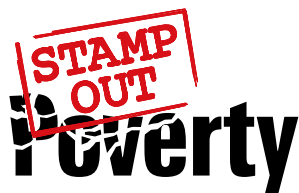


The Climate Damages Tax

A guide to what it is
and how it works



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Stamp Out Poverty

Stamp Out Poverty was founded in 2006, in the UK, to campaign for new and additional sources of finance to fight poverty and climate change at home and abroad, helping to create the political space for initiatives such as UNITAID, which has to date generated more than \$3bn for HIV/AIDS, TB and malaria treatments around the world, with more than half the revenue raised from aviation levies. Stamp Out Poverty has led work internationally for the financial transactions tax (FTT), which has seen unilateral implementation by France (2012) and Italy (2013), with France currently devoting 50% of the €1.5bn of annual revenue from the FTT to development and climate change spending. In April 2018, Stamp Out Poverty helped launch the Climate Damages Tax campaign at an event in central London attended by ministers, advisers and civil society representatives from climate vulnerable countries.

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Preface

Climate change is a war. A category five hurricane releases energy equivalent to 10,000 times the nuclear bomb dropped on Hiroshima in 1945. Those countries on the path of hurricanes and cyclones and submerging coasts are on the front line. In the space of a few hours after making landfall at 9pm on September 18th, 2017, Hurricane Maria caused destruction costing \$1.4 billion,¹ 226% of Dominica's GDP. On that day, climate change crashed out of theoretical construct into the lived reality of Dominicans; pulling the future into the present with a roar that echoed around the globe.

A few days after Maria hit Dominica, I was asked by the Prime Minister and Government to help coordinate and lead the economic recovery. I saw first hand the enormous strength and resolve of the Dominican people. It makes me weep a little every time I am reminded of it. And the global community responded warmly. International development partners helped me establish the Climate Resilient Execution Agency of Dominica and put up close to 80% of Dominica's GDP in grant and concessional loan funding.

Yet despite this new awareness and action, the huge conferences and heartfelt generosity – humanity continues to avoid the key question. What lies at the heart of the problem we now face? Unless we respond to this, we cannot embrace a better direction of travel. The answer lies not in science, nor institutions. It is in the most straightforward interplay of morality and economics: **those who gain from the activities that created climate change are not the ones directly suffering its consequences.** Beyond its inherent injustice, this is the equation that propels climate change. Solutions that do not solve that equation have failed. Climate change is not a freak of nature. It is human-made, as human-made as power and greed. If the consequences of climate change were felt disproportionately by those who have contributed to it, it would have stopped long ago. That is the cold tap of fact.

Nationally, countries accept the 'polluter pays' principle – it is a golden nexus of morality, economics, and environmental policy. Presently, however, it is the battered and suffering in the paths of hurricanes and cyclones – not the polluter – who pays. Take the insurance model championed by many industrialised countries and agencies. It is a form of inter-temporal risk transfer. Island states on the front line are being asked to take on additional insurance against the future losses and damage of a climate change caused by others. Surely our main response to human-made climate change cannot be to try and make it easier for those on the receiving end to pay for it? Imagine if the only people who had to pay for car insurance were those who were hit by other people, and those that did the hitting paid nothing. And you will recall that the communities paying for climate change are mostly the poor, who live in the world's most precarious places. This is untenable, indefensible and reprehensible. We need a different approach than the traditional insurance model.

I call upon countries and the international institutions to read this report and help **establish a meaningful loss and damage funding facility** paid into by those who have contributed to climate change, with payouts that go quickly to those who suffer the direct consequences of climate disasters. This report sets out an economically sensible approach through additional taxation on extraction activities.

We will only stop climate change by making those who contribute to it, pay for it. More talk, more conferences, more insurance where the victims are asked to pay by installment, will not do the job. We need to end the mismatch between those who gain and those who lose. This is what an international community serious about halting climate change must do. From the countries on the front line, whose very existence is threatened; from the vanguard of those protecting our common earth; we urge you to do this. And we hope your feet are swift. We cannot afford to wait.

Avinash Persaud was Special Advisor to the Prime Minister of Dominica on the recovery from Hurricane Maria and is Special Envoy to the Prime Minister of Barbados on Investment and Finance

¹ All \$ amounts in this report refer to USD unless otherwise stated

Executive Summary

Introduction

A day of reckoning is coming. There is a price for heating up the planet and to date the fossil fuel industry have fled the table without paying the bill. When climate change has brought devastation, poorest countries and communities have been left to pay. The Climate Damages Tax (CDT) proposal set out in this paper can help rectify this situation by making the fossil fuel industry pay for their damage.

