

# Global Alliance on Circular Economy and Resource Efficiency (GACERE)

FINAL

WORKING PAPER<sup>1</sup>

## Circular Economy and Green Recovery

### Introduction

The present document explores how circular economy approaches can contribute to a green recovery<sup>2</sup> from the COVID-19 pandemic and the economic downturn caused by lockdowns. Governments, world over, reacted to the pandemic with short-term (rescue) and medium to long term (recovery) measures. In this working document, the focus is on medium and long-term green recovery measures.

The pandemic did not change the trajectory of the three interlinked crises of climate change, biodiversity loss and pollution the world is facing. In fact, there is evidence that these crises led to the pandemic in the first place<sup>3</sup>. Addressing these crises during the recovery will also help improve resilience and reduce the likelihood of similar pandemics in the future<sup>4</sup>.

With the International Monetary Fund (IMF) estimating global economic growth of 6 percent in 2021 and 4.4 percent in 2022<sup>5</sup>, there is an enormous opportunity to build back better and greener. By integrating circular economy and resource efficiency approaches in targeted sectors, medium- and long-term recovery efforts could create even more sustainable, resilient<sup>6</sup> and inclusive societies and economies. Furthermore, these approaches can complement existing commitments to the Sustainable Development Goals and net-zero emissions by 2050 in the medium to long term.

### 1. What is currently included in green recovery packages?

According to the Global Recovery Observatory<sup>7</sup>, **rescue measures** consisted of temporary liquidity support to subnational public entities, small and large businesses and not for profit organizations, temporary tax relief, and temporary life and livelihood support to families and individuals for direct provision of basic needs, targeted welfare cash transfers, health care services and support in emergencies, particularly in disaster management.

Longer term **recovery measures** consist of *medium-term, targeted incentives*, including stimulus measures such as, for instance, cash transfers for industries most affected, such as tourism and

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<sup>1</sup> This document is a concise paper offering relevant facts and figures, and arguments outlining key benefits of the circular economy to address planetary crises or a sustainable development challenge. It is a knowledge product, part of the toolbox, which members of the Global Alliance on Circular Economy and Resource Efficiency (GACERE) have developed, to support their advocacy at political level and multilateral fora for transitioning towards a circular economy. It is not a negotiated document and as such it does not necessarily represent the views of all GACERE members. Furthermore, it does not, nor is it intended to, create any binding, legal or financial obligations under international or domestic law.

<sup>2</sup> The term “green recovery” is used to denote one of the two distinct pathways in front of policymakers, the other being a “brown recovery”. A green recovery is meant to be an all-encompassing term that implies that short, medium and long-term COVID-19 recovery instruments (policies, legislation, financing, investments, etc.) are primarily directed to building back economies in an environmentally sustainable manner, enabling countries to undertake a just transition to a green, inclusive, low-carbon, resilient and circular economy.

<sup>3</sup> UNEP (2020). [Preventing the next pandemic - Zoonotic diseases and how to break the chain of transmission](#).

<sup>4</sup> GACERE (2021). [Circular Economy and Climate Change](#) and United Nations, Inter-agency Task Force on Financing for Development (2021), [Financing for Sustainable Development Report 2021](#).

<sup>5</sup> IMF (2021). [World Economic Outlook, April 2021: Managing Divergent Recoveries](#).

<sup>6</sup> IMF (2020), Special Series on Fiscal Policies to Respond to COVID-19 – Greening the Recovery.

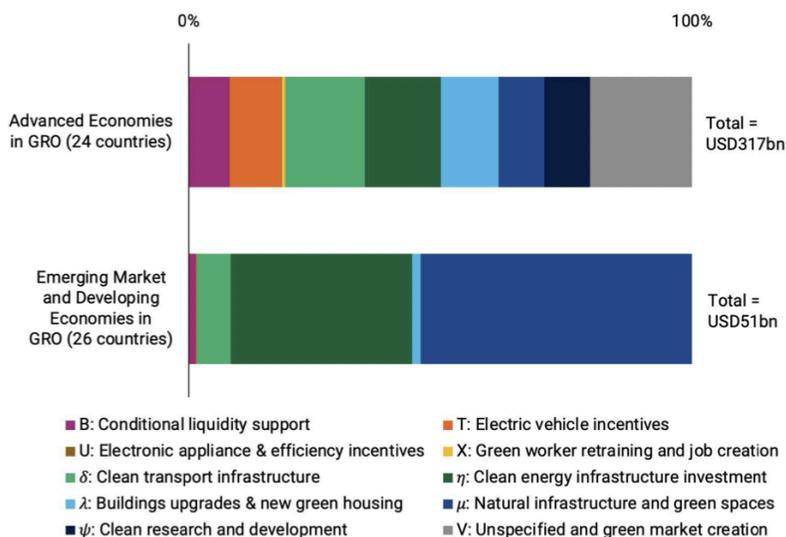
<sup>7</sup> <https://recovery.smithschool.ox.ac.uk/tracking/>; Brian J. O’Callaghan, et. al.; and UNEP (2021), Are We Building Back Better? Evidence from 2020 and Pathways for Inclusive Green Recovery Spending. Global Recovery Observatory (<https://wedocs.unep.org/bitstream/handle/20.500.11822/35281/AWBBS.pdf>).

