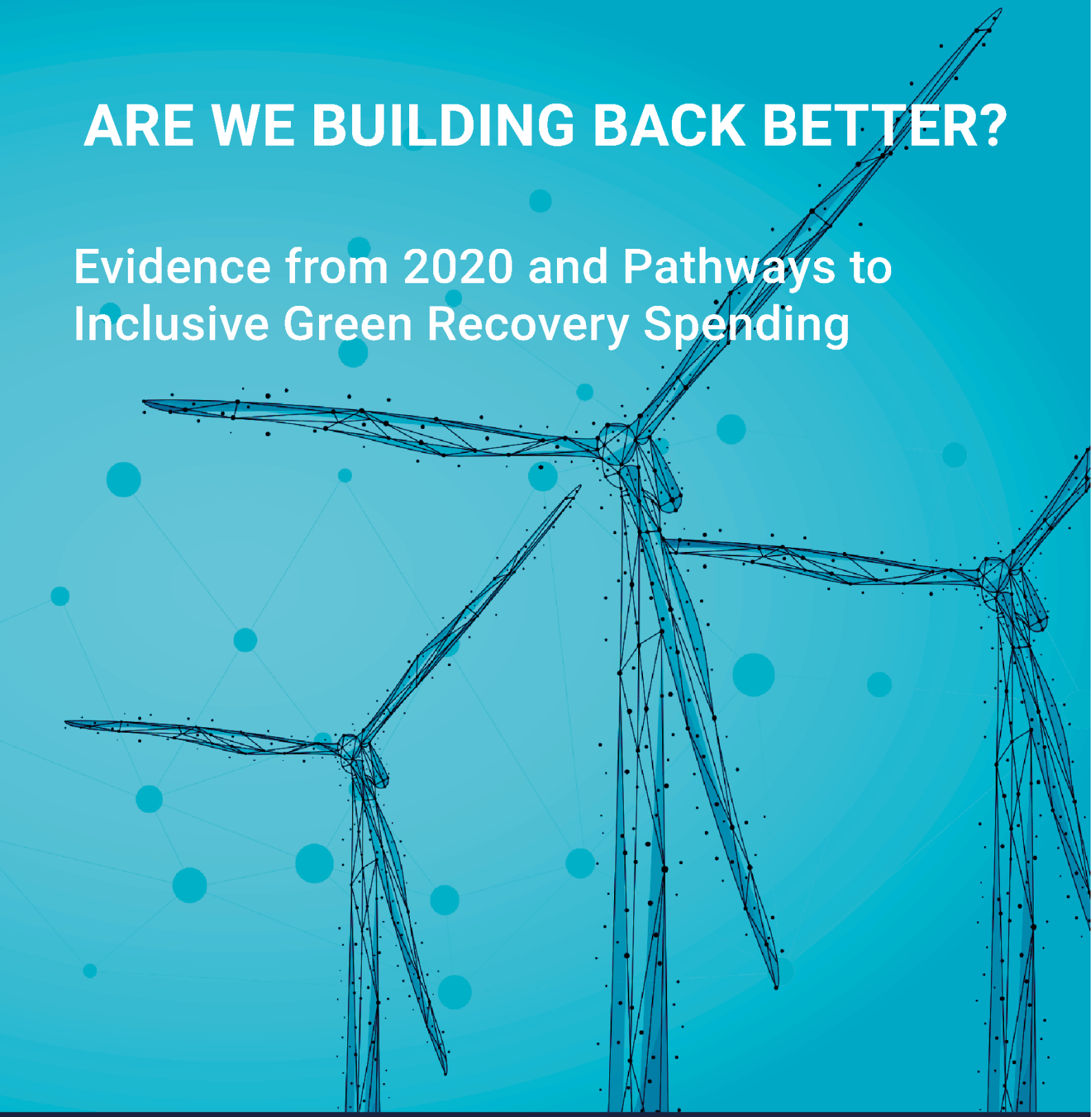
# ARE WE BUILDING BACK BETTER?

