



POLICY BRIEF

ENSURING THAT COVID-19 RECOVERY POLICIES SUPPORT THE TRANSFORMATION TO A CLIMATE NEUTRAL SOCIETY



Task Force 11
**COVID-19: MULTIDISCIPLINARY APPROACHES
TO COMPLEX PROBLEMS**

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موجز السياسة ضمان أن سياسات التعافي من جائحة فيروس كورونا المستجد (كوفيد-١٩) تدعم التحول إلى مجتمع محايداً مناخياً

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جائحة فيروس كورونا المستجد (كوفيد-١٩): نُهج متعددة
التخصصات لمعالجة المشكلات المعقدة



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ABSTRACT

Governments worldwide have pledged trillions of dollars for economic recovery from the crisis triggered by the COVID-19 pandemic. Without a targeted approach, these recovery programs can lead to a lock-in of high-carbon technologies. This would block the transformation toward climate neutrality that is necessary to prevent a climate crisis. The Group of 20 (G20) should implement the following policy measures:

- Remove fossil fuel subsidies within three years.
- Target tax rebates and subsidy programs on labor-intensive, low emissions technology.
- Introduce policies to promote the continuation of behavioral changes acquired during the pandemic regarding online communication, meeting, and teaching tools.
- Regulate tourism providers to achieve zero emissions.
- Establish the infrastructure for low-carbon land transport and energy supply.

تعهدت الحكومات في جميع أنحاء العالم بتقديم تريليونات الدولارات للتعافي الاقتصادي من الأزمة الناجمة عن جائحة فيروس كورونا المستجد (كوفيد 19). ويمكن أن تؤدي برامج التعافي هذه، من دون اتباع نهج مستهدف؛ إلى تقييد لصالح التقنيات الكثيفة الكربون. وهذا من شأنه أن يعوق التحول نحو الحياد المناخي الضروري لمنع حدوث أزمة مناخية. ويجب على مجموعة العشرين (G20) تنفيذ تدابير السياسة الآتية:

- إلغاء دعم الوقود الأحفوري في غضون ثلاث سنوات.
- استهداف التخفيضات الضريبية وبرامج الدعم التي تعتمد على العمالة الكثيفة والانبعاثات المنخفضة.
- وضع سياسات ترمي إلى تعزيز استمرار التغييرات السلوكية التي حدثت في أثناء انتشار الحائجة في ما يتعلق بالاتصالات والاجتماعات وأدوات التدريس عبر الإنترنت.
- تنظيم مقدمي خدمات السياحة لتحقيق الوصول إلى صافي انبعاثات صفرية.
- إنشاء البنية التحتية للنقل البري المنخفض الكربون وإمدادات الطاقة.



CHALLENGE

Hundreds of thousands of people have died from COVID-19, millions are infected, and hundreds of millions have lost their jobs. The COVID-19 pandemic has led to an unprecedented and precipitous shutdown of social and economic activities around the world. Never before in modern times have schools and borders been closed almost everywhere, and international travel grounded to a halt. Owing to the massive reduction in demand for fossil fuels, at the bottom of the crisis, fossil fuel prices became negative. The crisis has led to huge impacts on livelihoods, and triggered emergency policies by governments on a war-like footing, as they try to cushion the adverse economic effects and sustain citizens and businesses alike. Within a few weeks, several trillion dollars of public money were pledged as emergency and recovery support. The COVID-19 crisis has relegated the concerns related to climate change that had reached a historical high with the Fridays for Future movement in 2019 to a lower level of saliency as people have been struggling for survival.

The crisis has led to direct and indirect reductions in greenhouse gas emissions, which had reached up to 18% globally in early April 2020 (Le Quéré et al. 2020). However, as shutdowns are being lifted, emissions are increasing again. In some sectors, they are likely to cross pre-crisis levels. Some countries (e.g., Indonesia and Vietnam) have ramped up the construction of coal-fired power plants, while others (e.g., Spain) have closed their last plants. The fall in oil prices and freezing of company investments are detrimental to renewable energy and energy efficiency investments. Fear of infection in public transport has led to a modal shift to private cars.