leisure, and for what may be deemed as “previously tested” areas, such as incentives for electric vehicles, electronic appliances, and efficiency improvements. *Long-term recovery investments* consist of more diverse measures from worker retraining and job creation to non-infrastructure investments in education, healthcare, general research, and social and cultural investments, infrastructure investments in communication, traditional transport and energy, local/project-based and other large-scale infrastructure investments. Some governments also invested in green measures such as clean energy and green transport infrastructure, building upgrades and energy efficiency infrastructure, natural infrastructure and green spaces, and clean research and development.

The scaling up and adoption of circular economy practices that address resource efficiency and innovations and investments supporting climate neutrality and resilience can reduce environmental impacts with benefits on human and environmental health<sup>8</sup>. Furthermore, recovery initiatives could take into consideration some new environmental challenges that emerged due to the pandemic, e.g., increase in medical plastic waste, such as masks, gowns, and gloves.

Research from the Global Recovery Observatory<sup>9</sup>, energypolicytracker.org<sup>10</sup> and others<sup>11</sup>, illustrate that the world is not on the road to building back better and greener and transitioning to a climate neutral and sustainable economy. As of June 2021, recovery spending in 50 countries had ignored the massive benefits of a green recovery, particularly through circular economy approaches, Figure 1.

**Figure 1: Medium and long term green recovery measures by advanced, emerging market and developing economies, (Global Recovery Observatory, June 2021)**



As of October 2021, overall, green recovery spending reached approximately USD 0.5 trillion<sup>12</sup>, by advanced, emerging market and developing economies making up only about 21.5% of

<sup>8</sup> Teresa Domenech and Smeeta Fokeer (2020), [Why innovative manufacturing and circularity are key for a resilient manufacturing industry post-COVID-19](#).

<sup>9</sup> Brian J. O’Callaghan, et. al. and UNEP (2021). [Are We Building Back Better? Evidence from 2020](#) and [Pathways for Inclusive Green Recovery Spending](#). Global Recovery Observatory.

<sup>10</sup> energypolicytracker.org. (2021, March 31). [G20 countries—Energy Policy Tracker](#).

<sup>11</sup> See: [Green Recovery Tracker](#) and [Green Economy Tracker](#).

<sup>12</sup> Global Recovery Observatory. (2021). [Global Recovery Observatory](#).

recovery spending, which is incommensurate with the scale of the planetary crises of climate change, nature loss and preservation and restoration of ecosystem health, and pollution<sup>13</sup>.

In the advanced economy recovery packages, the focus is typically on incentivizing energy efficiency and a shift to electrification, promoting the creation of and participation in green markets and investing in green technologies and green energy infrastructure such as electric vehicle (EV) charging stations<sup>14</sup>.

In the emerging market and developing country recovery packages, clean transport, and energy infrastructure, as well as natural infrastructure and green spaces are at the top of planned green investments, again constituting only a minor part of their total recovery support.

An analysis conducted by the OECD<sup>15</sup> also confirms that energy and surface transport sectors are the primary targets for green recovery funding, with stimuli for industry, agriculture, forestry, and waste management being secondary targets. Investing in energy efficiency, clean and renewable energy and transport is part and parcel of a genuine green recovery approach and these sectors need massive amounts of investment in the short to medium term. However, relying solely on energy efficiency and switching to renewable energy will only address roughly half of global GHG emissions, leaving indirect emissions partially uncovered.

