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Commentary
Navigating the Clean Energy Transition in the COVID-19 Crisis

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As of the spring of 2020, the COVID-19 pandemic has developed into a global public health emergency, in turn triggering a severe economic crisis. In response, governments worldwide have engaged in policy action at an unprecedented speed and scale, aiming at containing the virus, providing effective healthcare, and preventing economic collapse.

The COVID-19 crisis emerged at a time when climate and energy policies were experiencing an increased momentum. Besides substantial ratcheting up of policies, such as the European Union’s (EU) emissions trading system (ETS) and vehicle fleet emission standards, this momentum resulted in comprehensive new policy frameworks targeting carbon neutrality, including the “European Green Deal” in the EU and climate law frameworks on the national level across Europe. Many of these new frameworks were expected to be implemented in detail in 2020. In the United States (US), a proposed (though controversial) “Green New Deal” and other climate policy packages received much attention during the 2019–20 presidential primary elections, and in China, important decarbonization measures are being debated in preparation for the upcoming 14th five-year plan 2021–2025.

However, with the COVID-19 crisis, the macroeconomic and political circumstances under which these frameworks were conceived have drastically changed. Energy and climate policies may need to be adapted to the new circumstances, which will only gradually unfold as the pandemic progresses. Sweeping economic policy interventions are designed under time pressure, leaving little time to consider their climate impact. Moreover, well-established and planned energy policies are put into question, particularly those that burden industries that are badly affected by the current crisis. These steps could have severe unintended consequences for the low-carbon energy transition.

This commentary aims to help energy policymakers navigate through the crisis, focusing on policy frameworks targeting carbon-neutral energy systems. We differentiate among three different policy horizons (see Figure 1): (1) the short-term horizon (months), focusing on the immediate crisis response to the public health emergency and looming economic recession; (2) the mid-term horizon (years), focusing on stimulating economic recovery when the public health impact is contained, but the economic impact keeps shaping the macroeconomic environment; and (3) the long-term horizon (decades), focusing on how to make policies for the energy transition proof to similar shocks in the future, based on the lessons learned during the COVID-19 crisis.

Short-Term Horizon: Immediate Crisis Response

While the COVID-19 crisis unfolded during the first quarter of 2020, carbon emissions and air pollution decreased significantly. However, this development was driven by travel restrictions and the temporary shutdown of production facilities. Whether long-term emission pathways will be affected positively or negatively will depend on whether structural changes to the energy system are induced by a crisis response. The situation now and most likely in the coming months is and will probably be characterized by high uncertainty on the depth and
Different horizons of energy policy responses to the COVID-19 crisis

| Short-term horizon (months) | Mid-term horizon (years) | Long-term horizon (decades) |
|-----------------------------|--------------------------|-----------------------------|
| Immediate crisis response   | Economic recovery        | Making the energy transition shock proof |

Key challenges for energy policy makers
- Landscape of sweeping economic policy action under great uncertainty
- Need to prioritize which policy action has lasting impact on energy transition
- Uncertain macroeconomic and political conditions for sustaining the transition
- Manage impact of economic downturn, low interest rates, and low oil prices
- Multi-decade transition will see further shocks, need to make it “shock proof”
- In crises: flexible policies risking low effectiveness, rigid policies risking dismantling

Recommendations to navigate the energy transition
1. Safeguard established and new energy transition policy frameworks, temporal waivers instead of structural change
2. Actively address challenge of oil price for emerging alternative fuel technologies like electric vehicles
3. Prepare comprehensive policies for the mid-term horizon, contingency planning
4. Seize opportunity of low interest rates for deploying capital-intensive renewables and energy efficiency solutions
5. Use energy transition frameworks as roadmap for green stimulus packages
6. In longer term, enact adaptive policies that mitigate the risks of low effectiveness or dismantling in case of shocks
7. Use hybrid instruments like taxes with environmental integrity mechanism, or cap-and-trade systems with price collar
8. Consider policy designs with automatic relief for those most affected by crisis

Summary of key challenges and principles for policy responses in different time horizons different t

the duration of the public health crisis and on the scale of its economic implications. In this chaotic situation, the key challenges for energy policymakers are to (1) decide which energy policies to modify in the short term and (2) prioritize which policy actions could make a difference for the clean energy transition in the long term.