Many observers fear that recovery policies may “lock in” high emissions technologies for decades and lead to a level of public debt that may not allow governments to underwrite greenhouse gas mitigation policies in the future. This is because the incumbent mature technologies are more attractive for recovery programs that need to show rapid results. This was the case in recovery programs after the 2008-2009 financial crisis, where despite lofty statements in most countries, investments in high-carbon technologies were supported (Hepburn et al. 2020).

The world should treat COVID-19 as a wake-up call. The crisis can be seen as an “instantaneous” version of the climate change crisis (Pereira da Silva 2020). The climate crisis is global in character and needs a scientific, rational approach with the strong engagement of governments for its solution. The threat to each human and each economy is not as directly visible as it is in the COVID-19 crisis. Stark differences in vulnerability are seen in the context of COVID-19, where young people are less likely to be affected than old ones. These differences also exist in climate change, where low lying coastal areas and tropical regions will be affected more than others, and old people are more likely to die because of heatwaves than young ones. The measures taken to control the spread of COVID-19 are strikingly similar to those that climate activists have been demanding for decades: less travel, work, production, and consumption (Ieven and Overwijk 2020). However, the impacts show that climate-friendly recovery needs to be designed very carefully.

The COVID-19 crisis has also shown that cooperation between governments remains a challenge and can even be elusive when national security is at stake. However, the crisis also shows how absolutely essential multilateral cooperation is, if mankind is to overcome its biggest challenges, including climate change.



PROPOSAL

A climate-friendly recovery program from the COVID-19 crisis needs to build on four pillars, which are derived from the desire to achieve the Sustainable Development Goals (SDGs). These have been heavily impacted by the COVID-19 crisis and are likely to be impacted similarly in the future if the climate crisis is not addressed properly. Recovery programs need to prove that they are in line with the objective of the Paris Agreement (Art. 4). Namely, achieving a balance of anthropogenic emissions by sources and removal by sinks of greenhouse gases in the second half of the century, which is generally interpreted to mean that society needs to become “climate neutral.” Therefore, the integrated concept of a circular carbon economy through the 4Rs—namely reduce the amount of carbon entering the economy; reuse carbon without chemical conversion; recycle carbon with chemical conversion; and remove excess carbon from the atmosphere—and all types of zero greenhouse gas technologies need to be promoted through climate-friendly recovery programs. At the same time, efforts to eliminate wasteful consumption need to be strengthened.

The first pillar of a climate-friendly recovery strategy is the ability to create jobs quickly. Research has consistently shown that the labor intensity of renewable energy technologies and energy efficiency improvements is higher than that of emission-intensive technologies. The skill level required for many of these jobs is not very high. This means that expensive and lengthy retraining measures are not required (see IEA 2020 for a discussion on the labor intensity of all kinds of energy technologies). This applies especially for energy efficiency as found by Hepburn et al. (2020). Governments should thus set up incentives for individual and company investments in such labor-intensive technologies. For many kinds of technology, the incentive level can be relatively limited, given the rapid cost decreases achieved over the last few years (IRENA 2020). Financing of this initiative should be based on the elimination of fossil fuel subsidies, which is made easier by the low fossil fuel prices generated by the COVID-19 crisis (Burke et al. 2020). Proper policy design is critical to prevent rebound effects, limit market distortion, and ensure additionality of public funding (Agrawala et al. 2020).

A second pillar aims at preserving behavioral changes acquired during the pandemic. While before the pandemic, business and conference travel as well as commuting for education and jobs were seen as indispensable, the rapid adaptation to home office and online communications and meeting tools surprised many. The perennialization of this behavior through dedicated incentives and improved technologies (Spence 2020) can lead to far lower travel intensity and related reduction in emissions, while simultaneously improving the quality of life of citizens. This would be in line with the observations of Bodenheimer and Leidenberger (2020) who treated the crisis as an opportunity for a transition to sustainability. International conferences, including those held under the United Nations Framework Convention on Climate Change (UNFCCC), can (partially) be conducted virtually, that is, through online sessions, as part of a “new normal.”