The problem

Already, at only 1°C of global warming, climate change fuelled events include extreme heat waves, rampant forest fires, devastating droughts, catastrophic floods, increasingly destructive hurricanes, typhoons and cyclones and sea level rise stealing people's homes. All are examples of loss and damage from climate change - impacts that go beyond what people and ecosystems can adapt to. The worst often occur in the poorest countries who have done the least to contribute to emissions.

During the 2017 hurricane season, the small island of Dominica in the Caribbean was struck by Hurricane Maria. In one night, its agricultural sector was completely wiped out: 100% of banana plantations were wrecked, as well as vast amounts of livestock and farm equipment. 98% of Dominica's buildings were damaged - including every school and medical centre - and 50% of homes were destroyed. The population faced no running water, no power and limited communication services, with many roads washed away. Hurricane Maria caused loss and damage in the region of \$1.4bn - 226% of Dominica's GDP. Insurance paid out only \$19 million, 1.5% of the total cost. Suffering from the worst crisis in its history, it was forced to go cap in hand to the international community.

A solution

The CDT proposal is to set up a funding facility for loss and damage so that countries and communities faced with this kind of devastation have recourse to speedy and substantial financial assistance, funded by the fossil fuel industry through a tax on the coal, oil and gas they extract.

Vulnerable countries need finance of at least \$50 billion a year by 2022 increasing to approximately \$300 billion a year by 2030 to help them cope with projected loss and damage in coming years. This is over and above the current inadequate level of funding for adaptation.

Funding for loss and damage and just transition

We propose that part of the CDT revenue is allocated to loss and damage, to pay for the devastating storms, droughts and sea level rise that vulnerable communities are facing, and a proportion is remitted back to the country where the oil, coal or gas was extracted to provide funds to support a just transition from fossil fuels to renewable energy, helping low income communities and workers shift to carbon-free jobs, energy and transport. In this way, countries where fossil fuel extraction takes place will derive revenue from the CDT.

Phasing out fossil fuels

Fossil fuels must be phased out by the middle of the century: the IPCC 1.5°C report from October 2018 shows this is essential to avoid catastrophic climate change. The CDT will assist by putting a price on carbon and incentivising a shift to renewables. It must be embedded within an overall plan to phase out fossil fuels, which will require a host of measures. Accordingly, the CDT should complement, and not replace, other regulations and carbon prices.

The fossil fuel industry

Fossil fuels are the largest source of climate pollution in the world, responsible for 91% of global industrial greenhouse gases in 2015, and about 70% of all anthropogenic emissions. 100 fossil fuel companies and other entities are responsible for over half of all emissions since the start of the industrial revolution. A huge acceleration in the extraction of fossil fuels has doubled their contribution to climate change since 1988.

During this time, some of the largest fossil fuel companies have run campaigns to spread disinformation and misunderstanding about climate science to confuse and deceive, lobbying politicians not to take action so

sustaining and boosting their profits. In 2017, just six of the biggest oil companies made combined profits of approximately \$133 billion.

The proposal

The Climate Damages Tax (CDT) is a charge on the extraction of each tonne of coal, barrel of oil, or cubic litre of gas, calculated at a consistent rate globally based on how much climate pollution (CO₂e) is embedded within the fossil fuel. Working with existing systems of payment, fossil fuel companies, who already pay royalties (or similar) to the states where they operate, will pay an extra amount on the volume they extract to the solidarity facility for loss and damage – managed, we propose, by the already existing United Nations' Green Climate Fund (GCF). International law and precedents embodying the Polluter Pays principle, such as apply to oil and nuclear pollution, serve as working examples of similar facilities.

We recommend that the CDT is introduced in 2021 at a low initial rate of \$5 per tonne of CO₂e, increasing by \$5 per tonne each year until 2030 to \$50 a tonne, with the expectation that it is increased at the rate of \$10 per tonne annually after that to reach \$250 a tonne by 2050. If implemented as we recommend, the CDT would raise in the region of \$210 billion in its first year. Increasing the rate of the tax, as we propose, will incentivise the phasing out of fossil fuels by the middle of the century, and help keep CDT revenue for loss and damage at roughly \$300 billion a year over this period.

