

Fossil Fuels, Climate Change, and the COVID-19 Crisis: Pathways for a Just and Green Post-Pandemic Recovery

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Abstract

A climate-positive COVID-19 recovery can accelerate the energy transition away from fossil fuels. Yet, current assessments of recovery stimulus programs suggest that the world is more likely to take on a ‘dirty’ recovery path out of the pandemic than a ‘green’ one. Such a path will postpone climate action and entrench fossil fuel dependence. To change course, fossil fuel producers have to get on board. For this, cooperative international efforts mobilizing both fossil fuel consumers and producers need to promote ‘just transition’ policies that increase support for a green shift among fossil fuel companies and producing countries, including fossil fuel exporters. In turn, fossil fuel producers should leverage the opportunity of large stimulus packages to reduce their fossil fuel production dependence and increase their contribution to accelerating an energy transition through supply-side measures. A combination of ‘green’ investments and ‘just’ transition reforms could help enroll fossil fuel producers into a climate-friendly post-COVID recovery.

Keywords: COVID-19; natural resources; resource curse; carbon curse; climate change; renewable energy; green transition; just transition.

Key policy insights:

- Fossil fuel producers have mostly promoted ‘dirty’ rather than ‘green’ recovery paths from the COVID-19 pandemic
- A green recovery agenda requires a 'just' transition component to entice and support fossil fuel

producers

- Both demand and supply-side strategies are required to advance a ‘just transition’ agenda throughout the post-COVID 19 recovery
- The post-COVID-19 transition requires energy policies responding to the constraints of consumer and producer countries to address climate and equity challenges

1. Introduction

The COVID-19 pandemic has caused a health tragedy and major economic upheaval across the world. Confronted by alarming declines in economic growth rates and prospects of deep recession, governments have committed a total of at least \$12 trillion in fiscal measures to address the crisis (IMF, 2020). If economic recovery is a priority, such massive stimulus also offers the opportunity to address climate concerns, including through green investments and avoiding high-carbon lock-in (Mukanjari and Sterner, 2020). Promisingly, when looking back at previous responses, four of the five major global crises since the first oil shock in 1973 were followed by a decline in carbon emission *growth rates* – though total emissions continued to increase – the one exception being the massive coal-fired growth of China after the 1998 Asian crisis (Hanna et al., 2020; Peters et al., 2012). Financially, investments for a low-carbon future consistent with the Paris Agreement during the 2020-2024 period would only represent a small fraction (10%) of the current COVID-19 stimulus (Andrijevic et al., 2020). While there should thus be some hope for a green recovery, assessments of COVID recovery stimulus plans suggest that many governments will be following a ‘dirty’ rather than a ‘green’ path out of the pandemic (Carbon Brief, 2020; IISD, 2020; VividEconomics, 2020). This trajectory is not surprising given the challenges for fossil fuel consuming countries to shift energy sources (Fouquet, 2016), and

for fossil fuel-rich countries to escape the ‘carbon curse’ and transition out of carbon-intensive development paths (Chiroleu-Assouline et al., 2020).

As the window of opportunity for a green recovery is closing, we suggest that a ‘just transition’ needs to be a part of climate-friendly recovery plans to gain support from fossil fuel producers, especially among fossil fuel export dependent countries.¹ The COVID-19 recovery path will not only affect carbon emissions but will also impact the economy of fossil fuel producing countries (Tröster & Küblböck, 2020). Whereas a ‘dirty’ recovery path supporting carbon-intensive economic activities is expected – at least in the short term – to benefit fossil fuel producers, a ‘green’ path accelerating a transition towards a low-carbon future could hurt fossil fuel producers, and exporters in particular.