A third pillar should be massive dedicated government investments into technology clusters that are crucial for achieving a low-carbon transition. The window of opportunity for such programs is short, given that after the crisis is over, austerity is likely to prevail for decades, unless public debt is “paid off” through inflation. As the Korean Green New Deal of 2009 shows (Agrawala et al. 2020), large investments can yield large benefits. Candidates for such technology clusters are zero-emission vehicles and the value chain for “green” and “blue” hydrogen.

A fourth pillar relates to the use of space technology and satellite remote sensing in dealing with the COVID-19 crisis and recovery from it. During the crisis, such technology has played a major role in identifying and monitoring impacts of the pandemic, leading to a reduction in emissions. It also allows tracking of lifestyle changes and enables speedy reactions when problematic trends are detected, such as the shift in traffic modes and patterns toward more greenhouse gas intensive ones. A far-reaching availability of data allows better targeting of policies and the monitoring, reporting, and verification of emissions. For example, misreporting of crucial emissions sources such as fugitive ones from the natural gas production chain can be significantly reduced by space-based monitoring.

Proposal #1: G20 states should launch an initiative for fossil fuel subsidy removal and reallocation of funding to climate-friendly, highly labor-intensive recovery policies:

For 2017, global fossil fuel subsidies were estimated at \$5.2 trillion, over 6% of the GDP (IMF 2019). The low level of fossil fuel prices presents an ideal opportunity to remove fossil fuel subsidies, as the impact of subsidy removal on recipients will be minimal. Subsidy removal should be directly earmarked for labor-increasing government policies in a manner that can provide direct support for the social groups that have benefited from the fossil fuel subsidy to date. G20 countries should declare the joint removal of all fossil fuel subsidies within three years and earmark the proceeds for climate-friendly technology demonstration and infrastructure investments with high labor intensity.

Proposal #2: G20 states should publish a catalogue of climate smart technologies for consumption subsidies.

G20 member states should coordinate their consumption subsidy programs to exclude high emission technologies. A good precedent is the German program of limiting car purchase subsidies to electric vehicles. Ideal low-carbon subsidy programs would apply to vehicles, household appliances, and building refurbishment. Governments should accelerate the impacts of such subsidies through coordinated bulk procurement programs for technologies with the highest cost reduction potential. SMEs should be ensured of access to these programs.

Proposal #3: G20 “low travel on the job” policy initiative

This initiative should coordinate policy instruments that facilitate the continued use of home office and online meeting technologies. These policies should include tax incentives for equipment and software, while reducing incentives for commuting and business travel. These should be complemented by ensuring compatibility among various online resources, and coordination among institutions in specific sectors, such as higher education. Countries should invest in modern home-schooling technologies (and train teachers and pupils with respect to this) to increase resilience to potential future pandemics. These policies should be designed to limit the need for travel, and can be combined with other policies such as a four-day work week that can both limit travel and create more jobs. Once successful, they can spawn additional policies to limit wasteful consumption through modern information technologies.

Proposal #4: G20 zero emissions tourism initiative

This initiative should support high value-added tourism that reduces the impact of greenhouse gases per tourism dollar spent and offsets the remaining carbon footprint. The aim is to allow growth in tourism revenues even if the number of trips are reduced. A good example for high value-added, low-impact tourism (excluding the flight reaching the country) is Bhutan, which levies a high daily tourism fee while providing high quality tourist services. Similarly, Seychelles has limited the number of hotel rooms, and this has led to high average profits per night sold. Both countries have protected large shares of their areas and have each gained the reputation of being an “unspoiled paradise.” G20 governments should set regulatory requirements to the effect that travel service providers must calculate their carbon footprint and publish it in the form of emissions intensity labels, while also offsetting the emissions.

