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Which levers to decarbonize the global economy by 2030?

Climate change is a global threat. It entails policy foresight and international cooperation. **Earth's average air temperature has increased by about 1.1 °C since 1900, with over 50% of the increase occurring in the last fifty years.** For decades, the global energy and electricity mixes have been based mainly upon fossil fuels and characterized by a certain inertia. The global carbon budget informs on the residual timing to limit the global warming to 1.5°C by 2100. **The planet has consumed around 86% of its carbon budget**. This means that, the residual carbon budget in a 1.5°C scenario is only 14%. According to the IPCC (Intergovernmental Panel on Climate Change), this represents less than 15 years of CO2 worldwide emissions (based on 2019 global CO2 emissions). **The climate clock has triggered the countdown for immediate climate action**.

The current energy crisis caused by the war in Ukraine not only implies to find new alternatives in terms of energy supply but also to accelerate the decarbonization of the global economy.

This energy transition is specific since objectives go beyond simply adding a new energy layer to existing energies. Indeed, without a significant modification of consumption and production patterns, the planet's carbon budget will be exceeded. The challenge is to decarbonize the economy by relying on all climate change stakeholders, and not solely energy firms. Obviously, a coherent first step is to reduce drastically the use of coal (around 27% of the global energy mix and around 14% of EU electricity mix) which emits twice more CO2 than gas. However, a perfect and uniform global energy policy on a short-term horizon is a pledge. On a theoretical level, a "perfect energy policy" should be decarbonized, respective of consumers purchasing power, industrially competitive, and secure in terms of energy supply. Not surprisingly, on a short and medium-term horizon, trade-offs must be made between these five objectives.

The post-lockdown economic recovery plans (2300 billion USD at the global scale) offered an opportunity to strengthen the resilience of the global economy to prevent future climate crises, but the opportunity was not seized. **Only 2% (380 billion USD) of the recovery investments were targeted to decarbonized** projects with an increasing gap between the "Global North" and the "Global South" climate policies. These projects have engaged only 20% of the required investments to decarbonize economies. The plans relied mainly on coal as a response to the strong rebound of industrial electricity consumption.

It is regrettable, since green recovery plans strengthen the resilience of economies by reducing the frequency and impacts of future climate damages.

Even countries with significant levels of climate-friendly investments have maintained "brown" public investments (in either budgetary or fiscal expenses).

Reinforcing attenuation and engaging adaptation of the global economy are the subject of a consensus; but how to proceed? **There are three guiding principles to follow.**

- **First, the energy transition and the fight against global warming are everyone's business.** It implies a shift of supply chains for most companies with prior corresponding carbon's profiles evaluations. However, the concept of carbon neutrality is relevant on scopes 1, 2 and 3 of carbon emissions. Therefore, cooperation with client industries to impact the industrial ecosystem (including public-private partnerships) is crucial.
- **Secondly, efficient energy and climate policies must consider the heterogeneity of national contexts** before defining corresponding roadmaps with a preferred decentralized approach. The latter is enabled by the increased digitalization of the energy sector.
- **Thirdly, in health and climate matters, it is necessary to adopt a global perspective and use all efficient levers simultaneously.**

Our ambition is to show a third way beyond the binary options of carbonized growth *versus* economic growth decline. We believe in a selective growth approach based notably upon high energy productivity, decarbonized technologies, and green infrastructures reducing the carbon footprint. The objective of climate policies should be to decouple economic growth from CO_2 emissions (we refer to absolute decoupling when emissions fall in absolute terms even as the economy continues to grow) rather than promoting economic decline (termed "degrowth") as the sole remedy to global warming. Believing in a trade-off between economic growth and climate action is not fatal.

Besides energy sobriety and efficiency, several levers should be combined by governments, firms, network operators, financial institutions, and consumers to reach climate neutrality without opposing economic growth and climate action.