## Evidence from 2020 and Pathways to Inclusive Green Recovery Spending



## SUMMARY FOR POLICYMAKERS

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# ARE WE BUILDING BACK BETTER?

## Evidence from 2020 and Pathways to Inclusive Green Recovery Spending

### Summary for Policymakers

One year from the onset of the pandemic, the social and economic costs of COVID-19 continue to mount and reverberate across the globe. This crisis – "unlike any other" to use the words of IMF Managing Director Kristalina Georgieva – precipitated enormous fiscal spending from governments around the world in 2020. Despite considerable evidence suggesting that environmentally restorative fiscal policies may be among the most effective tools for economic recovery, very little green spending of this kind was announced in 2020.

**This paper records USD14.6tn in announced spending across the world's largest fifty countries in 2020, of which USD1.9tn (13.0%) was directed to long-term 'recovery-type' measures and of that, USD341bn (18.0%) to green recovery initiatives.**

Considering total spending, only USD368bn (2.5%) was announced for green initiatives. Green investment has largely been driven by a small group of high-income nations, who also happen to have made the largest recovery announcements to date. These figures exclude European Commission funds that have not yet been announced in member state budgets.

**With growing climate instability, rising inequality, and worsening global poverty (World Bank, 2021), it is crucial that governments build back better through a green and inclusive recovery.**

In this, it will be critical for advanced economies (AEs) and multilateral agencies to generously partner with emerging market and developing economies (EMDEs) in meeting their own green recovery aspirations. This report explores the impacts of COVID-19 and the "great lockdown" on lives and livelihoods in 2020 and illustrates five green policy areas that could optimise economic recovery and aid in aligning countries with their global climate and sustainability commitments.

# 1. THE 2020 STORY OF GLOBAL COVID SPENDING

## The global economy contracted by approximately 3.5% in 2020 (IMF, 2021), easily the largest single year drop since World War II.

The lockdown measures to contain the virus have suppressed economic activity and disproportionately burdened low-income and otherwise marginalised communities through job losses, wage cuts, and disease burden (Aspachs et al., 2020; Rollston & Galea, 2020). In part driven by unequal capacities to spend, advanced economies have devoted significantly more resources in both short-term rescue measures and long-term recovery measures (figure 1) compared to EMDEs. The debt constraints of EMDEs have led to growing calls for concessional finance from international partners (UN, 2020).