Proposal #5: G20 low-carbon land transport modes initiative

The establishment of full infrastructure for low-carbon transport would be an ideal multi-year recovery program. It should include public investment in the distribution infrastructure for hydrogen as a transport fuel and recharging stations for electric vehicles. This initiative would be highly synergetic with the one to invest along the entire value chain of “green” and “blue” hydrogen, as described in detail in PB07 “Promoting carbon-neutral hydrogen through UNFCCC and national-level policies” of TF2. This can be modeled on the German green hydrogen plan that was unveiled as part of Germany’s COVID-19 recovery program. G20 governments should try to coordinate engagement in clusters to prevent bottlenecks because of massive public funding peaks over a short period of time, followed by “valleys of death.”

Proposal #6: G20 should strengthen international climate policy and carbon market instruments at the national and global levels

COVID-19 can have negative effects on the process of implementation of the Paris Agreement and related market-based instruments for greenhouse gas mitigation at national and global levels. At the national level, plans to strengthen nationally determined contributions and market mechanisms have been shelved and prices of emissions allowances have fallen. At the global level, the process of defining detailed rules for the mechanisms under Article 6 of the Paris Agreement has been stalled. Thus, we propose a G20 initiative titled “Markets for climate protection,” with four components. First, a middle ground proposal for the finalization of rules in pursuit of Article 6 at the UNFCCC COP 26 in 2021. Second, an initiative to enhance the ambitions of nationally determined contributions to be communicated in 2020. Third, a coordinated floor price for national carbon market mechanisms. Finally, a capacity-building initiative aimed at countries outside the G20 to establish new market mechanisms or strengthen existing ones.

Proposal #7: G20 smart space technology initiative

During the pandemic, scarcity of real-time data on key impacts such as emissions has been spotlighted. A coordinated approach to generation, processing, and publication of key data showing planetary health would enable real-time policy responses to crises, including climate change. Space technology offers a reliable and timely source of time-series data on the environment, weather, greenhouse gases, air pollution, etc. Such data are directly related to climate change, allowing for an evidence-based approach to climate change issues and impacts. We recommend the development of an interactive platform that can comprehensively integrate and present satellite information and remote sensing data provided by space agencies and authorities of G20 countries. The purpose of such a platform would be the presentation of global information before the pandemic, during the lockdown period, and in the post-lockdown recovery stage. Such a platform can facilitate the comparison of the three periods, and can serve as a basis to ensure that economic recovery plans from the pandemic preserve positive behavioral changes acquired during the pandemic. These have led to a decrease in direct and indirect greenhouse gas emissions, and positive impacts on other SDGs. Furthermore, the platform could be used to monitor the new post-pandemic lifestyle and its impacts on the environment, thus allowing for the assessment of these climate change impacts. Finally, it should be used to monitor, report, and verify national-level greenhouse gas emissions. The past has shown that important emissions categories such as methane emissions from natural gas production, processing, and transport as well as emissions of potent industrial gas are underreported in national greenhouse gas inventories (see e.g. Alvarez et al. 2018).

Key recommendations

1. G20 fossil fuel subsidy removal initiative: Invest in people instead of fuels.
2. G20 climate smart technology consumption subsidy initiative: Make technologies of the future attractive for citizens and businesses.
3. G20 “low travel on the job” policy initiative: Work productively in front of your screen instead of wasting time and energy on the move.
4. G20 zero emissions tourism initiative: Promote high value instead of high-carbon tourism.
5. G20 low-carbon land transport modes initiative: Enable breakthroughs in low-carbon transport through integrated infrastructure development.
6. G20 smart space technology initiative: Ensure real-time monitoring of key variables related to public health and climate, including national greenhouse gas emissions.

Disclaimer

This policy brief was developed and written by the authors and has undergone a peer review process. The views and opinions expressed in this policy brief are those of the authors and do not necessarily reflect the official policy or position of the authors' organizations or the T20 Secretariat.



REFERENCES

Agrawala, Shardul, Damien Dussaux, and Norbert 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, Paris.

