ANNEX IV - Financing the Anthropocene - The European Green Deal (EGD) and Future Shocks

New forms of financial engineering to hedge, fund, coordinate and manage unchecked risks and unmet opportunities

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The European Green Deal (EGD) represents the main European political agenda to transform the entire EU and build a more sustainable future. With a total budget of over one trillion euros over the next decade, the programme aims to transition Europe from a fossil-based economy, reducing net greenhouse gas emissions by 55% by 2030 and making it the first climate-neutral region in the world by 2050. This ambitious plan comprises ten areas and significantly overlaps with the global UN SDGs.

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Table: The ten areas of the EGD

The political directive referred to as the European Green Deal Investment Plan (EGDIP) or Sustainable Europe Investment Plan (SEIP) breaks down this one trillion euro budget as follows: 528 billion euros directly from the EU budget, including 25 billion euros from the European Emissions Trading System (ETS), 279 billion euros from public-private joint ventures and 114 billion euros co-financed through member states’ national budgets. The 143 billion euro Just Transition Mechanism (JTM) is reserved for regions most affected by this transition in order to compensate for the social and economic costs associated with the transformation. In addition, the EGD Sustainable Finance Agenda includes an EU taxonomy for green investments, benchmarking, ranking and accounting directives, new green bond standards, specific investments in sustainable projects, including public infrastructure, R&D, innovation and digitalisation, SME transition and reskilling labor, a green-supporting factor and a new Non-Financial Reporting Directive (NFRD). The overall Sustainable Europe Investment Plan is outlined in the figure below:
Figure: The Sustainable Europe Investment Plan (SEIP)

Following a traditional model, we would mainly tax the current value chain, borrow money from the capital market and solicit private investment or philanthropic donations in order to finance a greener, fairer future. None of these endeavours is mistaken, but they simply lack the speed and scale that our common agenda demands. The conversion rate from a fossil economy to a circular decarbonised one is simply too low. And the risks and uncertainty are too high for the private sector to embark on that agenda fully.\textsuperscript{vi}

Traditional finance likewise represents a kind of end-of-pipe strategy, where money is redistributed as required, but the current system is kept in place. The economy grows first, then we take a certain amount of money (through tax or fees) from the value chain, and finally, we distribute it to social and ecological projects.\textsuperscript{vii}

However, taxation and borrowing before spending are a myth. The cost of damage control already exceeds impact investment, foreign direct investments, remittance payments and any official development aid in total. A shadow economy representing a quarter to a third of the total global economy is currently stabilising this economy, pulling it in the wrong direction.\textsuperscript{viii}

Given that up to 85% of our entire value chain is still based on some sort of fossil energy, an additional wind park will create a windfall profit but leave the underlying dynamic of that value chain untouched. In such a scenario, investors are sitting on a carbon bubble that causes multiple lock-in effects.

Inherent instability of the financial system

Shadow economy pulling in the wrong direction
Volume of subsidies and taxation sterilising each other

Carbon bubble, with no alternatives on offer for how to manage our economy

Entropic sector with ongoing disaster management

**Figure: Major lock-in effects preventing us from achieving a more sustainable common future**

There are two general approaches to financing the EGD and future asymmetric shocks. We can attempt to repair and re-regulate the existing financial system, but keep its architecture untouched, or we can start a digital currency system in parallel. Using systems thinking, we propose an outside the box solution to generate the funds needed to finance our common future in Europe: And this is happening already:

Over 50 leading central banks are experimenting with central bank digital currencies (CBDCs). They could provide wholesale (inter-banking) facilities or retail components (for private individuals) with a digital cash-like wallet. This could include non-refundable loans and changing the central bank mandate to go beyond simply meeting the inflation target.

Over 2,500 private cryptocurrencies with a market capitalisation of over 1.2 trillion USD (2021) are operating already. They function mainly as a speculative tool and remain unregulated. Examples include SkyLedger, Ripple, Ethereum and Diem.

There are over 3,500 regional and local currency systems around the world, some of which have operated for decades or even centuries. Examples include time dollars, local exchange trading systems (LETS) and barter systems. None of them is relevant from a macroeconomic point of view, but as sandbox approaches, they all demonstrate the need for additional liquidity to fund social and environmental projects.

