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Hacking for the climate

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Hacking for the climate

Bonn, 13 November 2017. While policy-makers and civil society representatives have been gathering in Bonn for the UN Climate Change Conference since last week, hackers have been meeting at the same time for a blockchain hackathon. Working under the hashtag #Hack4Climate, they are pursuing the same objective as the climate experts, namely to push ahead with climate change mitigation efforts. However, they intend to achieve this goal with specific technical solutions rather than diplomacy. Their experiments revolve around blockchain technology.

Blockchain is a sophisticated technology that can be used to create a kind of register of popular information or transactions. The information within this register can be viewed by anyone, but cannot be retrospectively manipulated by third parties. The most well-known application for this technology is digital currency Bitcoin, which uses blockchain to enable secure monetary transactions to be carried out locally without involving a trusted authority such as a central bank. There are now plans to use this decentralised trust machine to promote climate goals where trust between states, local administrations and companies can be limited.

The US withdrawal from the Paris Climate Agreement has reignited the debate about which incentives are effective in reducing carbon emissions, including those that transcend national borders. After all, we wish to prevent energy-intensive production being relocated to areas in which carbon emissions are particularly cost-effective. A powerful lever in this endeavour, border carbon adjustment, has so far failed to achieve the desired impact, not least because measuring the carbon footprint of producers along their value chain is an administrative nightmare. This is where blockchain technology and the Internet of Things inject fresh hope into the debate about reliable and automated carbon accounting.

Individual actors are already demonstrating how blockchain can be used in trade flows. Shipping company Maersk Line, for example, is employing blockchain in order to conduct transactions with the logistics companies, ports and customs authorities in their chain in real time. The Chinese Government also intends to use blockchain to ensure transparency and create confidence in its Belt and Road Initia-

tive, a new vision for the Silk Road.

However, all the hype surrounding blockchain technology can also raise false hopes. If the seemingly limitless possibilities of the virtual blockchain world are to have an impact in the real world, then we first need to suitably bridge the gap between bits and atoms. Sensor networks within the Internet of Things can automatically register carbon accounting figures in the blockchain. This wealth of data allows automated consistency checks to be carried out, making fraud more difficult.

There is also a need to review the legal framework for these new possibilities. In international trade law, the environmental clause under GATT Article XX can be interpreted as permitting border carbon adjustment under certain conditions. Anyone wishing to translate blockchain-based carbon accounting into trade policy practice has to clarify not only technical issues, but also open legal questions, for example, concerning relevant product differentiation criteria, rules of origin, etc.

Nonetheless, we should not allow ourselves to be deterred by these challenges, as blockchain offers a tremendous amount of potential. Climate-friendly trade policy would be merely the first step in a far greater revolution in global trade. Will we even need customs facilities in future if we have access to reliable manufacturing data about every single product? By using smart contracts to program trade policy directly into the blockchain, we could do away with several customs procedures altogether. This would make it possible to provide trade incentives for the achievement of climate objectives and other development goals, such as blockchain-documented compliance with labour and social standards.

One thing is certain: we cannot expect every idea from the Bonn climate hackathon to lead directly to a revolution. If we are to develop innovative climate markets, then in addition to creative technical ideas, we need support from legislators and global cooperation by state and non-state actors. We cannot afford to miss the opportunity to work at interdisciplinary level on a common vision. This requires us to use our imagination and remain open to new solutions, of which blockchain could be one.