Allianz Research. 2020. "Managing the curves: shaping a sustainable Covid-19 recovery." Accessed July 29, 2020. https://www.eulerhermes.com/en_global/APAC/apac-economic-research/managing-the-curves-shaping-a-sustainable-covid19-recovery.html.

Alvarez, Ramón, Daniel Zavala-Araiza, David Lyon, David Allen, Zachary Barkley, Adam Brandt, Kenneth Davis, Scott Herndon, Daniel Jacob, Anna Karion, Eric Kort, Brian Lamb, Thomas Lauvaux, Joannes Maasakkers, Anthony Marchese, Mark Omara, Stephen Pacala, Jeff Peischl, Allen Robinson, Paul Shepson, Colm Sweeney, Amy Townsend-Small, Steven Wofsy, and Steven Hamburg. 2018. "Assessment of methane emissions from the U.S. oil and gas supply chain." *Science* 361, no. 6398: 186–188. doi: 10.1126/science.aar7204.

Bodenheimer, Miriam and Jacob Leidenberger. 2020. "COVID-19 as a window of opportunity for sustainability transitions? Narratives and communication strategies beyond the pandemic." *Sustainability: Science, Practice and Policy* 16: 61–66.

Burke, Josh, Sam Fankhauser, and Alex Bowen. 2020. *Pricing carbon during the economic recovery from the COVID-19 pandemic*. London: Grantham Research Institute on Climate Change and the Environment.

Hepburn, Cameron, Brian O'Callaghan, Nicolas Stern, Joseph Stiglitz, and Dimitri Zenghelis. 2020. "Will Covid-19 fiscal recovery packages accelerate or retard progress on climate change?" *Oxford Review of Economic Policy* 36. <https://doi.org/10.1093/oxrep/graa015>.

International Energy Agency (IEA). 2020. "World Energy Outlook Sustainable Recovery Report." Accessed June 15, 2020. <https://www.iea.org/events/world-energy-outlook-special-report-on-sustainable-recovery>.

International Monetary Fund (IMF). 2020. "Greening the recovery." Accessed May 20, 2020. <https://www.imf.org/en/Topics/climate-change/green-recovery>.

REFERENCES

International Monetary Fund (IMF). 2019. "Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates." Accessed June 20, 2020. [https://www.imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509#:~:text=Global-ly%2C%20subsidies%20remained%20large%20at,percent%20of%20GDP\)%20in%202017.](https://www.imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509#:~:text=Global-ly%2C%20subsidies%20remained%20large%20at,percent%20of%20GDP)%20in%202017.)

Ieven, Bram and Jan Overwijk. 2020. "We created this beast. The political ecology of COVID-19." Accessed July 20, 2020. <https://www.eurozine.com/we-created-this-beast.>

International Renewable Energy Agency (IRENA). 2020. "Renewable power generation costs in 2019." Accessed June 20, 2020. <https://www.irena.org/publications/2019/May/Renewable-power-generation-costs-in-2018.>

KPMG. 2020. "Green fiscal stimulus. Why it is needed and how to implement it." Accessed July 29, 2020. <https://home.kpmg/uk/en/home/insights/2020/06/green-fiscal-stimulus.html.>

Le Quéré, Corinne, Robert Jackson, Matthew Jones, Adam Smith, Sam Abernethy, Robbie Andrew, Anthony De-Gol, David Willis, Yuli Shan, Josep Canadell, Pierre Friedlingstein, Felix Creutzig, and Glen Peters. 2020. "Temporary reduction in daily global CO₂ emissions during the COVID-19 forced confinement." *Nature Climate Change*, no. 2020: 1–7. <https://doi.org/10.1038/s41558-020-0797-x.>

Pereira da Silva, Luiz. 2020. *Green Swan 2 – Climate change and Covid-19: reflections on efficiency versus resilience*. Basel: Bank for International Settlements.

