

A global consumer-driven low-carbon investment fund for development and adaptation

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A successful response to climate change offers the greatest public health opportunity of the century, but intervention is needed to prevent catastrophic climate change and to realise this tantalising possibility. A global investment fund for development, R&D, and low-carbon investments can succeed, with long-term dividends used for adaptation to the climate. It can be funded by numerous small voluntarily paid levies on purchases and transactions, encouraged by global icons, and paid by multinational companies that benefit from good publicity and growing markets. A grassroots response can start arbitrarily small, but aspire to include all transactions.

Hurricanes, floods, landslides, and droughts are a regular reminder of the risks of climate change (www.reliefweb.int), but a transition from fossil-fuels to low-carbon technologies could be the greatest health opportunity of this century [1,2].

A rapid transition will cost up to 3% of world GDP [3], and ongoing investments will be needed to combat the long-term consequences of climate change [4,5]. This is possible through an energy tax or levy, but needs governments or industry to implement it [4,5].

An alternative is a voluntarily paid levy. A world-wide social movement led by multi-national brands and high-profile individuals can drive the levy. If invested in stocks and other forms of low-carbon technology ownership, it will accelerate a transition from fossil fuel use, while also providing longer-term investment profits to pay for ongoing adaptation to climate change in the post-carbon era [5].

Voluntary payments can be collected by any large bank, investment fund, insurance company, or an existing climate fund, allowing the scheme to start arbitrarily small and grow through global grassroots support to encompass a sizeable proportion of all transactions.

Present climate funds focus on mitigation and adaptation in developing countries and are financed by donations from willing governments (www.climatefundupdate.org). Most funding is allocated as grants or loans, offering limited direct returns on investments. As a result, there are concerns about a lack of “replenishment policies” for longer-term funding.

The need for a low-carbon transition in presently developed countries is not addressed by existing funds, and there is limited support for research to make a low-carbon transition easier. Population growth, that threatens to derail any efforts at adaptation and mitigation, is often forgotten.

A voluntarily funded low-carbon investment fund for adaptation

Investments with longer-term dividends are essential. Profits from ownership of investments (equity) can provide long-term revenues in a post-carbon era for adaptation projects. Investments can then give twice – firstly by stimulating the area in which they are invested, and secondly through the proceeds from those investments.

Existing funds rely on large donations from governments, but there is potential to collect greater revenues through direct voluntary payments from participating consumers and businesses.

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Financing through voluntary payments avoids the need for complex agreements between governments with different priorities. An individual's response to climate change depends on their aversion to risk and feeling of responsibility for others, including future generations. My view will differ from yours. On an aggregated level, different countries have different resources, different challenges, and as a result, different priorities. Voluntary payments overcome these difficulties.

With voluntary payments no new laws need to be passed, and contributions will be from those who can afford them. Global economies will be stimulated by low carbon investments and protected by adaptation measures such as improved flood defences, benefiting everyone.

With a voluntary scheme only those that choose to pay, need to pay. Poorer countries cannot be expected to sacrifice development for long-term environmental concerns. Similarly, it is unrealistic to expect poor people in developed countries to reduce their living standards without recompense.

How it will work

A politically independent body must co-ordinate activities. Mechanisms need establishing for collecting revenues and selecting investments that will pay long-term dividends to meet adaptation needs. This could be through existing funds, but with a shift of emphasis toward retaining ownership of investments. New ways of globally collecting voluntary contributions also need establishing.

Voluntary contributions can be collected through: direct donations, indirect payments of a levy on purchases, government taxation, or linked investment funds. The means of collection is critical. Small regular contributions are easily absorbed into everyday living expenses, and payment must not cause inconvenience. Experience will determine the most effective approach.

Direct payments can be collected during payment of bills, checking a box to trigger an automatic donation. Global icons can endorse the use of dedicated credit cards that automatically allocate a portion of expenditure to the levy. Individuals might choose the proportion of donations going to adaptation, investment, and development, with defaults of e.g. half of investments to the country where payment is made, and 20% of global investments used for development.

Indirect payments can be made by purchasing suitably branded products, whose producers pass on the additional costs to consumers. Labelling analogous to a Fairtrade mark can indicate participating products, encouraging consumers to select them. Participation could involve an entire brand or a new, differentiated product, and can include energy, drinks, clothing, and even particular retailers. Price increases of around 1% to 2% would be difficult to distinguish from natural price variations.