- **The first lever is carbon pricing** to give an explicit financial cost to climate damages. Is it the miracle remedy? No. As there is geopolitics of energy there is geopolitics of climate change. The existence of an historical climate debt has been leading the COP summits to a deadlock for many years in the negotiating process between industrial countries and developing countries. Therefore, a global uniform price for carbon is illusory.

There are several carbon markets or carbon taxes in the world, but the results are deceptive. Even if around 60% of world GDP is concerned by a certain form of carbon pricing, the price is below 15 USD for 70% of the covered CO2 emissions. Scientific consensus considers that the price should be at a minimum of 40 USD.

The case of the EU ETS (EU carbon market) illustrates the complexity to rely on the carbon price as a long-term market signal for decarbonized investments. For many years, the price was even too low to incite quitting coal. Carbon pricing is not the alpha and omega to save the climate, it is necessary but not sufficient.

To remedy these market shortfalls, many firms have implemented internal carbon pricing to protect themselves against the risks associated with future carbon prices as well as being in line with existing or future stricter climate regulation. Carbon neutrality becomes a transversal strategic axis for these companies.

Which are the benefits of an internal carbon pricing? The proceeds of this tax are used to **stimulate R&D or identify new growth opportunities**. Such internal pricing mechanism orientates investments towards low carbon technologies. For these firms, it is a means to get prepared to future decarbonization policies. This represents a competitive advantage, since these policies affect the costs related to energy sourcing, technical systems, and operational processes.

- **The second lever is climate finance**. Financial institutions (banks and financial asset firms) must be part of the climate solution. Not only green investments will limit global warming, but they will also enhance bank's carbon footprint and mitigate the corresponding climate risk. This climate risk is a financial risk for banks (either directly or through financed entities). Indeed, a bank that will face asset depreciations will lose value and by a domino effect may impact other banks. This systemic risk is a potential threat for the overall financial stability.

How to reduce the exposure to climate risk? We believe that financial regulators should develop new methodologies (such as climate stress-tests, climate reporting, higher capital requirements for coal projects) to incent financial institutions to align their investments with carbon neutrality. In terms of climate investments, private finance should complement public funding in a context of high national debt rates. As mentioned, **fair and progressive carbon pricing combined with climate finance through incentive regulation will strengthen banks' resilience to climate shocks.**

- **The third lever is fiscal**. An ecological tax is efficient and fair if it neither impacts households 'purchasing power nor industrial competitiveness. It must be part of a global fiscal reform and be compensated by the corresponding decrease of other taxes for a neutral impact. Such tax should be implemented in an environmental logic not a budgetary one. Naturally, these tax revenues must be used to fund decarbonized projects: green mobility, green infrastructures, green technologies, thermal building renovation.

- **The fourth lever is on the production side**. Green technologies such as hydrogen and carbon storage capacities represent not only efficient decarbonization technologies, but also pave the way to new business opportunities. Given the cost of hydrogen electrolysis and hydrogen station networks, the challenge of green hydrogen is more financial and industrial than technical. The development of a new generation of smaller and more competitive fuel cells and the development of transportation and storage infrastructures will contribute to the development of green hydrogen with synergies along national hydrogen value networks.

For implementing these decarbonization strategies, opportunity and feasibility studies entail investments appraisal, training, organizational diagnoses, corporate governance analysis tools, and change management. We have a long track record in terms of low-carbon business models and transformation projects at an international scale. We offer innovative methods to manage disruptive sectorial changes with a tailored approach for each client. **Our teams can intervene in a variety of projects: evaluate green tech start-ups in the frame of a hydrogen strategies, upskill staff for coping to new energy and climate challenges, restructure management processes, and implement value chain decarbonization strategies.**

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Nextcontinent's Energy Transition Community is a place for sharing best practices and experience feedback in the energy sector. ***We work closely with local and international customers for projects all around the world providing insight to strategy and support for measurable and long-lasting results.***

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