Financing: the missing link in leveraging blockchain and green tech

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The Paris Agreement (2016), is explicit in highlighting the importance of climate technologies for a sustainable future, stating in Article 10, that "Parties share a long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce greenhouse gas emissions." Providing its full-hearted support, it makes a strong case for further action: "Accelerating, encouraging and enabling innovation is critical for an effective, long-term global response to climate change and promoting economic growth and sustainable development."

The trends have however been counter-cyclical to this shared vision. In fact, US venture capital funding for climate technologies, after experiencing strong growth in the early aughts has been declining since 2011. Astonishingly, Silicon Valley has become green tech's Death Valley, as almost all of the 150 renewable energy start-ups founded there, over the past decade, have shut down. In fact, a mere 2.5% - 6% of US venture capital funding goes into the financing of climate technologies (UNFCC Report, 2017).

The main reason for the tepid investment is that there is limited commercial profitability and lukewarm demand from investors to finance these highly innovative climate-tech start-ups in need of long-term patient capital. Clean tech companies' positive externalities are not being rewarded by the market, as investors prefer mature technologies to early-stage ones. The market failure in financing climate technology companies can be attributed to five prevalent factors, including green tech's: (i) high-risk profile; (ii) capital intensive nature; (iii) patient capital demand; (iv) lack of collateral (intellectual property intensive); and (iv) high-opportunity costs attributed to the high-profitability and shorter returns of competing technology investments. For example, software development offers overall faster returns and lower research and development costs.

Besides the critical financing gap facing clean tech companies, another significant challenge lies in getting these innovations out of the lab and into the market. A greater concerted effort is needed to provide just-in-time technical advice to improve the commercialization of green startups.

These start-ups can potentially contribute to climate action and to the overall public good. From a societal perspective, the opportunity-cost of not funding them is dire and may be earth-shattering, confirming the disaster climate-change scenarios, and missing out on important potentially mitigating solutions. At the COP-21 in 2015, twenty-four nations and the European Commission made a "mission innovation commitment" to double research and development investments in climate technologies to USD $30 billion by 2020.

Overall, this broad agreement confirms both the importance of green tech, and the opportunities that it provides to tackle climate change. However, as the data above shows, these companies are suffering from continuous and substantial

underinvestment and the public at large is missing out on potentially earth-saving solutions.

To address this grave challenge, a more decisive and concerted public effort is needed in leveraging digital innovations, particularly blockchain.

Blockchain is a powerful tool that can serve to significantly improve the transparency, accountability and traceability of green gas house emissions. It supports companies to provide more accurate, reliable, standardized, and readily available data on carbon emissions. Given that blockchain works as a decentralized network of independent nodes that provide instant authentication, the verification of real-time data, immutable data records and efficiency and timeliness, it can be catalyzed through smart contracts to better calculate, track and report on the reduction of carbon footprint across the entire value chain.

Importantly, blockchain technologies can transform the individual efforts of companies into a concerted networked effort, while clearly pinpointing the contributions that individual actors make toward the societal goal of reducing the carbon footprint. It is a propitious convergence, whereby the spirit of competition and carbon market-based incentives dovetail into a win-win situation for all.

Clean technology startups play a critical role in this process, by developing blockchain enabled platforms that bring together all stakeholders, including companies, government and citizens. The decentralized approach of blockchain, provides both breadth and depth, as it engages and enables everyone to participate on the calculation, tracking and reporting of reductions in greenhouse gas emissions along the entire supply chain (including manufactures, suppliers, distributors and consumers.) Thus, **innovations in blockchain technologies can become a powerful enabler for collective action to fight climate change.**

Recognizing the unique value of clean technology startups in this process is of essence. Investors are in fact, starting to take notice of their unique value.

Key questions remain, in taking green tech to the next level:

- How can blockchain technologies best serve to overcome the tragedy of the commons and ***incentivize different actors*** to reduce their carbon footprint and consider the overall societal impact of their actions?
- What financial and technical assistance tools can be deployed to ***deepen our support for blockchain innovations*** that in turn, increase the transparency and accountability of carbon finance programs?
- How can we ***accelerate blockchain-based solutions*** that establish a network between suppliers and consumers and move beyond the individual, to include all societal stakeholders (industry, distributors and citizens)?
- How can we ***boost the role of blockchain technology*** in finance for climate actions (i.e. green bonds and alternative finance mechanisms)?
- How can UN agencies, the European Commission and national governments further strengthen their collaboration to support a ***green innovation ecosystem*** and improve financing for green technology startups and SMEs?

Don’t add another missing link and join us on November 11 -13 in moving forward this important agenda at the “Convergence Global Blockchain Congress!”