By adopting a more holistic approach and investing into circular practices along with clean energy and mobility transitions, further gains can be made in cutting energy demand, improving material efficiency and, for instance, in the case of circular agricultural practices<sup>16</sup>, sequestering additional carbon<sup>17</sup>, while contributing to reduced biodiversity losses and pollution. Investments on circular economy practices (notably developing value chains for sustainable products) also contribute to social objectives, on the one hand by addressing pollution's most harmful impacts on human health, which are typically borne by the most vulnerable groups<sup>18</sup>, and on the other hand by creating opportunities for new green jobs in sectors such as food and construction, but also digitalization and materials innovation<sup>19</sup>. The growing demand for circular (notably less polluting) goods and services entails significant business opportunities, already mobilizing companies towards innovative solutions, a trend that recovery measures can further promote<sup>20</sup>. With these and similar measures, the world community can address the full range of GHG emissions for the future we want.

## **2. Which circular economy features can be added in already targeted areas of green recovery?**

In the **energy sector**, enabling closed loop, circular resource use and reuse can yield major benefits. The International Renewable Energy Agency estimates that raw materials recoverable from photovoltaic panels could cumulatively yield a value of up to USD 450 million by 2030<sup>21</sup> and reduce virgin material consumption with co-benefits for biodiversity and land degradation. Also, prolonging product and asset life, through better design for durability and modularity, and through

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<sup>13</sup> Brian J. O'Callaghan, et.al, & UNEP. (2021). [Are We Building Back Better? Evidence from 2020 and Pathways for Inclusive Green Recovery Spending](#).

<sup>14</sup> Global Recovery Observatory. (2020). [Draft Methodology Document](#).

<sup>15</sup> OECD. (2020). [Policy Brief: Making the Green Recovery Work For Jobs, Income And Growth](#).

<sup>16</sup> Circular agricultural practices is a term that includes "regenerative agricultural practices" such as regenerating soil health, improving soil carbon storage and minimizing the use of inputs and materials.

<sup>17</sup> [https://www.ellenmacarthurfoundation.org/assets/downloads/Completing\\_The\\_Picture\\_How\\_The\\_Circular\\_Economy\\_Tackles\\_Climate\\_Change\\_V3\\_26\\_September.pdf](https://www.ellenmacarthurfoundation.org/assets/downloads/Completing_The_Picture_How_The_Circular_Economy_Tackles_Climate_Change_V3_26_September.pdf)

<sup>18</sup> UNEP/EA.4/3 (2018): Implementation plan 'Towards a Pollution-Free Planet'.

<sup>19</sup> Chatham House (2019), [An Inclusive Circular Economy: Priorities for Developing Countries](#).

<sup>20</sup> European Commission (2021), Pathway to a Healthy Planet for All - EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil', COM(2021) 400 final.

<sup>21</sup> Weckend, S., Wade, A., & Heath, G. (2016). [End of Life Management: Solar Photovoltaic Panels](#) (NREL/TP-6A20-73852, 1561525; p. NREL/TP-6A20-73852, 1561525).

re-use, repair and remanufacturing activities, results in higher energy life-cycle savings than materials cycling and is generally labor intensive. Similarly, ensuring a circular battery value chain will be essential to guarantee that valuable materials are maintained in the economy and efficiently returned to productive uses. Furthermore, a circular battery value chain would create an additional economic value of USD 35 billion by 2030<sup>22</sup> and have a stabilizing effect on input prices already on the rise. This would entail sufficient investment in PVC panel/battery recycling and material recovery infrastructures and capacities, notably in emerging and developing economies, to make the economics work for circular practices.

Around the world, there are also good examples of circular economy practices which could be included in recovery packages. For instance, **geothermal energy** investments to produce electricity, and the remaining geothermal fluid could be used in greenhouses, aquaculture or space heating, when these fluids have manageable salinity levels. Furthermore, valorisation of waste in energy production and soil enhancers through anaerobic digestion of **organic waste** would reduce GHG emissions and, at the same time, produce electricity or heat and replace, or at least reduce the use of synthetic soil enhancers that over time degrade land.

In the **sanitation sector**, reuse of wastewater, sludge and grey water from households and offices for energy and soil enhancer recovery is another option to consider. In the **construction sector**, use of recycled construction materials, renewable energy and resource efficient goods and services could be included among circular economy practices incentivized in green recovery. Likewise, markets for responsible management of **waste of electrical and electronic equipment (WEEE)** are growing and could be supported by regulations that expand Extended Producer Responsibility for WEEE in countries.