We therefore suggest that a green recovery path addressing the concerns of fossil fuel producers for a ‘just’ transition will be more widely adopted and have more long-lasting effects.² The gamut of a ‘just’ transition is broad, in terms of justice doctrines and ethics (Le Billon and Kristorffersen 2019; Muttitt & Kartha, 2020), social, political and economic rationales (Amstrong 2020), as well as policy dimensions and implications (Heffron & McCauley 2018). Investments into a ‘green and just’ recovery thus must not only “deliver jobs to get political traction” (Hanna et al., 2020: 178), but also seek to address the dependence of many producers on fossil fuel revenues (Ansari & Holz, 2020), and in this respect leverage the concerns that many already have regarding potential stranded assets and declining fossil fuel revenues.

Here, we sketch out some of the challenges that confront such a green and just recovery path, and outline some options to increase support among different types of fossil fuel producers. Following this introduction, section 2 outlines green and dirty recovery scenarios, section 3

discusses impacts on fossil fuel exporters, section 4 explains green recovery strategies for coal, oil, and natural gas producers, and section 5 concludes with potential policy suggestions.

2. Green and dirty recovery scenarios in a (post)COVID-19 world

The COVID-19 pandemic has exacerbated economic concerns among many fossil fuel producers as various levels of restriction on travel as well as fears of a protracted global recession reduced demand for their products (IEA, 2020). At the onset of the pandemic, major oil producers agreed on pragmatic cuts to sustain prices (OPEC, 2020a), yet refrained from engaging in a long-term climate-focused production management regime that could help them escape a ‘carbon curse’ locking them into a carbon-intensive development path and the ‘resource curse’ effects on their economies and institutions due to dependence on fossil fuel rents (Badeeb et al., 2017). By early 2021, prices had partly recovered from their fall in the first quarter of 2020, notably in anticipation of major recovery programs. Although the 7% drop in global fossil carbon emissions (2.4 billion tonnes CO₂e) during 2020 compared to the previous year was unprecedented (GCB, 2020), greenhouse gas emissions were expected to quickly rebound (Browning, 2021). This has prompted calls for greater domestic and international efforts to ‘recover better’, including through green investments (e.g., Obergassel et al., 2020; UN, 2020).

The energy industry has outlined several possible ‘green recovery’ scenarios. Wood Mackenzie (2020) outlined how a “European Green Deal, and the Green New Deal advocated by many Democrats in the US [would] slow the rise in oil use through tighter fuel efficiency standards and the electrification of transport”, while World Energy Council (2020)’s “Fast-forward” scenario includes “collaboration among oil producers to control supply [that] allows oil prices to rise. Against these prices, renewable energy becomes more competitive, especially

when renewable infrastructures can be built on a collaborative basis.” Yet, both of these scenarios came along with more pessimistic ones in which fossil-fuelled recovery predominates; a prospect so far backed by China’s already “higher than pre-pandemic” emission levels (Saiyid, 2021).