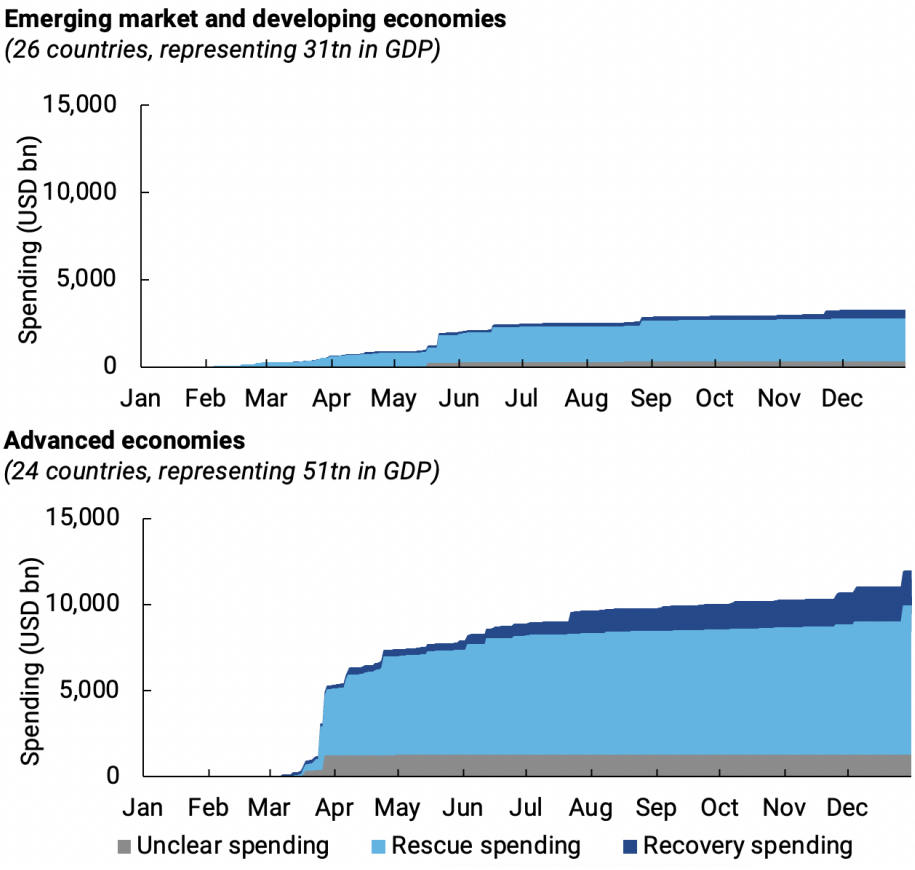


*Figure 1. Global announced COVID-19 spending through 2020. Advanced, emerging market, and developing economies defined by IMF 2020 and limited to those covered by the Observatory. Source: Global Recovery Observatory.*

Through the end of 2020, the world's fifty largest economies announced a total of USD14.6tn in COVID-related fiscal measures, of which USD11.1tn was devoted to immediate rescue efforts, USD1.9tn to long-term recovery measures, and USD1.6tn was unclear spending.

Many countries with lower development indices have spent less on both rescue and recovery type measures, potentially putting at risk poverty rates, health outcomes, and the trajectory of sustainable development in those nations, re-affirming the need for foreign assistance and/or debt relief.

Excluding European Commission funds that have not yet been announced in member state budgets, only 2.5% of all spending and 18.0% of recovery spending is likely to reduce greenhouse gas (GHG) emissions. Recovery spending missed many green investment opportunities in 2020 (figures 2 and 3), with notable exceptions including Denmark, Finland, France, Germany and Poland, as well as leading packages from Spain and South Korea. High interest rates and existing debt constraints have hampered the recovery efforts of many emerging markets and developing economies, leaving the vast majority of green recovery spending to a small group of advanced economies with relatively low borrowing costs (figure 4).

Though the proportion of green spending was minimal in 2020, sizeable investments were nonetheless announced across a broad range of green policy types, albeit with significantly less diversity in green policy types in EMDEs.