**Research and development funds** in green recovery packages could be used to bridge the gap between pilot and commercial scale business models for circularity and to develop new models in economic sectors that are carbon and resource intensive, such as steel<sup>23</sup> and cement<sup>24</sup>. For example, improving yields in steel manufacturing and extending building lifetime can reduce global steel demand by around a fifth by 2050, relative to baseline projections<sup>25</sup>. If designed for reuse, components and materials from decommissioned infrastructure and buildings can remain in the value chain for longer, resulting in further decreases in steel and cement demand. Over-specification due to standardised building components also results in needless emissions and can be addressed through tailored procurement.

Supporting countries with **inclusive and sustainable industrialization plans** or **national circular economy action plans and strategies** that discourage unsustainable consumption and production patterns could also unlock innovations and investments in the circular economy<sup>26</sup>, enhancing resilience, sustainability, and inclusiveness of societies, ecosystems, and economies. These plans could also include measures for **educating citizens of all ages** to understand how just transitions to circular economy can address climate change, biodiversity loss and pollution, and preserve and restore healthy ecosystems we all depend on to survive. Awareness raising and provision of information on which products are more circular and on alternative forms of consumption, such as sharing and products-as-a-service, can help expand and create markets

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<sup>22</sup> World Economic Forum. (2019). [A Vision for a Sustainable Battery Value Chain in 2030](#).

<sup>23</sup> The steel sector accounts for 6%–7% of global GHG emissions according to Thomas Koch Blank. (2019). [The Disruptive Potential of Green Steel](#). Rocky Mountain Institute.

<sup>24</sup> The cement sector accounts for 8% of global GHG emissions according to Johanna Lehne & Felix Preston. (2018). [Making Concrete Change: Innovation in Low-carbon Cement and Concrete](#).

<sup>25</sup> International Energy Agency. (2020). [Iron & Steel Technology Roadmap](#).

<sup>26</sup> UNIDO. (2020). [Responding to the Crisis: Building a better future](#).

for secondary raw materials and circular products along with new business opportunities and green jobs.

### 3. Circular economy initiatives can create new decent jobs in a green recovery

The COVID-19 pandemic has disrupted the already uneven progress towards achieving many of the Sustainable Development Goals (SDGs). The crisis caused the first annual increase in global poverty in over 20 years by pushing an estimated 95 million more people into extreme poverty in 2020<sup>27</sup>.

A circular economy approach is highly effective at creating new jobs. Research in Latin America and the Caribbean (LAC region) indicates that adopting a circular economy approach could create a net total of 4.8 million new jobs in the region with businesses engaged in practices of reuse, repair, remanufacturing of products and parts, and recycling<sup>28</sup>. Such value-retention, symbiosis, product-servicing, and product-life extension activities are typically local in nature and thus create “proximity jobs”. A circular economy in Africa could also have positive employment effects, with the potential of creating 11 million new jobs by 2030<sup>29</sup>.

Circular economy practices can also enable a just transition that prioritizes workers and upholds fundamental principles and rights at work<sup>30</sup>. Ensuring that green jobs in the circular economy are decent and emphasize workers’ safety, especially in low-skilled sectors, should therefore be a priority of governments<sup>31</sup>.

During the recovery phase from the crisis, it will be important that individuals who lost their jobs during the pandemic are able to regain employment, including in economic sectors that are due to benefit from a green recovery and the transition to a circular economy. For this reason, retraining and upskilling existing and future workers in circular economy practices needs to be part of green recovery packages<sup>32</sup>. This should be done through formal and informal education, building upon previous and current training programmes, for example, of UNIDO, UNEP and other organizations. Promoting circular economy as a career destination, strengthening digital skills, and integrating circularity into existing education and training systems should also be areas for green recovery investments<sup>33</sup>.

The crisis brought about by the pandemic showed the importance of socio-economic resilience. Supporting the development of circular economies in both the global North and the global South could help reduce emissions from freight and shipping. Social and environmental spill over effects from unsustainable supply chains, such as work accidents, may also be mitigated. Crucially, a circular economy reduces waste and problems derived from its poor management, including pollution and its effect on human health. Moreover, the recycling and reuse of chemicals, for instance in the battery value chain, will require more workers to handle raw materials – many of

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<sup>27</sup> IMF (2021). [World Economic Outlook, April 2021: Managing Divergent Recoveries](#).