It is extremely important to recognise fairness, or equity, in how the CDT is applied, as richer countries have the *capacity* to pay more. Their historical emissions have caused the climate change to date, so they have the *responsibility* to contribute more as well. In order to incorporate equity into the CDT we propose 50% of the revenue generated from fossil fuels extracted in high income countries is contributed to the loss and damage solidarity facility, whereas low income countries would retain all revenue generated from fossil fuels extracted in their countries, with a sliding scale between the two.

Implementation

At the UN climate talks in 2013 (COP19), the Warsaw International Mechanism for Loss and Damage (the WIM) was established with a mandate to provide loss and damage finance, which was reinforced in the Paris Agreement in 2015. To date there has been no finance provided for loss and damage (L&D) through the WIM. At the climate negotiations in 2019 (COP25), the WIM is due to be reviewed, providing an important opportunity to set up a financial arm to provide funds for L&D affected countries and communities. This is our preferred route of introduction of the Climate Damages Tax, however, a solidarity facility for loss and damage could also be initiated through intergovernmental agreement by a smaller grouping of cooperating states.

Conclusion

It is high time the fossil fuel industry paid for the climate damage its products cause. It is high time for a solidarity facility for loss and damage so vulnerable countries have recourse to substantial and speedily delivered funds when they need them most. It is high time the fossil fuel industry paid a tax to assist communities with the transition to fossil-free jobs, energy and transport. This is why the Climate Damages Tax is an idea whose time has come. We urge concerned citizens, organisations and countries to join us to make it happen.

Introduction

The Climate Damages Tax (CDT) addresses the injustice of climate change impacting the most vulnerable people without the resources to cope with it, at the same time that the industries responsible for causing climate change make hundreds of billions of dollars in profit every year.

The CDT is an equitable fossil fuel extraction charge, levied on each tonne of coal, barrel of oil or cubic litre of gas produced, to pay for the loss and damage caused to developing countries and poor communities by the impacts from climate change that arise when these products are burnt. CDT revenue would, as well, pay for communities to transition away from fossil fuels and towards a renewable future and low carbon jobs, energy and transport.

The call for a CDT is an unequivocal signal to decision makers, the media and the public at large that a day of reckoning is coming for the fossil fuel industry. Their historical and current responsibility for the world's carbon footprint and the consequences to the lives of ordinary people of the climate change they have caused, is a bill that needs to be brought to their door.

The CDT will contribute to the global phase out of fossil fuels by 2050. It will make their use more expensive; as the tax rate increases over time the CDT provides an economic incentive for a shift to renewable energy. The carbon price alone will not be enough to phase out fossil fuels, so complementary policies will still be essential, hence the CDT should be in addition to national policies to reduce emissions. Ideally, we would already have stopped using fossil fuels, but since this will take time and people are currently suffering the effects of loss and damage, the CDT is a means to generate much-needed additional funds in the interim to benefit vulnerable populations facing catastrophic climate impacts.

Implementing the CDT will add costs to the fossil fuel industry's bottom line encouraging the shift from carbon. More than this, campaigning for the CDT publically links the fossil fuel sector to the climate damage we are witnessing on an all too regular basis – pressuring it to change its business model or risk its reputation with consumers and its influence over governments.

Section 1 of the paper addresses loss and damage, why money is needed and how much, giving the example of Dominica after Hurricane Maria. After this, it describes why the fossil fuel industry is the root cause of the problem and how it has funded climate denial over many years to prevent governments taking action.

Section 2 describes the legal basis and precedents of the Climate Damages Tax and the mechanics of how tax revenue would be captured before setting out how funds would be allocated by way of the funding facility for loss and damage, going on to set out more detail on loss and damage and just transition spending.

Section 3 examines the CDT proposal in greater detail, particularly *tax rate*, *equity* and *revenue potential*.

Section 4 addresses implementation of the CDT focusing on the UN path.

Section 5 answers most frequently asked questions, specifically issues with *insurance* as a response to loss and damage, *incidence* – assessing who will carry the tax burden and, lastly, the CDT in relation to *other carbon taxes*.

1 The Problem

1.1 Describing loss and damage

Loss and damage is when the impacts of climate change go beyond what is possible to *adapt* to. It emerged within the UN climate talks in response to the growing severity of climate impacts. In 2013, following the devastation of typhoon Haiyan – then the strongest storm to make landfall – which wiped out the Tacloban region of the Philippines, the UN established the Warsaw International Mechanism for Loss and Damage (the WIM) to improve understanding of loss and damage impacts, enhance coordination and response and, most importantly, help mobilise finance for the people affected. Two years later, in the Paris Climate Agreement, loss and damage was recognised as a third pillar for required finance, alongside *mitigation* (measures to reduce emissions of greenhouse gases) and *adaptation* (actions to help communities and ecosystems adapt to changing climate conditions).