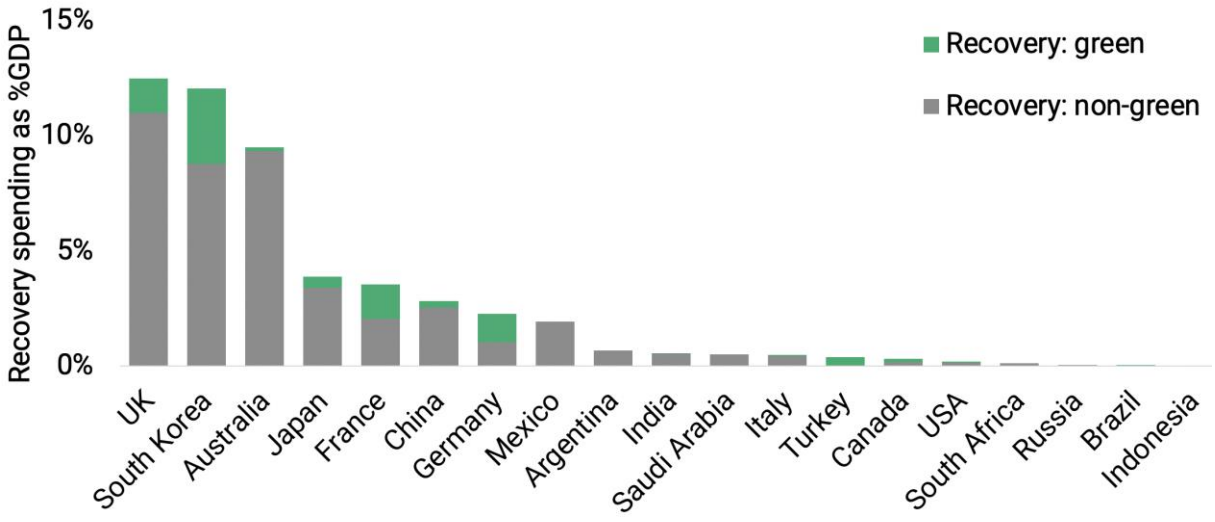


*Figure 2. Green, neutral, and dirty recovery spending announced by the G20 countries, as a percentage of 2019 GDP. Source: Global Recovery Observatory.*