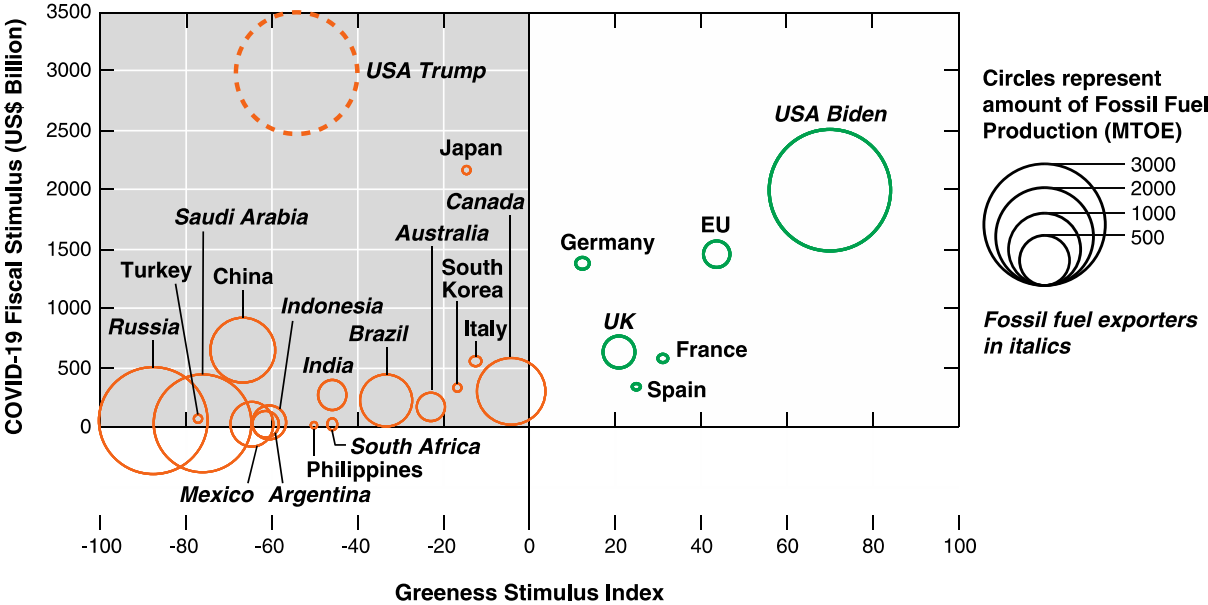
The drastic measures implemented in some countries to contain the contagion and their effects on emission reduction have also inspired calls for more decisive action on climate change, including ‘green’ economic recovery programs and a shift in consumer mindsets (Le Quéré et al., 2020). For example, the pandemic added pressure on financial regulators, banks, and wealth funds to further reconsider investments into fossil fuels in light of climate risks, COVID-related impacts, returns from renewables, and emerging green capital markets (BCBS, 2020; Gaulin & Le Billon, 2020; McInerney & Bunn, 2019).

Overall, the effects directly related to the pandemic itself – such as lockdowns and travel restrictions – are expected to have negligible impact on the long-term global temperature and only “a green stimulus recovery out of the post-COVID-19 economic crisis can set the world on track for keeping the long-term temperature goal of the Paris Agreement within sight” (Forster et al., 2020, p. 918). In line with this assessment, international agencies such as the International Monetary Fund (IMF) and the International Energy Association (IEA) have called for governments to promote growth based on clean energy through their economic stimulus plans (Birol, 2020; Steffen et al., 2020). Other initiatives such as the ‘Partners for Inclusive Green Economy’ have further called for equity-oriented policies emphasizing wellbeing, justice, green jobs, and the protection of the most vulnerable (PIGE, 2020).

Current assessments of the environmental impacts of recovery programs, however, suggest that most of the fiscal stimulus tends to support activities that will have negative

environmental impacts rather than positive ones. With the main exception of the European Union (and some EU member states) and the US, all stimulus packages among the 21 largest economies in the world – several of which are also major fossil fuel producers – will on average be negative when it comes to environmental impacts (Figure 1; VividEconomics, 2020).³ Looking more specifically at public spending by the G20 governments for the energy sector between January and November 2020, about US\$235 billion (55%) out of a total of US\$428 billion were committed for fossil fuels compared to US\$151 billion for clean energy and US\$42 billion for other energy (EPT, 2020).

Figure 1 – COVID-19 fiscal stimulus, Greeness Stimulus Index, and fossil fuel production



Notes: Fossil fuel production in million tons of oil equivalent (MTOE) in 2017 (EIA, 2020); Green Stimulus Index (GSI) as of 23 October 2020 (VividEconomics, 2020). Fossil fuel exporters in italics. The GSI takes a negative value “if stimulus support boosts harmful activities without regard to environmental targets or deregulates to roll back environmental conditions”, but a positive value “if stimulus support advances pro-environmental programmes or includes

conditions on environmental performance”. The GSI is scaled from -100 (all stimulus have ‘anti-environmental’ effects) to +100 (all stimulus have ‘pro-environmental’ effects).