These empirical findings, already supported by examples from all over the world, reflect a trend towards parallelisation and digitalisation (tokenisation) of the monetary system in one way or another. These funds would be earmarked and used exclusively to finance EGD-related projects in the first place. This electronic liquidity would run through monetary channels other than the ones in the conventional system. We would then have a supplementary green Euro operating in parallel to the conventional monetary system generating the required liquidity and leverage to finance the Anthropocene era. Research on optional parallel currency systems has shown multiple positive second-round effects.

For example, this new technology (DLT) could be used to create and channel targeted financial liquidity to support and enhance the Transition Mechanism (JTM), reserved for EU regions most affected. Within a microcredit banking system, it could be used to transfer additional liquidity to millions of EU citizens to overcome poverty and hunger. Any green Euro spent and invested through these green; parallel channels has the potential to enhance education, R & D within less than 18 months. The electronic format would prevent corruption and fraud, as each transaction is transparent and (semi-) public. Once the currency was eligible to pay taxes, communal offices would have additional liquidity to rebuild public infrastructures such as kindergartens, public parks, communal hospitals and public libraries. And the thousands of non-governmental organizations (NGOs) would finally receive the funding they need to do their jobs properly. This targeted added liquidity would enhance circular and more regional
economies and SMEs and allow access to universal health care that would otherwise never happen. It would be used to reduce resource depletion, clean up air or protect natural reserves, avoiding the negative effects on our planet and common health. We would eventually tap into the untapped potential of millions of unemployed individuals through the creation of new green jobs, thereby unleashing the creativity of all EU citizens. In fact, it would generate numerous new financial engineering, securitisations and blended finance for institutional investors, impact investing, private, public partnerships and VCPE, among others.

What would be the effects on the conventional economy? The additionally added liquidity would not hurt or harm the conventional economy. In fact, the opposite would be true. Corporate and state planning, production and price level would become more robust and reliable with a longer-term vision. Furthermore, it would stabilize the cyclical economy of booms and busts. Despite arguments to the contrary, we need much more financialization (Finance/GDP) in the EU. However, it must be designed in a more democratic and humane manner to protect the planet while increasing wealth and welfare for all of us. If there is a single most important variable beyond technology, governance, behavioural changes and demography to change the world, it is a parallel, digital monetary system.

In fact, a redesign of the financial system does not solve all our problems, but all our problems can more easily be addressed by it. This, or a very similar mechanism, is the missing link to achieving greater Humanity, Wealth, Peace, a greener Planet and better global partnerships. The following graph illustrates this:
Financing the Anthropocene: A parallel digital currency system will reduce the shadow economy and negative spillovers and increase the overall wealth in the EU, supporting and enhancing the EGD and future shocks.

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iv The JTM itself comprises three pillars: 1. The Just Transition Fund (7.5 billion euros), which will be leveraged and matched by member state budgets to achieve 50 billion in grants; 2. the dedicated InvestEU scheme (45 billion euros); 3. a public sector loan facility leveraged by the European Investment Bank (EIB) and backed by the EU budget (30 billion euros), which will mainly provide concessional loans to the public sector.


vii Any co-financing scenario faces a two-tier dilemma: in a situation of market equilibrium, where allocation is already Pareto optimal, any intervention or redistribution will generate suboptimal results. Alternatively, if not all resources in a market are yet optimally allocated, then any intervention
will lead to even greater deterioration of the existing equilibrium. In either scenario, the benefits for the private sector of redistributing liquidity towards the commons will be disproportionally low.


Besides reduced use of cash and an increased demand for liquidity to finance additional projects, retail CBDCs and their intermediaries have been prompted by Facebook’s Diem initiative to use their own money. On the one hand, techfins like Grab, Ant, Alipay, Mercator and Gojek already represent a 2.5 trillion USD market (2021), with 20% of their revenue being made through payments and product distribution. Core banking, on the other hand, represents a three trillion USD market globally (2021), with traditional credit facilities only representing about 5% of their revenue.