Already, at only 1°C of global warming, climate change fuelled events include extreme heat waves, devastating droughts, catastrophic floods, increasingly destructive hurricanes, typhoons and cyclones² and rising sea levels stealing land. These impacts have been most damaging in the poorest countries who have done the least to contribute to emissions. Climate-vulnerable countries are, in many instances, clearly experiencing impacts that fall outside what is possible to adapt to – and hence are already facing loss and damage from climate change,³ including Dominica in 2017, described below.

1.11 Dominica after Hurricane Maria

Dominica is an island in the Caribbean, home to 72,000 people. On the night of 18th September 2017, Hurricane Maria tore through the island, the first category 5 hurricane to make landfall. Winds of 160 mph reduced the island to a ‘field of debris’, and torrential rains, storm surge and wave action caused serious flooding and mudslides.⁴

98% of Dominica’s buildings were damaged – including every school and medical centre – and 50% of homes were destroyed. Residents and businesses faced no running water, no power and limited communication services, with many roads washed away or severely damaged.

Dominica’s agricultural sector, a significant source of livelihoods and food security, was completely wiped out: 100% of banana and tuber plantations were completely destroyed, as well as vast amounts of livestock and farm equipment. The growing eco-tourism, health tourism and data processing sectors were critically impacted, with hotels smashed and rainforests decimated.

‘Our citizens barely had time to prepare before the ferocious winds and incessant rain began assaulting our nature island. As night fell we hunkered down to await its onslaught. Some of us were forced to flee our homes in the dark of night seeking safe shelter, buffeted and battered by the heavy rains and powerful winds. When dawn broke the scenes of utter devastation across this once lush green island, were heartbreaking.

This is the reality of climate change. Within a few hours an entire country was brought to its knees by the forces of nature.’

Hon. Roosevelt Skerrit, Prime Minister of the Commonwealth of Dominica
at the 23rd Conference of the Parties to the UNFCCC, Bonn 2017⁵

2 Quirin Schiermeier. 2018. Droughts, heatwaves and floods: How to tell when climate change is to blame. Nature. 30 July 2018. <https://www.nature.com/articles/d41586-018-05849-9>

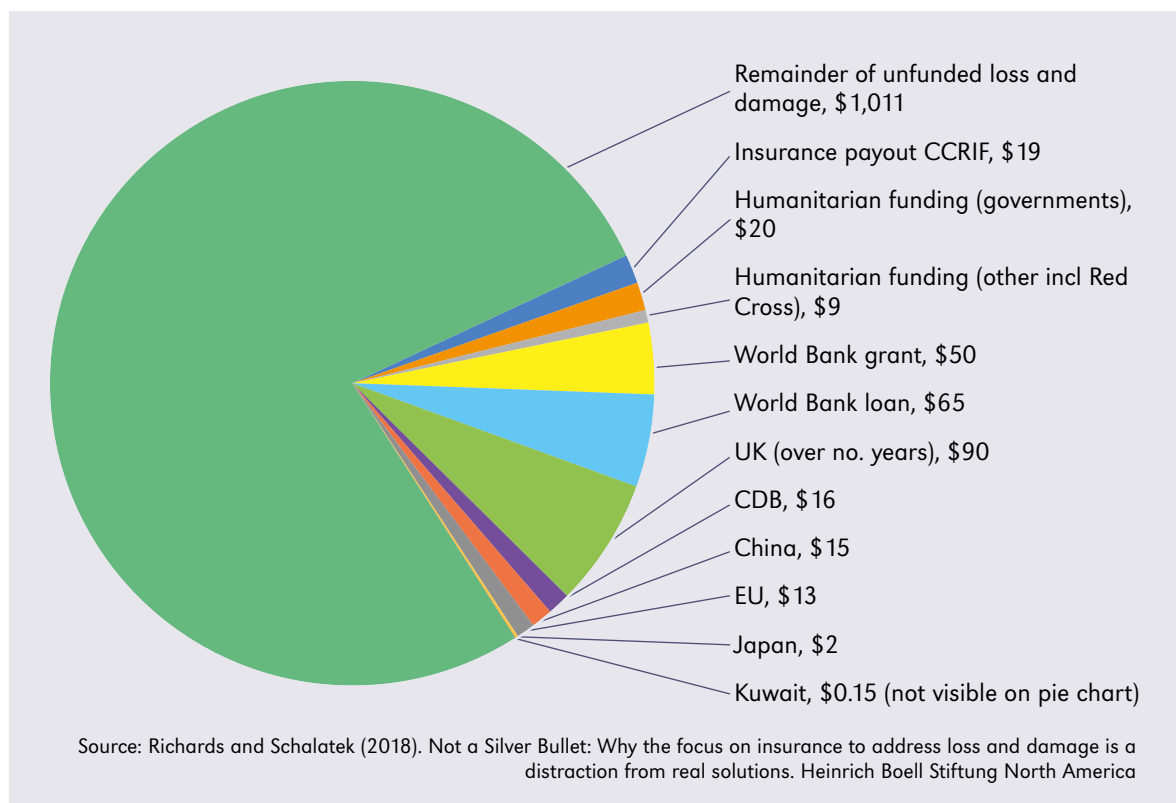
3 For more detailed discussions on definition of what loss and damage is and how it relates to adaptation see: Climate Action Network. 2018. Submission on the Scope of the Technical Paper Exploring Sources of Support for Loss and Damage and Modalities for Accessing Support. http://climatenetwork.org/sites/default/files/can_loss_and_damage_submission_022018.pdf