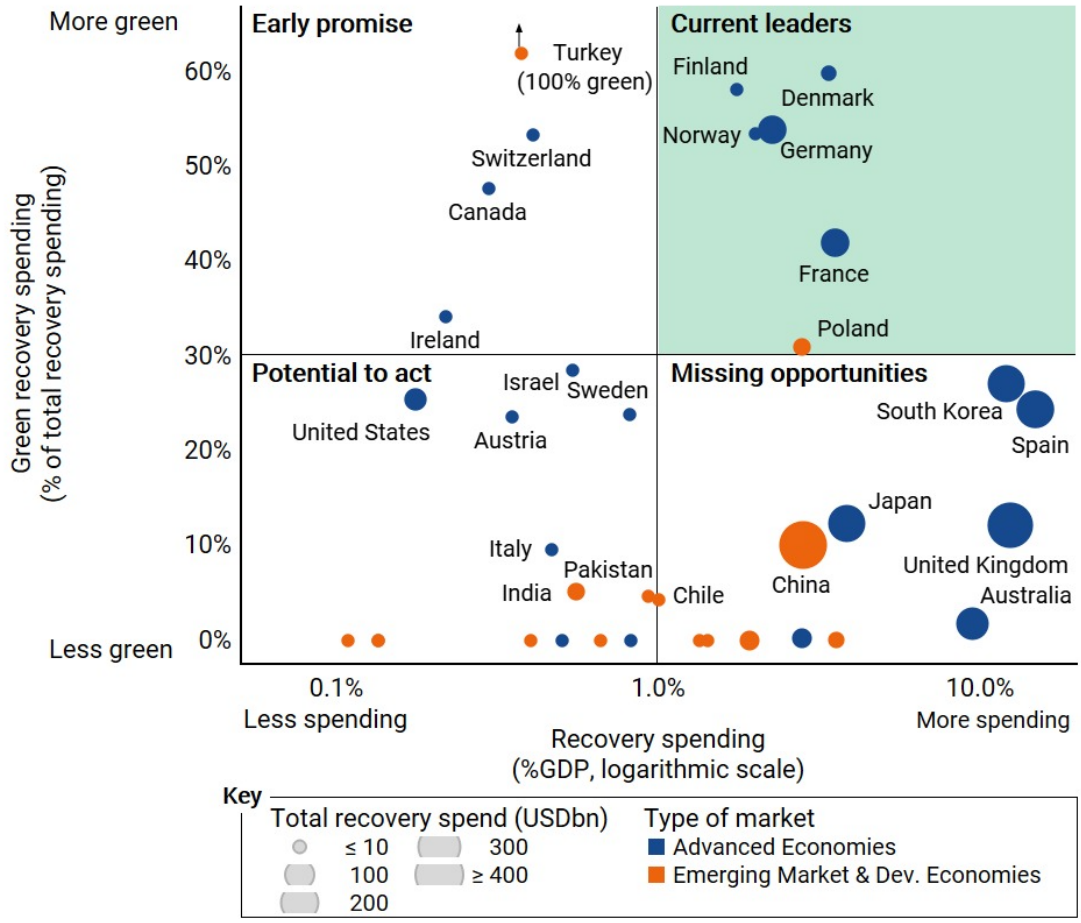


*Figure 3. Green recovery spending as a percentage of total recovery spending, versus recovery spending as %GDP. Colour represents market type. Turkey's recovery spending (0.43% of GDP; 100% green) is a commendable outlier, not accurately represented on the graph due to visual limitations. Many countries are clustered at 0% green recovery spending, from left to right on the figure: South Africa, Thailand, Malaysia, Egypt, Saudi Arabia, Argentina, Portugal, Nigeria, Peru, Iraq, Mexico, Mexico, Argentina, the Netherlands, and the Philippines. Countries with less than 0.1% recovery spending as %GDP do not feature and are listed in Appendix A. Sources: Global Recovery Observatory; interest rate data from OECD (2020c) and CEIC (2021).*

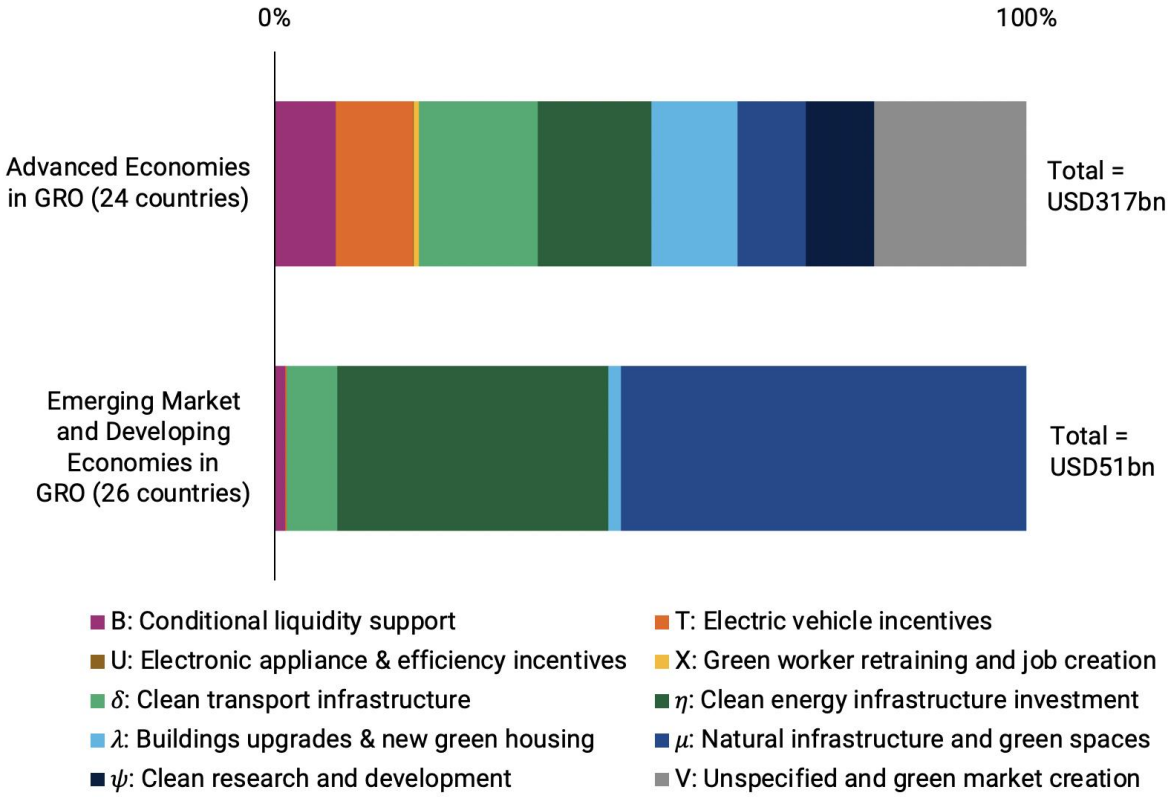


*Figure 4. Distribution of green spending in 2020 across AEs and EMDEs.*

# 2. GREEN ENERGY

## Investments in green energy can deliver high economic multipliers, have high potential to crowd-in private investment, and are an important step on the road to economy-wide decarbonisation.