First, a key priority should be to safeguard the new frameworks aiming to bring the energy transition to the next level and to stand firm against pushback on regulatory structures. Vested interests are lining up, demanding the abolition of energy taxes and industry regulations and the abandonment of frameworks, such as the European Green Deal. Policymakers should especially defend the new policy frameworks, given their crucial importance for structural changes of the energy system and potential for ratcheting up.3 Losing time for re-establishing policy frameworks is dangerous given the rapidly diminishing carbon budget. In contrast, temporary waivers or postponements could be helpful in some cases to ease the burden for industry, for instance, concerning the new very stringent fleet emission standards in the EU (as increasing the share of electric vehicles is hard when car sales drop abruptly). While the US lacks an ambitious climate policy framework at the federal level, sector-specific policies are in place. The COVID-19 crisis could be exploited for a roll-back of some of these policies, such as the national fuel efficiency standards and the provision to issue (stricter) state-level standards granted to California in 2013. To defend these policies (for instance, in Congressional Review), temporary waivers, targeted at unbearable economic burdens of the pandemic, may be an option. In sum, for temporary burdens, the appropriate responses are temporary reliefs, not structural changes to the policy frameworks.

Second, in times of sweeping crisis responses, it is tempting to jump on the bandwagon to push the green agenda in short-term relief packages. However, energy policymakers should instead prioritize what could meaningfully contribute to structural changes. Initial relief packages rightly focus on preventing economic hardship and bankruptcies. Pushing for small “green wins” now could distract from actions that make a real difference for the energy transition in the longer term. This is particularly relevant when bailing out struggling businesses in high-carbon sectors. Diligent going-concern forecasts should take into account current and planned energy policies, and activities that are clearly incompatible with the Paris Agreement (e.g., tar sands development) should be excluded. However, detailed climate conditionalities for bailouts (e.g., demanding biofuel quotas or a strategic plan for reducing emissions from airlines) are impractical. Bailout decisions primarily have to consider the societal value of uninterrupted service and of safeguarding jobs. Decisions often have to be made within days, and the duration of the crisis—and, thus, of potential prescriptions—remains highly uncertain. Instead, policymakers should consider increasing their leverage to shape business activities for Paris Agreement-compatible pathways in the future, for instance, by taking equity stakes or securing a say in the future strategy of bailed-out corporations.

Mid-Term Horizon: Stimulating Economic Recovery
In the mid-term horizon (coming years), the key challenge for policymakers will be to sustain the clean energy transition in a new macroeconomic and political environment. While it is still uncertain exactly how this environment will take shape, the direction of change for key macroeconomic factors seems foreseeable. Many countries will have to
address a major economic downturn, characterized by restructuring industries, high unemployment, and lower demand for goods and services (including energy). In the European ETS, these expectations have already led to a slump in the price of carbon emission certificates (see Figure 2A). Accordingly, initial relief packages will most likely be followed by large stimulus and recovery packages. Moreover, monetary policy interventions will probably keep overnight interest rates at very low levels (see Figure 2B) or reduce them even further, leading to low general interest rates in many major economies since February. Finally, oil prices could remain structurally low (see Figure 2C), as the effect of declining global demand is amplified by the supply-side shock of the breakup of OPEC+.

First, energy policy should seize the opportunity provided by low interest rates to accelerate private investments in low-carbon technologies. The levelized cost of electricity from renewable energy sources strongly depends on the general interest rate level, and low interest rates improve their competitiveness vis-à-vis fossil fuel technologies. In many countries, the period of economic recovery could offer the chance for a multi-gigawatt rollout of utility-scale solar photovoltaic, onshore wind, and offshore wind plants at low cost. The same is true for other capital-intensive solutions, such as energy-efficient building upgrades. With plenty of construction work involved, such investments also allow ramping up employment, increasing the appeal of these measures for economic recovery. Importantly though, in some countries, low-carbon financing conditions might also worsen in response to COVID-19, particularly in developing countries and some highly indebted industrialized nations. International policymakers should therefore consider how to use multilateral development banks and their de-risking instruments even more, to ensure that a low interest rate environment can accelerate the deployment of mature low-carbon technologies worldwide.

