

Science and Technology Opportunities to Green the COVID-19 Recovery

Frank Rijsberman¹

¹Global Green Growth Institute, 19th Floor, Jeongdong Bldng., Jung-gu, Seoul 04518, Korea

The year 2020 was expected to be focused on accelerating climate action to fight the climate crisis, but instead has become dominated by the COVID-19 pandemic. While the pandemic has brought unprecedented health and economic challenges worldwide, the climate crisis has not taken any time off. As governments across the globe mobilize more than USD10 trillion to recover from COVID-19, this huge investment is also the final opportunity to decarbonize the economy. Green growth investments must now focus on delivering green jobs as well as reducing GHG emissions. Fortunately, science and technology offer many opportunities to green the recovery, if policy obstacles can be overcome, and finance can be mobilized. Investment in renewable energy, particularly solar and wind, has become commercially attractive, but is not yet adopted fast enough in many countries. Energy storage challenges need a combination of batteries, pumped storage and investments in more resilient, smarter grids. Development of clean hydrogen will be a large factor, but further into the future. Energy efficiency improvements are a huge opportunity, technically feasible and in many cases economically and financially attractive, but not implemented fast enough, both in buildings, and industry. Heating and cooling needs are growing rapidly and need rapid adoption of district heating/cooling systems, re-using waste heat. A high priority to electrify and decarbonize the economy is transportation. Electric mobility in buses, cars, motorbikes and eventually shipping is close to disrupting the market, ending the era of the internal combustion engine. A key priority is also managing waste in a circular economy approach, as well as use of final waste streams to produce energy, both biogas/bio-CNG and coal-replacing refuse-derived-fuel. While cities are key to reducing emissions, rural areas in developing countries are most vulnerable to climate change impacts. Climate resilience can be advanced through solar-powered irrigation and climate smart agriculture generally, as well as nature-based solution, ranging from avoided deforestation to rehabilitation of forests, mangroves and other ecosystems. The green investments listed generate more new green jobs than their brown, conventional equivalents. Renewable energy generation, energy efficiency building retrofits, solar irrigation and ecosystem rehabilitation are all labor intensive, and do not require costly specialized labor. Green New Deals, that is, green growth strategies



emphasizing employment and climate action, are a high priority not only for the EU and ROK, but for developing and emerging economies as well.

KEYWORDS

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