In addition to new renewable generation capacity, investments in transmission, distribution (including smart grids), and energy storage solutions may also yield strong benefits. Employment opportunities for these investments can be strong compared to traditional energy initiatives, particularly in the short-term (Dvořák et al., 2017; Lehr et al., 2012). In the long-term, job opportunities continue with high-quality, long term jobs required after construction for operations and management (Wei et al., 2010). The availability of cheap energy can also induce new growth across other related sectors, for instance in electric transport, green material production, and alternative proteins. Green energy investments can draw significant co-benefits if they replace fossil alternatives by reducing net air pollution and its health-related consequences (Lott et al., 2017; Shindell & Smith, 2019), as well as improving energy security by increasing

resilience to natural disasters (IEA, 2007). Opportunities for such investment differ significantly by country; for instance, nations with strong existing private markets for renewable generation may direct stimulus funds towards storage or transmission infrastructure to support and expand the pipeline of private investment.

## A total of USD66.1bn was announced in green energy spending as part of COVID-19 recovery packages in 2020.

Large portions of this spending were devoted to new renewable generation and hydrogen power, with some additional spending announced in transmission infrastructure. Little spending was observed in biofuels, or battery and storage infrastructure. Further investment in renewable generation may be particularly beneficial for EMDEs with growing energy demand. There are also significant gains to be made by investing in green hydrogen, particularly for nations with high existing renewable generation.

In these circumstances, green hydrogen can act as an energy store, energy vector, and input in hard-to-decarbonise processes like shipping and steel making.

| Country | Policy | Key Features |
|---|---|---|
| **Spain** | España Puede green energy investment | · Direct investment in renewable electricity generation<br>· Transmission, distribution, storage, and green hydrogen<br>· Jobs targeted towards individuals in industries affected by decarbonisation |
| **Germany** | National hydrogen strategy | · Hydrogen refuelling infrastructure for heavy transport<br>· Industrial sector hydrogen<br>· Demonstration projects<br>· Investments in wind and other renewables<br>· Supports for international hydrogen trade partnerships |
| **South Korea** | Low carbon energy investment | · Renewable generation investments (wind, solar, hydrogen, and potentially others)<br>· Investment in smart-grids |

*Table 1: Examples of green energy COVID-19 recovery expenditure.*

# 3. GREEN TRANSPORT

Compared to traditional alternatives, green transportation investments can create many jobs quickly, while also creating long-term jobs in asset operations and management. These initiatives are also expected to deliver high economic multipliers (Unsworth et al., 2020).

Transportation is a major component of current GHG emissions (IEA, 2020b); swift decarbonisation in this sector is crucial for meeting climate targets (Dominković, 2018). Traditional transportation is also responsible for a high volume of air pollution, particularly in congested cities (EPA, 2015), hence investing in the shift away from internal combustion engine (ICE) vehicles has the potential to improve pollution-related health outcomes (Buekers et al., 2014). These investments can take many forms, with the most common in 2020 being subsidies and transfers for electric vehicles (EVs) and investment in charging infrastructure.

Further investment in green public transport or in walking and cycling infrastructure will likely also increase transport availability for low-income communities, leading to productivity gains and economic uplift (Hernandez et al., 2020).

A total of USD86.1bn was announced in green transport spending as part of COVID-19 recovery packages in 2020.