<sup>28</sup> ECLAC/ILO. (2018) [Environmental sustainability and employment in Latin America and the Caribbean](#).

<sup>29</sup> Rademaekers, K, Smit, T.A.B, Artola, I., Koehler, J., Hemkhaus, M., Ahlers, J., Van Hummelen, S., Chewpreecha, U., Smith, A., & McGovern, M. (2021). [Circular economy in the Africa-EU cooperation – Continental report](#). Continental report under EC Contract ENV.F.2./ETU/2018/004 Project: “Circular Economy in Africa-Eu cooperation”, Trinomics B.V., Tomorrow Matters Now Ltd., adelphi Consult GmbH and Cambridge Econometrics Ltd. [Website]. Publications Office of the European Union.

<sup>30</sup> International Labour Organization. (2015). [Guidelines for a just transition towards environmentally sustainable economies and societies for all](#).

<sup>31</sup> International Institute for Sustainable Development & SITRA. (2020, p.17). [Effects of the Circular Economy on Jobs](#). See also the related discussion in [Employment and Social Developments in Europe 2019](#).

<sup>32</sup> SITRA. (2021). [How Does the Circular Economy Change Jobs in Europe?](#). See also the estimates for necessary social investments in European Commission. (2020). [Employment and Social Developments in Europe 2020](#).

<sup>33</sup> Zero Waste Scotland & Circle Economy. (2020, p.7). [The Future of Work: Baseline Employment Analysis and Skills Pathways for the Circular Economy in Scotland](#).

them being hazardous substances. Working conditions, health and safety, and exposure limits must be addressed to deliver high work protection.

#### **4. Circular economy and resource efficiency approaches can create new business opportunities and trigger green investments, including for MSMEs, in a green recovery**

The pandemic has resulted in losses in all sizes of business, particularly in developing countries where fiscal space for rescue and recovery funding was limited. On the other hand, research suggests that transitioning to a circular economy could generate a net economic benefit of EUR1.8 trillion for Europe by 2030, and an annual value of approximately USD624 billion in India by 2050, relative to the business-as-usual scenario<sup>34</sup>.

Evidence demonstrates that circular economy and resource efficiency interventions at the firm level, including for micro, small and medium-sized enterprises (MSMEs), generate cost savings through innovations and green investment opportunities that simultaneously create environmental benefits and decent and higher skilled jobs<sup>35,36</sup>. By implementing circular economy practices with recovery funding, MSMEs can enhance their competitiveness in domestic, regional, and global markets, improve their market access, create decent jobs, and gain capabilities for joining new and more circular regional and global value chains. Integrating digital technologies in design and manufacturing, distribution, product use, reverse logistics, remanufacturing and recycling could significantly enable circular economy practices, including in MSMEs, and along value chains. For example, digital technologies facilitating remote maintenance, and enabling tracking, collection, and logistics for retrieving used products and parts such as remanufacturing cores would strengthen resilience and competitiveness. Furthermore, global buyers of MSMEs sharing the same supply chain could be incentivized to work together to scale up circular economy practices among their MSME suppliers, thereby strengthening their relationships within the value chains and networks and developing more agile approaches to respond to short-term and long-term shocks.

By tackling structural inefficiencies across supply chains, the circular economy offers abundant value-creation opportunities at the industry level<sup>37</sup>. For instance, the global returnable packaging market is expected to grow from USD 37 billion in 2018 to USD 59 billion by 2026<sup>38</sup>, while the second-hand clothing market is expected to be twice the size of fast fashion by 2029<sup>39</sup>. Efforts in further research and development to ensure that the returnable packaging sector moves forward with circular innovations will also address the concerns about hygiene and safety of reusable packaging that have been at the top of consumers' minds<sup>40</sup>. In addition, developing and restructuring sectoral policies to better deal with negative externalities<sup>41</sup>, for instance, with extended producer responsibility schemes in packaging (but also in other product groups) could further promote a circular economy and disincentivize non-circular practices<sup>42</sup>.

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<sup>34</sup> Ellen MacArthur Foundation. (2021) [Universal Circular Economy Policy Goals: Enabling the transition](#).

<sup>35</sup> UNIDO. (2019). [Annual Report 2019](#). In eight North African countries, resource efficiency innovations that were implemented with assistance from the EU funded SwitchMed project, supported 125 MSMEs to reduce their CO<sub>2eq</sub> emissions by nearly 200 thousand tons, save 34 thousand tons of materials and 3.5 million cubic meters of water annually. These MSMEs made financial savings of about EUR 42 million per year, and about EUR 88 million worth of investment over a four-year period, UNIDO Annual Report 2019.