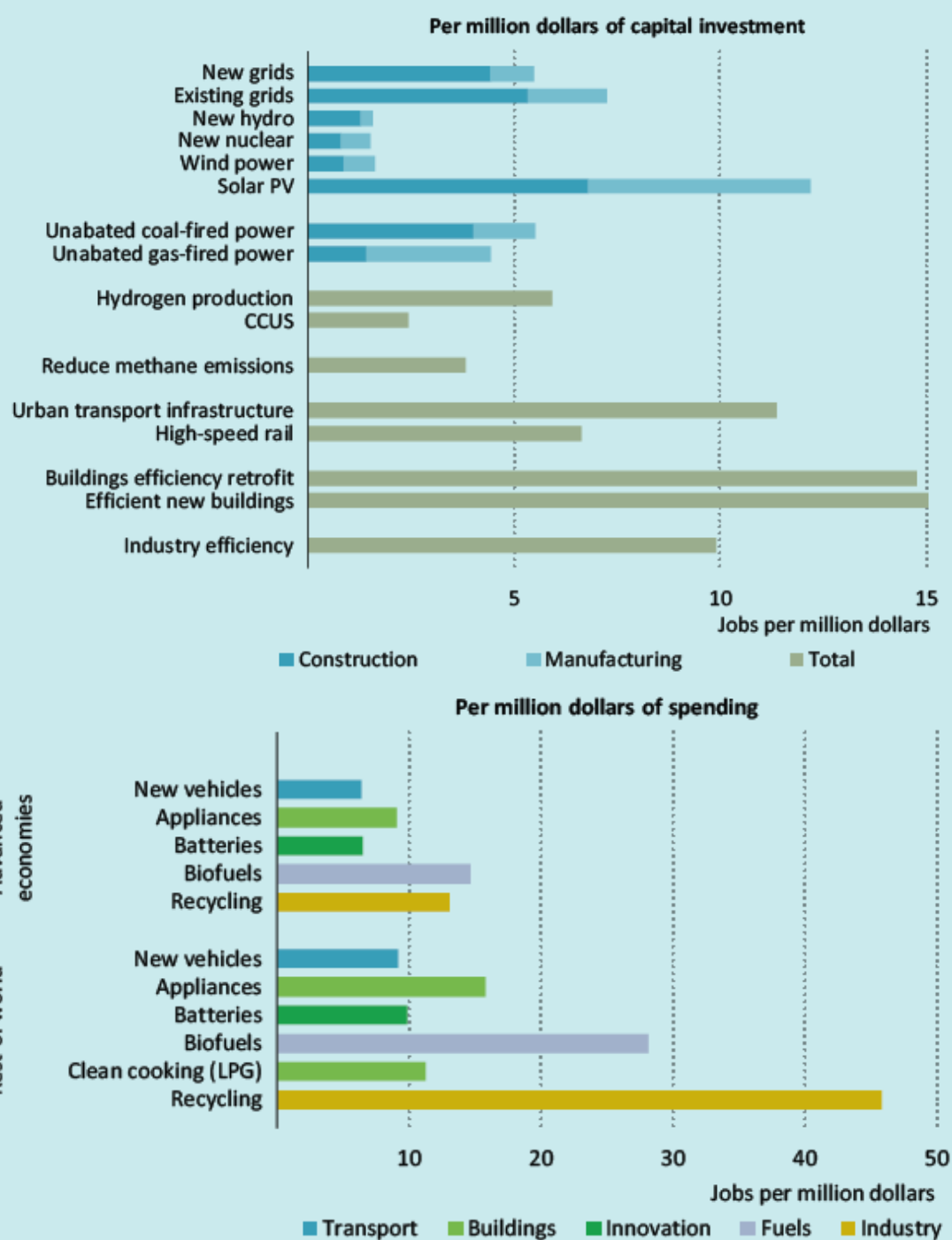
Spence, Michael. 2020. *Acceleration of the digital transformation of the economy*. New York: General Atlantic.



APPENDIX

Overview of high labor-intensive, low-carbon technologies

Jobs created



CCUS: Carbon capture, utilization and storage

Source: IEA (2020, p. 40)



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