Governments could collect tax-free donations prior to payment of salaries. It can be agreed that a proportion (e.g. 50%) is used in the region where the levy is paid and the rest for global low-carbon investment and development. Individuals who did not wish to participate could receive a small rebate. It might be arranged that over a long time-period that investors get a portion back.

Alternative investment products can offer some return on invested "donations". This leverages private finance but is motivated by philanthropy more than personal gain, and may increase overall investments enough to benefit all parties. Research can establish the optimal blend of personal investment versus philanthropic contributions needed to maximise total investments. The optimum payback to maximise investment might be all profits, or none.

A voluntary levy would usually be between 1% and 2% of purchase price. It could be higher for ethically minded companies to reflect their environmental impact [5]. If an average of 1% were paid on all products and services it would equate to 1% GDP, or roughly \$1Tn globally, which is about 100 times more than is presently pledged to climate funds. If a levy were only paid by the largest and most profitable companies then it would still raise a substantial proportion of this.

Growing low-carbon investments will increase the value of existing stock, and incentivise new participants to join the market. Meanwhile, legal threats and falling competitiveness will reduce confidence in fossil-fuel investments [5,6], further accelerating the shift to low-carbon technologies through greater private sector investment.

Development is as important as adaptation

Climate change can be combated through a rapid replacement of fossil-fuel use to minimise carbon emissions, and adaptation projects to protect against the consequences of existing emissions. But these efforts will be futile if populations continue to grow, increasing energy demands and encouraging development in unsuitable locations. The underlying causes of disasters must be addressed, as must the underlying causes of fossil-fuel use.

The greatest underlying cause of natural disasters is inappropriate development [7]. This can be due to inadequate planning regulations or building standards, but poorly constructed accommodation in vulnerable areas is more often driven by poverty. This is true in all countries, but more so in developing ones. Efforts to minimise climate-change damage will be futile unless accompanied by suitable (and sustainable) development.

Sustainable populations are also essential if conflict and environmental catastrophe are to be avoided [8,9]. The sustainable development goals (SDGs) are primarily intended to improve global standards of living and of education, but sustainable populations and a greater resilience to climate change are also expected [10,11]. Education is especially beneficial [10,11], and should be prioritised. Funding and governance must ensure the goals are achieved.

Technological developments are also essential, and must be accelerated. There are insufficient good low-carbon investment opportunities, limiting large-scale investments [12]. We must maximise the efficiency of energy production, storage, conversion, and use, including industrial applications such as chemical engineering [13]. To improve on nature we must look in regimes that are inaccessible to naturally evolved life, such as high (or low) temperatures, pressures, stresses, and irradiation. Financing must allow energy research to be more innovative and ambitious. If energy were cheap enough then fossil fuel extraction would be uneconomical. If good low-carbon investment opportunities were plentiful enough there would be greater divestment from fossil fuel [12].

“Renewable” energy must be as sustainable as possible, and this includes agriculture [2]. Geological scale coverage is required [14] to capture enough of the sun’s energy, either directly as light, or indirectly through wind, wave, and precipitation. This requires sustainable farming practices and sustainably built facilities that produce more energy than is needed to build and maintain them. These vast, widely distributed activities must not detrimentally influence the climate.

There are concerns over intermittent excesses of low-carbon e.g. solar energy, but surpluses need not go to waste. Human ingenuity can find uses for intermittent excesses of energy. Energy can now

be stored in many forms – heat, cold, chemical, gravitational, and it may be possible to do better. For example, new technologies might use energy surpluses to extract carbon dioxide from emissions or the atmosphere for use in agriculture or petrochemicals, or for other chemical production [13].

A global lead

There is a huge marketing opportunity for the global brands who lead in paying the levy. A global demonstration of overwhelming public support would incentivise other companies to follow. Multinational brands such as Coca Cola, Google, and Microsoft might lead, as could credit card companies, energy companies, insurance companies, or governments. The most satisfactory and effective ways of collecting a voluntarily paid levy must be explored.

An organisation such as an existing climate or investment fund must co-ordinate the allocation of investments and collection of a levy. It must ensure that investments are as rewarding as possible, that high calibre low-carbon research is encouraged, and that developments to meet the sustainable development goals are supported. Investments offering potential long-term profits should be given at least equal priority to those that leverage private finance. Work must determine the optimum investment strategy to minimise climate change damage through both mitigation and adaptation.

Climate change poses a threat requiring global action. If tackled through sustainable development and global investment in low-carbon energy, it can be the catalyst for a peaceful, equitable, and sustainable future.

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