The United Kingdom's (UK) public transport investments were a significant driver of spending in this category. Despite their economic strengths, walking and cycling infrastructure have not been a popular stimulus choice. Continued investment in green transport solutions is essential for densely populated congested cities, where rates of respiratory illness are high (WHO, 2020). Countries with large existing automobile manufacturing sectors may also benefit significantly from national support to transition production towards greener vehicles.

These kinds of transitions could be effectively supported by national targets for green vehicle production and/or use.

| Country | Policy | Key Features |
|---|---|---|
| **Poland** | Electric vehicle incentives (production and consumption) | · Broad range of incentive recipients including local governments, entrepreneurs, and individuals<br>· Public transport, taxis, and school buses<br>· Concerns among experts that rebates may not be high enough, illustrated by relatively low uptake to date |
| **Chile** | Electric public transport investment | · 215 new electric buses<br>· New electroterminal for charging electric buses |
| **United Kingdom** | Ten Point Plan for a Green Industrial Revolution (Transport) | · Accelerated rollout of charging stations in homes, streets, and motorways<br>· Direct support of EV manufacturing<br>· Grants for consumers purchasing low emissions vehicles |

*Table 2: Examples of green transport COVID-19 recovery expenditure*

# 4. GREEN BUILDING UPGRADES AND ENERGY EFFICIENCY

When effectively targeted, green building upgrades and energy efficiency improvements may be among the most effective economic stimulus tools available to policy makers.

They can create local, relatively low-skill jobs quickly and deliver a high economic multiplier (IEA, 2020a; Jacobs, 2012; Roland-Holst, 2008). They can reduce overall emissions from buildings, which make up a large portion of GHG emissions (IEA, 2019). If designed to do so, they may also reduce energy costs for residents, leading to a reduction in fuel poverty (Webber et al., 2015). Careful targeting towards low-income residents is essential for optimising the stimulus benefits of these policies, ensuring that they reach individuals who would not otherwise have made an energy efficiency purchase (Allcott & Greenstone, 2012).

| Country | Policy | Key Features |
|---|---|---|
| **France** | France Relance (efficiency measures) | · Sweeping energy efficiency retrofits for insulation, heating, and ventilation<br>· Measures for households, landlords, condominiums, social housing, and public buildings (these intend to reduce energy costs for renters) |
| **United Kingdom** | Green Homes Grant Scheme | · Energy efficiency upgrades for low-carbon heating, insulation, windows, and doors<br>· 100% of cost covered for low-income households, but does require home ownership and program not fully realised |
| **Denmark** | Green public housing renovations | · Energy efficiency renovations for public housing<br>· Replacing windows and oil burners<br>· Targets lower income community members |

*Table 3: Examples of green COVID-19 building upgrades and energy efficiency recovery expenditure*

## A total of USD35.2bn was announced in green building upgrades and energy efficiency spending as part of COVID-19 recovery packages in 2020.

The vast majority of this was devoted to green retrofitting programs, though there were some smaller investments seen in rooftop solar. These policies tend to be most effective in advanced economies with high established housing stock. The energy efficiency gains are also likely to be largest for nations in extreme climates, with hot summers, cold winters, or both. Many countries have a long history of investment in energy efficiency retrofitting programs; the expansion of successful programs may help to reduce the administrative and time costs associated with policy development.

# 5. NATURAL CAPITAL

Economies globally are reliant on the natural world, and with large portions of natural capital under threat from deforestation or natural disasters, it is now more important than ever that policy makers take decisive action to protect and rebuild it.

Since a high proportion of spending on natural capital projects is often directed to labour and sourcing of natural resources, risks of offshoring government spending to imports are low and the economic multiplier high (Nair & Rutt, 2009).

Jobs from natural capital investments usually have relatively low skill requirements and can provide employment opportunities targeted to demographics that are particularly struggling during the pandemic (Edwards et al., 2013). The list of co-benefits of nature-based investment is extensive. They include increased resilience against future pandemics and natural disasters, air pollution reductions, and strengthened biodiversity (Adams et al., 2004; IPBES, 2019).

