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Why the Promise of “Green Growth” Would be Illusory Without a Climate Protection Agreement to Go With it

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Despite the pledge to implement a globally binding climate agreement by 2020, the international community still has a long way to go in protecting the climate effectively. Unless we move beyond the voluntary commitments that a number of countries have brought forth, the average global temperature will rise by at least 3.5°C by the end of the century. Nobody knows exactly what the consequences of such a temperature increase would be, but we can no longer rule out major risks. It therefore comes as no surprise that people are losing faith in climate diplomacy, and many now hope that the climate problem can be solved even without an international climate agreement.

Many envisage that this will be achieved through “green growth”, in a way that would not constrain economic growth, but might even promote it. The climate problem, so the advocates of green growth believe, would then be solved automatically – without having to go down the long path of international negotiations. This hope is based on three assumptions. First of all, it is assumed that fossil fuels will soon run out. Secondly, that renewables will soon become cheaper than fossil fuels due to learning-by-doing. Thirdly, that drastic improvements in energy efficiency can be achieved at low economic cost. These three assumptions are highly problematic, however. As we will argue below, a regulatory framework for climate policy is absolutely

essential. Green growth cannot replace a framework of this kind. But it can help achieve it.

A high oil price does not guarantee a decoupling of emissions from growth

Some observers hope that the shortage of coal, oil and gas will force the global economy to switch to low-carbon technologies, primarily renewables. However, when oil becomes more scarce and the price of oil rises, investment in new oil fields will also rise, and extraction from oil sands and even the liquefaction of coal as a substitute for gas will become profitable. The increase in the price of oil over the last five years has also pushed up the price of gas. As a result, coal has once again become a financially attractive option for power generation that can compete with gas. This means that emissions have tended to rise, and that one unit of primary energy produced today entails more carbon emissions than was the case five years ago. The hope that a rising oil price would lead to a decoupling of economic growth and emissions is therefore illusory, as coal is a substitute for oil, and humankind still has around 15,000 billion tonnes of fossil fuel reserves left in the ground, especially coal. A global coal renaissance has already begun. The sooner the age of cheap oil comes to an end, the more rapidly the global economy will be propelled into a coal renaissance.

The potential cost reduction of renewables is not sufficient to displace fossil fuels

Some advocates of green growth take the view that renewable energy may quickly become less expensive than coal, gas and oil. It would then simply no longer make economic sense to use fossil fuels, so they argue. It is true that significant cost reductions have been achieved with renewables in recent years. However, these energy sources currently account for only slightly less than 13 % of global primary energy consumption. About half of this involves the use of traditional biomass. The question is not whether the costs of renewable energies are falling. This cannot be denied, given the evident learning curves. However, almost all the scenarios calculated suggest that the potential future reduction in costs associated with renewable energies will not be sufficient to stem the use of fossil fuels rapidly enough to automatically lead to the achievement of ambitious climate protection targets.

Increased energy efficiency is more than offset by economic growth

Now it would also be possible to reduce global emissions by drastically increasing energy efficiency. An energy efficiency revolution, so it is argued, would already pay dividends at today's prices and costs. It is correct to point out that energy efficiency has improved worldwide over the last twenty years: between 1990 and 2010, it improved by an average of around 1.6 % per annum. It is also correct to point out that many investments in energy efficiency, such as building insulation or the promotion of public transport, are already profitable today. However, in the past these increases in energy efficiency have regularly been more than offset by economic growth. This means they have made only a limited contribution toward reducing the demand for fossil fuels.

The illusion of the green deus ex machina

The hope that a green deus ex machina might solve the climate problem – by allowing growth promotion measures to generate a welcome side effect, even though they were not actually designed to protect the climate – is therefore an illusion. Green growth alone is

not an appropriate substitute for international climate negotiations. It can, however, help to complement a process to negotiate a reasonable regulatory framework within which an ambitious international climate regime can succeed.