Of particular concern are China and the US, the two leading consumers *and* producers of fossil fuels. China, the world’s largest fossil fuel consumer, relaxed environmental standards and delayed the adoption of an emissions trading scheme, even though its government plans to make the country ‘carbon neutral’ by 2060 (Mallapaty 2020). China informed OPEC in May 2020 that the country was recovering quickly from the pandemic and was hoping to soon regain its former energy consumption patterns (OPEC 2020b). China’s coal production also quickly regained its usual output of 10.5 million tons per day (NBSC, 2020), and permits for new coal plants surged in March 2020 with more capacity allowed than in all of 2019 (7,960 MW during March 2020 compared to 6,310 MW in 2019; see GEM, 2020a).

In the US, during the last year of the Trump administration, the Environmental Protection Agency loosened regulations on automobile emissions and fuel efficiency, and increased allowable polluting emissions from thermal power plants (Tollefson, 2020). The Trump administration’s energy sector stimulus package had included \$72 billion for fossil fuels compared to \$27 billion for clean energy (EPT, 2020). In contrast, the Biden administration and Congress approved a much greener general fiscal stimulus package than under his predecessor, with Biden stressing green transition jobs (Biden, 2020, 2021; Harvey, 2020).

Among other major fossil fuel producers, only Canada approaches a ‘neutral’ balance when it comes to supporting ‘green’ and ‘dirty’ stimulus, while Australia, Brazil, South Africa, India, and even more so Indonesia, Mexico, Saudi Arabia, and especially Russia have opted for ‘dirtier’ stimulus. In short, most fossil fuel producers among major economies, and especially exporters (with the exception of the US and UK), have so far promoted ‘dirty’ recoveries (see

Figure 1). This outcome, we suggest, partly reflects a failure to more forcefully associate ‘just’ transition efforts to the green recovery agenda.

3. Impacts on fossil fuel exporters

Whether major producer and consumer countries follow a green or dirty recovery path will not only have impacts on climate action, but also major revenue implications for fossil fuel-exporting countries.⁴ These implications will be particularly severe for fossil fuel export dependent countries, especially developing countries with limited financial reserves and higher production costs (e.g. Nigeria, Venezuela, see OECD, 2020). We note in this respect that these countries have largely been absent from discussions about recovery paths. Yet, they may be among the most affected by recovery choices and have the least ability to manage a ‘green transition’ that would undercut their fiscal revenues (see Tröster & Küblböck, 2020).

Fossil fuel sectors have long been affected by commodity booms and busts, causing major economic challenges for fossil fuel exporters (Cavalcanti et al., 2015). A post-COVID green path coupled with structural changes in the energy mix could result in a decline of their carbon-intensive sectors and export revenues. Based on previous commodity busts, such downturns often result in reduced capital inflows and currency depreciation, with governments responding through nationalizing fossil fuel assets, bailing out or heavily subsidizing fossil fuel companies, letting national companies go further into debt, or offering even better fiscal terms for foreign investors, jeopardizing future government revenues (Le Billon & Good, 2016). Beyond the energy sector itself, fossil fuel exporting countries may allow higher budget deficits and increased borrowing, with debt overhang resulting in revenue and employment losses as well as cuts in public services and welfare programs (Ghecham, 2020). These, in turn, can result in

painful fiscal adjustments, higher inflation, economic downturn, and increased risk of social strife (Brunnschweiler and Lujala, 2019). These processes are complex and context specific, requiring tailored policy interventions – as seen in the case of fossil fuel subsidy reforms in producing countries – and thus need to be gradual, well-timed, and fiscally compensated so that the attainment of environmental objectives does not come at the expense of deepened inequity and other negative impacts (Le Billon & Good, 2016; Rentschler & Bazilian, 2017).