Second, massive public spending—as expected in large stimulus packages—could offer a unique opportunity for the energy transition. In the past, stimulus packages have not only given limited consideration to societal benefits of investments but also led to adverse outcomes for the energy transition. For instance, the Chinese stimulus package after the global financial crisis of 2008–2009 fostered high-carbon-intensive infrastructure, such as coal power plants. Such high-carbon stimuli must not be repeated. In contrast, new policy frameworks toward carbon-neutral energy systems, such as the European Green Deal, offer a roadmap for societally beneficial stimulus investments, ensuring that capital is allocated in line with a Paris-compatible pathway. Importantly, mature technologies, such as solar photovoltaic power and wind power, can easily rely on private finance in a low-interest-rate environment (see above) and “only” need a favorable regulatory environment, not necessarily more public money. In contrast, public spending is essential for nascent clean energy technologies that still lack the scale required for massive cost reduction. This is
because developing these technologies is very risky, implying that securing private finance is challenging. To give just two examples, Europe could bring electrolyzers for green hydrogen to mass market maturity, and the United States could deploy carbon capture and storage at enough sites to drastically reduce the technology’s abatement cost. To finance new technologies at scale, using green state investment banks and multilaterals, such as the European Investment Bank, would also allow leveraging existing expertise in how to bring promising technologies to the market in an efficient manner, catalyzing private capital.

Third, if oil prices remain structurally low, the relative cost position of alternative energy sources may deteriorate sizably. On the one hand, low oil prices can offer opportunities for fossil fuel subsidy reforms in some developing countries. In order to prevent rollbacks of these reforms in case of rising future oil prices, subsidy reform should be coupled with policies accelerating the transition toward non-fossil-fuel-based technologies. On the other hand, low oil prices could pose major challenges to the deployment of less mature low-carbon technologies that compete with oil-based solutions. One example is the diffusion of electric vehicles (EVs) that just started in many countries. Some automakers have invested heavily to transform their business toward EVs, while other automakers have not done so. But the strategies of the former may not play out when low oil prices substantially reduce EVs’ competitiveness. In order to not put the clean energy transition in the transportation sector at risk and avoid to indirectly “rewarding the laggards,” additional policy intervention might be needed.

Long-Term Horizon: Making the Energy Transition Shock-Proof

Finally, the COVID-19 crisis has once again made it clear that large economic shocks can have important impacts on the energy transition. The challenge is how to account for such shocks when designing transition policies for the long term. The energy transition will take decades, and there will be further shocks. To date, mechanisms to make these policies shock-proof have rarely been considered in policy design. However, the current crisis emphasizes that assuming permanent stability is a delusion, and policies that rely on it ignore two significant risks. (1) If policy incentives depend on economic conditions, downturns could severely hamper investments in clean technologies (see EU-ETS above). (2) If policy incentives do not adapt to economic conditions and targets are ambitious, policies might be dismantled when political priorities shift and the economy is under pressure. Both risks could endanger the low-carbon energy transition or at least delay it considerably.

On a general level, we recommend making policies adaptive to shocks and crises through designs and mechanisms that reduce the above-mentioned risks. One example for policies that should be made adaptive in that sense are carbon pricing policies. Carbon pricing is bound to become a central pillar of the energy transition in many jurisdictions. Nonetheless, the highly transparent price signal and problematic political economy of carbon pricing policies also invite pushback more than other policies do. A way forward for making carbon pricing adaptive involves hybrid instruments. These could either be taxes with an environmental integrity mechanism, as recently proposed for the United States, or cap-and-trade programs with a price collar, as recently proposed for Germany. What both share in common is that prices automatically adjust to new circumstances—and the degree of adjustment reflects both environmental and political concerns associated with potential shocks.

These examples illustrate the core idea of shock-proof policies: to strike a balance between the two aforementioned risks, ensuring that in case of shocks, the policy is neither weakened in a way that endangers the transition (e.g., by undermining green investors’ confidence) nor dismantled entirely. While the principle is clear, how to put it in action in different contexts remains an area for further research. For carbon pricing, for instance, an important question is how to use revenues from carbon taxes or cap-and-trade auctions to ease the burden of the poorest households—which will typically be hit hardest by shocks—in a fair way. Because answering such questions will require new research, rethinking the design of long-term policies should start immediately.

Conclusion

What does the COVID-19 crisis imply for the energy transition required to keep global warming at bay? Many commentators and advocates have been quick to provide answers and ready-made solutions. We take a step back and pursue a different approach. In our view, structuring the challenges that arise in different time horizons and offering guiding principles for responses are most useful at this stage. We recommend three principles: (1) avoid overreacting in the short term. (2) Make use of new opportunities for the energy transition in the mid-term. (3) Develop new policy designs that can withstand future shocks. While now the policy attention is rightfully focused on the public health crisis and mitigating its immediate effects, it is important to navigate the new situation without jeopardizing the imperative clean energy transition.

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