Climate change negotiations involve resource rents

In the long term, international climate governance must limit the use of the atmosphere as a disposal space for CO₂. Fossil resources could then only be used on a limited scale. This means that the assets held by the owners of these resources would lose value. If a carbon tax or emissions trading were to impose such a limit on the use of the atmosphere as a disposal space, this would create a climate rent, and states would compete to obtain a share of it. The climate negotiations are so difficult for two reasons. First of all they are being blocked by those who fear they will lose their resource rents. Secondly, those countries that would profit in the long term from international climate protection wish to receive their share of the climate rent, e.g. in the form of a favourable allocation of emissions rights under a global emissions trading regime. In this setting there is always an incentive for countries to behave as free riders. If they all do so, there will be no global agreement. We should not conclude from this analysis that international climate diplomacy is necessarily doomed to failure. It will, however, be necessary to work on several levels simultaneously in order to reduce mitigation costs and alleviate conflicts over allocation.

Burdens must be shared and sanctions defined under international law

At the international level we will need to define the framework for global climate governance under international law. This will include principles for burden sharing and support for developing countries, as well as the possibility of sanctions against countries engaging in free-riding behaviour. It will also be necessary to take the annual 100 billion US dollars pledged by industrialised nations for climate measures in developing countries and emerging countries from 2020 on, and deploy these funds to effectively transform the energy

systems of the recipient countries. This could be achieved through technology policy instruments, such as subsidies for renewable energy technologies or carbon capture and sequestration, and demonstration projects. Forest protection will also play an important role as a low-cost mitigation option. The promotion of so-called nationally appropriate mitigation actions (NAMAs), for instance by the Green Climate Fund, may be a helpful way of reducing emissions in accordance with national development goals.

Regional emissions trading systems can reduce the costs of climate change mitigation

At the regional level, newly emerging emissions trading systems could be designed such that they can be linked with each other at a later date. The European Emissions Trading System should be enhanced by including all sectors – which also means transport and buildings. Given the emissions trading systems planned in California, in China and in other OECD states such as Australia and South Korea, linking of such regional systems is a promising option for reducing the costs of climate change mitigation. At the suggestion of Germany and California, a platform – the International Carbon Action Partnership (ICAP) initiative – has been established to pave the way for such links through dialogue at the operational level.

Removing national subsidies for fossil fuels is an appropriate step

At the national level subsidies for fossil fuels – which after all totalled some 400 billion US dollars worldwide in 2010 – could be removed, and used to promote learning renewable energy technologies. The OECD has calculated that removing these subsidies could lead to a reduction in global greenhouse gases of up to 10 % by 2050. Germany's successful energy transformation is demonstrating that prosperity and emission growth can be decoupled.

Local infrastructure planning offers scope for future emissions reductions

If existing energy and transport infrastructures are used over their normal lifetime, almost

500 billion tonnes of CO₂ will be emitted over the next 50 years. In Africa and Asia in particular, additional infrastructure will be constructed on a large scale over the coming years. Designing low carbon infrastructure is crucial, because this will define the scope for emission reductions for several decades. Cities and municipalities are the key players here. They can reduce emissions drastically through public transport, urban planning and the reorganisation of building infrastructure. Air pollution at the local level is also very important. According to the most recent estimates, measures to reduce local atmospheric pollution might make a major contribution toward stabilising the global mean temperature.

Conclusion: Green growth is necessary, but does not replace the need for a global climate agreement

Measures at the national, regional and local levels can make international negotiations easier by reducing mitigation costs. Similarly, national, regional and local climate change policy can only succeed if a global agreement that puts a price on using the atmosphere, and allows for a fair allocation of and trade in emission permits, is finally reached. Within this regulatory framework, green growth can play an important role in reconciling prosperity and climate policies. It can also help improve the situation of the roughly 1.5 billion people around the world without access to electricity, and the 2.7 billion forced to spend their lives without clean sources of energy for heating and cooking.

Ambitious climate protection targets such as the 2°C target can still be achieved by 2020 even with a delay – albeit at significantly higher cost. Anticipating that there will be an international climate agreement in the future, investors today are already including future carbon prices in their investment calculations, at least as a possibility. The global climate agreement will arrive late, but – assuming the future brings wise and realistic climate policies – it will not arrive too late to avert dangerous climate change. ■