So far, fossil fuel exporters have promoted a dirty recovery path. Such post-pandemic rebounding, however, may prove to be harmful even for exporters themselves, giving a false sense of security and leading fossil-fuel rich developing countries to invest even further into fossil fuel assets and related-sectors. Such entrenchment of fossil fuel sectors in their economy will increase their risk of becoming ‘stranded nations’ unable to pivot their economy when demand durably declines as low carbon sources come to dominate the energy mix or when their domestic reserves deplete (Manley et al., 2017; Nicholas, 2020). The Saudi-Russian oil price war before the COVID-19 pandemic already pointed to a fossil fuel industry beleaguered by climate policies, declining demand in advanced economies, and growing competition from renewables. Even major oil companies, such as BP and Shell, are considering new oil and gas investments as being high-risk and low-return, with a much sooner than planned shift into renewables (Sheppard, 2020). When combined with stranded-assets concerns, new investments – especially in coal and oil – are being increasingly questioned by financial investors and energy analysts in light of expected long-term decline in demand within some fossil fuel markets (e.g. ‘Net Zero by 2050’ road map, see IEA 2021).

4. Managing the recovery for climate and equity

There is a broad consensus among many organizations and researchers for a range of greener recovery approaches that would be beneficial for both climate and equity objectives, such as labor-intensive and low-carbon activities associated with a circular economy, renewable energy projects, and energy efficiency gains (Engström et al., 2020; Hepburn et al., 2020; Ibn-Mohammed et al., 2020; UNFCC 2020). Yet, as an OECD working paper notes, if “sufficiently large, timely, and properly designed green stimulus measures can generate economic growth, create jobs, and bring about environmental benefits...there are also trade-offs between competing economic, environmental, and social policy objectives, which underscores the importance of proper policy design” (Agrawala et al. 2020, p. 3). Some of the remaining challenges include how to incentivize a green recovery and enable a ‘just transition’ for those in the fossil fuel production sector (EPT, 2020; Kuzemko et al., 2020).

On 12 April 2020, nearly all major oil exporting countries agreed on a common ‘Declaration of Cooperation’ to slash 10% of global production, demonstrating the ability to act together and respond to a crisis, as demand and prices for oil collapsed and storage for surplus petroleum filled up (OPEC 2020a). Rather than reverting to unconstrained fossil fuel production and consumption once the pandemic is over, international negotiations that would mobilize the US, China, and OPEC+ governments should seek to keep cuts in place, and plan for a managed decline in fossil fuel use and production. Such negotiations could benefit from the momentum gained during the pandemic and lead to an international agreement on supply cuts (Newell & Simms, 2020), including public declarations of support for an energy transition by major fossil fuel consumers such as China (OPEC, 2020b). Such an agreement would help replace volatile oil prices and competition among producers with more stable longer-term prices and cooperative

behavior to reduce revenue volatility, an important dimension of the resource curse (Robinson et al., 2017).

Renewed international cooperation can and must play an important role in promoting a climate-friendly recovery reducing fossil fuel use while addressing the concerns caused by the decline in export earnings and stranded-assets in producing countries. There are many challenges in achieving an international agreement on a managed decline in fossil fuel production and to bring about a 'just transition' for low- and middle-income producing countries and their most vulnerable populations (see Lenferna, 2018; Newell & Mulvaney, 2013). Some of these challenges, such as potential income and job losses, can be addressed through better coordination between fossil fuel producers (e.g. OPEC+; on OPEC's challenges and resilience, see Van de Graff, 2020) and consumers (e.g. IEA, G20) by mobilizing both fossil fuel supply and demand policies to strengthen efforts to close the production gap in global climate efforts (Le Billon & Kristoffersen, 2019). To be widely adopted, a supply-side agreement could sustain fossil fuel producers' revenues for at least the coming two decades by increasing oil prices while reducing production (e.g., Collier & Venables, 2014), pivoting energy companies to greener sources, and vigorously promoting economic diversification. In turn, managed reductions in production, along with policies maintaining stable prices, compensation mechanisms, as well as trade and investment agreements facilitating economic diversification would not only incentivize fossil fuel producers to transition their economies away from fossil fuels (Albassam, 2015), but also motivate energy providers and consumers to adapt to this new energy regime (Shah et al., 2018). There is also the issue of nationalizing fossil fuel companies, an option considered by climate activists arguing for the public purchase of companies to close them down and compensate