A total of USD56.3bn was announced in natural capital spending as part of COVID-19 recovery packages in 2020.

China and the United States of America (USA) made significant investments in public parks and green spaces, and a number of countries made investments in tree planting initiatives. There has been a clear lack of funds devoted to ecological conservation issues, and policy makers may wish to explore this as an option for future stimulus, particularly in regions where ecotourism is an important sector of the economy.

EMDEs are likely to reap large benefits from natural capital investments due to the low skill requirements of labour, however careful policy design is required to ensure that these programs are successful. This includes (particularly in the case of reforestation programs) avoiding monoculture-type policies, assessing potential biodiversity implications, and working with local communities at all stages of policy design and implementation (Xiao et al., 2020)

| Country | Policy | Key Features |
|---|---|---|
| **Pakistan** | Afforestation program | · Large scale afforestation program<br>· Strong employment generator targeting women and vulnerable groups<br>· Commentators have noted concerns over biodiversity considerations, land rights, and fair wages |
| **China** | Pollution prevention measures | · Primarily targets air pollution reduction<br>· Additional measures for prevention of water and soil pollution<br>· Intends to directly reduce negative health impacts by lowering pollution levels |
| **Norway** | Various natural capital measures | · Tree planting grants to support forestry industry<br>· Support for rehabilitation of nature and outdoor life areas<br>· Biodiversity protection measures |

*Table 4: Examples of COVID-19 recovery natural capital expenditure*

# 6. GREEN RESEARCH AND DEVELOPMENT

While research and development (R&D) investment programs differ in characteristics from the other key policy areas, support of these initiatives is crucial for the long-term health of economies and for our ability to address climate change.

Given the depth of the economic impacts induced by the pandemic, it is clear that complete recovery will be a work in progress for years to come, making it very important for some stimulus policies to act over longer timelines. The economic impacts of green R&D are expected to be very large but will not manifest fully for some years after the initial investment (Jaekyung Yang et al., 2011; Piva & Vivarelli, 2017; Wang et al., 2016). The new technologies developed through such programs will be necessary to meet climate commitments, particularly in hard-to-abate sectors such as heavy transport, industry, and agriculture.

A total of USD28.9bn was announced in green research and development spending as part of COVID-19 recovery packages in 2020.

This sum is substantially smaller than the other green spending categories, likely because of the aforementioned long-term time horizon for impacts, meaning that governments that are looking for tangible change on the scale of months may prioritise different policies in the short-term. Most of announced R&D spending has been part of much larger green packages rather than stand-alone policies. Examples of this are clear in France, Germany, and Spain. The majority of spending has been in energy technologies, with little investment so far directed towards agricultural or industrial green R&D. A first-mover advantage may be available to nations who choose to invest in one of these sectors soon.

# 7. CONCLUSIONS

## Are we building back better?

Not yet. Though some promising green recovery policy examples do exist, they have been overwhelmingly implemented by a small group of wealthy countries. However, as vaccines continue to be deployed and the need for urgent rescue-type spending diminishes, the impetus for recovery-type spending will rise. This presents perhaps the greatest chance we have had so far to redirect the course of human greenhouse gas emissions and align spending with the goals of the 2030 Agenda.

Some of the most economically effective stimulus policies are the very same policies that will lead us towards deep decarbonisation and improvements in pollution and nature loss, and help us address the global and domestic inequalities that only grew in 2020.

We direct policy makers to the Global Recovery Observatory for further examples of green stimulus policies that could be relevant for their ongoing recovery decisions.

The choice for policy makers is clear: make use of recovery spending to steer away from the worst impacts of climate change and inequality, or reinforce existing carbon-intensive systems and lock in a future that is economically, socially, and environmentally unsustainable.

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