<sup>36</sup> UNIDO. (2020). [Annual Report 2020](#). Similar results achieved in a resource efficiency project funded by Switzerland, showed that 149 MSMEs in Indonesia reduced 2 million cubic meters of wastewater and 350 thousand tons of CO<sub>2eq</sub> annually and are benefiting from nearly USD 20 millions of financial savings per year.

<sup>37</sup> Albaladejo, Manuel, et al. (2021). [What is the Circular Economy?](#), UNIDO

<sup>38</sup> Ellen MacArthur Foundation. (2017) [The New Plastics Economy: Catalysing action](#).

<sup>39</sup> ThredUP. (2020). [2020 Resale Report](#).

<sup>40</sup> Feber, D., Lingqvist, O., & Nordigården, D. (2020, p.7). [How the packaging industry can navigate the coronavirus pandemic](#).

<sup>41</sup> Ellen MacArthur Foundation. (2020). [Financing the circular economy](#).

<sup>42</sup> OECD. (2020). [Policy Brief: Making the Green Recovery Work For Jobs, Income And Growth](#).

Sharing and the digital economy and product-as-a-service business models<sup>43</sup> can reduce resource consumption and pollution, while saving costs. Enabling product-as-service business models which are based on collecting service costs over a duration could be supported by suitable accounting practices that differ from those for selling a good. Governments could lead by example and adjust their public procurement policies and practices to give preference to circular, performance-based, product-as-service offers when procuring goods/services<sup>44</sup>, including procurement of reconditioned and remanufactured products and equipment. Such policies would also help expand circular product and secondary raw materials markets. Public policies and recovery funding could support renewable energies, energy efficiency, circular product and value chain development and innovations with grants and loans and leverage private funding for investments at local and national level. Targeting recovery funding to these types of green policies could seize these opportunities for the benefit of all.

Financial institutions also need to adapt and develop capacities on how to promote circular businesses and projects. For example, developing a better understanding of the remanufacturing process, including why remanufacturing can be capital-intensive, may make financial institutions more receptive to investing in the circular economy<sup>45</sup>. Furthermore, companies could be incentivized through regulatory frameworks, securities guidance, and stock exchange listing requirements to incorporate environmental, social and governance data into their disclosure documents. Companies can also look to innovative accounting practices such as using environmental profit and loss statements to emphasize their circularity and resource efficiency commitments.

Investments in compliance with the EU taxonomy for sustainable activities and other sustainable finance frameworks can encourage companies to transition to circular business models<sup>46</sup>. During the recovery, financial support from investors and international financial institutions could be contingent on reviewing investment proposals and business plans with a circular economy lens. Medium-term and long-term recovery funds could also be contingent on alignment with global goals such as the SDGs and meeting government net-zero commitments by 2050.

On the way to achieve global goals, perverse incentives need to be eliminated, disincentives need to be put in place on economic sectors that undermine progress on global goals, and obsolete policies must be aligned to the vision of the 2030 Agenda. Integrating environmental considerations in national economic policymaking through greening of the public finance frameworks (e.g., with green budgeting and ecosystem accounting<sup>47</sup>) would also be a key step towards channelling more consistent and at-scale financing for circular economy objectives along a green recovery path.

First and foremost, fossil-fuel subsidies should be reformed and eliminated<sup>48</sup>, and carbon pricing mechanisms should be systematised. As of 2019, the International Institute for Sustainable Development (IISD) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) showed that, out of almost 200 Nationally Determined Contributions (NDCs), only 8% of countries (14

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<sup>43</sup> UNIDO. (2019). [Industrial Resource Efficiency Division and Circular Economy](#). For example, one Colombian textile manufacturer alone has saved 63% of chemicals, 27% additives and USD 150,000 per year with a chemical leasing model that is based on the performance of the chemicals, instead of buying them in bulk.

<sup>44</sup> UNEP. (2018). [Building Circularity into our Economies through Sustainable Procurement](#).

<sup>45</sup> European Commission. (2017). [Remanufacturing](#).

<sup>46</sup> United Nations Environment Programme. (2020). [Progress in the implementation of resolution 4/4 on addressing environmental challenges through sustainable business practices](#) and E3G. (2020, p. 10). [Drafting Recovery Plans for a Resilient and Green Economy](#).