workers (Sweeney, 2020) and by pro-fossil fuel governments seeking to secure future production (and political survival) through controlling companies (Mahdavi, 2020).

A just and green recovery can look very different for coal and the oil and gas sectors. Moreover, some countries, such as China, India, and Australia are coal majors while others, such as the US and Canada, are oil and gas-intensive. Thus, the path to a just and green recovery will vary between these sectors and countries.

4.1 Coal sector

Among fossil fuels, coal is the largest and least energy-efficient source of carbon emissions. From a supply-side perspective, its production is highly concentrated and generates relatively low rents, and several top exporters – such as Australia, Canada, and the US – have diversified economies that can withstand a stop in exports. From a demand-side, there is generally a stronger willingness among the public and some governments to cut coal, as seen with the ‘Powering Past Coal Alliance’ (2021) pledging to phase out coal power. Yet, cutting coal remains a challenge given the vast stock of coal power plants around the world and the sector's competitive costs compared to other energy sources. Moreover, as some coal power plants are retired, notably in Europe, new ones are being built, especially in developing countries. As the world’s largest coal producer and consumer (47% and 53% of global volume, respectively) and a key financier of coal-fired power plants overseas, China’s path for the coal sector will be critical (see Baxter and Zhe, 2020). So will be that of India, the world’s second major coal producer and consumer, and a possible candidate for a replay of the coal-fired growth seen in China following the 1998 Asian Crisis (Seetharaman, 2020).

Post-COVID recovery efforts could help move away from coal, but ‘just transition’ dimensions need to be considered. From a demand side, recovery packages could ban financing for new coal-fired power plants and cancel pre-construction agreements – as seen in some South and Southeast Asian countries (GEM, 2020b). Recovery packages could also provide financial incentives to shuttering existing coal-fired power plants, investing in energy efficiency, and prioritizing greener alternatives to maintain energy affordability. Interventions for a ‘just’ transition include retraining and retooling coal-fired power workers and companies, as well as supporting affected communities in terms of local tax revenues (Harrahill and Douglas, 2019). From a supply-side, policies need to include a mix of economic incentives resulting in the closure or abandonment of inefficient or subsidized coal mines, as recently seen in China (Blondeel and Van de Graaf, 2018). It also involves managed production decline and policies sustaining revenues through increased prices rather than increased volumes, especially in developing countries such as India, Indonesia, Mongolia, Mozambique, South Africa, and the Philippines (Mendelevitch et al., 2017). Mine closures and bans on new mines need to be counterbalanced with job diversification and community development (Green, 2018; Mendelevitch 2018). Linking both demand and supply sides, reforms are needed to reduce the influence of coal interests and collusion between coal producers and regulators, including to reduce overcapacity and stranded assets (He et al. 2020).

4.2 Oil and gas sectors

Oil is the second most likely candidate for supply cuts, as it tends to have higher production costs than coal and higher emissions than natural gas. Yet, oil remains hard to replace within the current oil-fueled transport system and has large production rents making it difficult for both

consumers and producers to switch to alternatives (Bridge and Le Billon, 2017). Unlike coal, oil rents represent more than 5% of GDP in many producing countries, most notably in the Middle East and North Africa, where it reaches an average of 15% of GDP, with up to 43% in Kuwait (World Bank, 2021). A green recovery involving reduced oil consumption would entail a major shock for exporter countries unless measures are taken on the production-side to sustain already weak prices.

On the demand side, policies should seek to reduce fossil fuel consumption subsidies and advance low-carbon transportation, including in producer countries, as well as an overall reduction in commuting and tourism-related travel. On the supply side, further cuts in production subsidies and more effective social movements against oil-related interests could make a dent (Temper et al., 2020). Some ‘oil-rich’ exporting countries, including Saudi Arabia, are also increasingly aware of the need to reduce their economic dependence on oil (Fattouh & Sen, 2020) and, like for coal, there should be support for efforts to eschew the oil-based extractivist model of development, redirect investment and jobs, and create alternate revenue base for oil-dependent jurisdictions and communities. Policies specific to natural gas include caution to the risk of carbon lock-in associated with the narrative of natural gas being a ‘transition fuel’. They also include the scaling up of the many bans or moratoriums against gas fracking motivated by additional socio-environmental impacts.

5. Conclusion and policy implications

The COVID-19 pandemic and associated recovery plans offer an opportunity to accelerate a green transition towards low-carbon energy systems. As we have suggested here, such a transition is more likely if fossil fuel producers are ‘on-board’ and seize this moment to ease

their own transition away from fossil fuel dependence. Some emerging coalitions could help with this agenda (e.g. ‘Net Zero Producers Forum’); they should be broadened to include key producing countries (e.g. US, China, OPEC+) and see their work supported by major international institutions (e.g. IFIs, IEA, UNFCCC) including through ‘just transition’ principles and policies (e.g. community participation, planned program implementation, adequate funding; see Conway, 2017; Green and Gamhir, 2020; He et al. 2020; Henry et al, 2020). From a supply-side, these include creating ‘just transition’ task forces and dedicated funds in producer countries, as seen in the case of Canada and Germany; phasing-out subsidies for fossil fuel production and transportation infrastructure; setting-up international coordination mechanisms for a managed decline in fossil fuel production; and pivoting fossil-fuel companies to other sectors, including renewables. From a demand-side, these include restricting the construction of new coal-fired (and gas-fired) power plants; managing demand growth through efficiency rather than additional supply; supporting the early retirement of coal-fired plants and replacement by low-carbon alternatives; and financing renewables rather than fossil fuel energy systems. A climate-positive COVID-19 recovery thus not only requires the greening of recovery packages in major consumer countries, but also strong and differentiated policies to help stakeholders – including workers, communities, companies, and governments – to cope with the social and economic challenges of the ‘carbon curse’ and more actively take in a green and just energy transition.

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¹ By ‘just transition’ we mean not only the need to address fossil fuel jobs at stake, revenues potentially lost by fossil fuel dependent communities and authorities, and issues of energy affordability (Heffron and McCauley 2018; Henry et al., 2020), but also to consider question of equity with regard to a managed production decline between different types of fossil fuel producers (see Le Billon and Kristoffersen, 2020).

² Although we stress the risk of having – yet again – some fossil fuel companies acting in bad faith, at times in collusion with their home government, in order to secure yet further subsidies in exchange for empty ‘green’ promises and false ‘climate friendly’ statements (Freese 2020; Kenner and Heede, 2021).

³ Out of the \$13 trillion in global fiscal stimulus policies for the 21 countries, \$4 trillion are categorized as having environmental impacts, including carbon emissions (VividEconomics, 2020). These stimulus policies mostly concern agriculture, energy, industry, transport, and waste. We note that while most stimulus packages are on average environmentally negative, the largest ones – with the exception of Japan – are environmentally positive (e.g. US and EU/EU member states).

⁴ Discussions and policy implications around a green recovery should also consider its impacts on low-carbon commodity producers (e.g. lithium, cobalt, or rare metals used in renewable energy production), as many challenges

remain to ensure positive equity and sustainability outcomes, including larger and more volatile revenues, biodiversity loss, adverse public health impacts, poor labour standards, and various types of commodity-related conflicts.