<sup>47</sup> United Nations. (2021). [System of Environmental-Economic Accounting - Ecosystem Accounting](#).

<sup>48</sup> António Guterres. (2020, October 12). [Secretary-General's video remarks to Fourth Meeting of the Coalition of Finance Ministers for Climate Action](#).

NDCs) explicitly pledged to reform fossil fuel subsidies<sup>49</sup>. Some NDCs took material efficiency into consideration<sup>50</sup>, with others incorporating circular economy practices as a mitigation option<sup>51</sup>. Compliance with the 1.5°C goal of the Paris Agreement will require adoption of circular economy practices at scale<sup>52</sup>.

Transitions to circular economy require holistic, whole of society approaches and can lead to reduced emissions, pollution, and biodiversity losses, if the right balance between incentives, disincentives and constraints could be found. At national level, striking the right policy mix would require leadership, partnership, and collaboration between businesses, citizens and policymakers in industry, trade, environment, economy, finance, labor and education and training within a whole of government framework, so that a whole of society consensus building process is successful. At the global level, understanding the co-benefits of circular economy transitions in combatting and adapting to climate change<sup>53</sup>, biodiversity loss and pollution, alignment around common goals for just transitions, and international cooperation and exchanges on best practices would be critical.

## Conclusion

Circular economy interventions can target sectors which are already included in recovery packages such as energy, agriculture and food, mobility, housing and infrastructure, but can also deliver significant benefits in other sectors including, *inter alia*, ICT, textiles, plastics (including packaging), sanitation, construction, and others depending on priorities and circumstances at country level.

Investing in circular product designs and market development for circular products will improve resource and energy efficiency. Improving the capability and capacity of collection, sorting and recycling of waste streams with investments in supporting infrastructure, including through digital technologies, will maintain value in the economy, reduce pollution and create decent jobs.

Beyond technical solutions, significant behavioural change, promoted through green education to increase citizen and consumer awareness and information, as well as social protection measures, are necessary in guaranteeing a just transition to a circular economy – improving global social equity<sup>54</sup>. Circular economy practices will also create healthier ecosystems, communities and cities. Furthermore, resources for skills development in the circular economy activities will ensure that people are ready to participate in the circular economy<sup>55</sup> and that new green jobs can be created<sup>56</sup> to reach the objective of leaving no one behind.

The choices that are being made now on how to invest public and private recovery funding will impact future generations, making it even more crucial that policies discourage unsustainable consumption and production patterns<sup>57</sup> and business-as-usual practices, while reducing the risk of assets being stranded later. Both those choices, in the form of stimulus and investment

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<sup>49</sup> International Institute for Sustainable Development. (2019). [Raising Ambition Through Fossil Fuel Subsidy Reform](#).

<sup>50</sup> International Resource Panel. (2020, p.173). [Resource Efficiency and Climate Change: Material Efficiency Strategies for a Low-Carbon Future](#).

<sup>51</sup> UNFCCC. (2021, p.32). [Nationally determined contributions under the Paris Agreement. Synthesis report by the secretariat](#).

<sup>52</sup> United Nations Environment Programme (2020). [Emissions Gap Report 2020](#).

<sup>53</sup> GACERE (2021). [Circular Economy and Climate Change](#).

<sup>54</sup> Janez Potočnik. (2021). [The benefits of a circular economy for achieving climate objectives and recovering better](#). A UN pre-event of the World Circular Economy Forum + COP26 Climate Meeting Co-hosted by the EU Delegation and the Permanent Missions of Netherlands, Kenya, Singapore and Finland to the UN.

<sup>55</sup> OECD. (2020). [Policy Brief: Making the Green Recovery Work For Jobs, Income And Growth](#).

<sup>56</sup> International Labour Organization. (2020). [Policy Brief: COVID-19 and the world of work](#).

<sup>57</sup> United Nations Environment Programme. (2020). [Progress in the implementation of resolution 4/4 on addressing environmental challenges through sustainable business practices](#).

packages, and their implementation, can deliver more sustainable future growth by adopting circular approaches.

For green recovery to be effective at addressing the climate change, biodiversity and pollution crises, transformative action and a whole of society approach is needed. Just transitions to circular economy would require strong leadership, collaboration, partnership between governments at national, regional, and local level, businesses and consumers, and policy coordination for modifications in regulations, e.g., for provision of economic incentives as well as international cooperation.