4 Richard J. Pasch, Andrew B. Penny, and Robbie Berg. 2018. National Hurricane Center Tropical Cyclone Report: Hurricane Maria. National Hurricane Center. https://www.nhc.noaa.gov/data/tcr/AL152017_Maria.pdf

5 Roosevelt Skerrit, Prime Minister of Dominica 2017. 23rd Conference of the Parties to the UNFCCC. https://unfccc.int/sites/default/files/dominica_cop23cmp13cma1-2_hls.pdf

Hurricane Maria caused loss and damage estimated at \$1.4bn, or 226% of Dominica’s GDP.⁶ Whilst Dominica undertook what traditionally would be considered a highly successful fundraising drive, raising over \$300m from donors, the majority of the loss and damage costs from the storm remain unfunded and therefore carried by the people of Dominica (see Figure 1).

FIGURE 1 Dominica funding sources (\$m)



1.1.2 Funding requirement for loss and damage

Loss and damage from climate change is already impacting vulnerable countries, and causing extreme hardship. The need for loss and damage finance is significant, and will only grow. The leading coalition of civil society organisations working on climate change, the Climate Action Network, recommends that at least \$50 billion a year by 2022 is made available for vulnerable countries to help them cope with loss and damage, increasing to approximately \$300 billion a year by 2030.⁷ They make this recommendation in the light of estimates from the World Bank that disasters from extreme events, not including slow-onset events like sea level rise, already cause an average of \$300 billion in economic losses each year and push 26 million people into poverty. If impacts on well-being are accounted for, disasters actually cost the global economy 60% more than usually reported, or \$520 billion/year.⁸ Projections of future loss and damage suggest loss and damage costs for developing countries of around \$400 billion a year by 2030, rising to \$1.1–\$1.7 trillion a year by 2050.⁹ Other projections have been much higher, up to \$3.6 trillion by 2030.¹⁰

6 Government of the Commonwealth of Dominica. 2017. Post-Disaster Needs Assessment Hurricane Maria. <https://reliefweb.int/report/dominica/post-disaster-needs-assessment-hurricane-maria-september-18-2017>.

7 Climate Action Network. 2018. Submission on the Scope of the Technical Paper Exploring Sources of Support for Loss and Damage and Modalities for Accessing Support. http://climatenetwork.org/sites/default/files/can_loss_and_damage_submission_022018.pdf

8 World Bank. 2017. Climate Insurance. Result Briefs. <https://www.worldbank.org/en/results/2017/12/01/climate-insurance>

9 Oxfam and Climate Action Tracker. 2015. Impacts of Low Aggregate INDCs Ambition: Technical Summary. https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/rr-impacts-low-aggregate-indcs-ambition-251115-en.pdf

10 DARA and the Climate Vulnerable Forum Climate Vulnerability Monitor 2 (2012) estimate global loss and damage in 2010 at \$700 billion with over 80% of net losses falling on developing countries, rising to \$4 trillion by 2030 with developing countries bearing over 90% of net losses. Matthew McKinnon, ed. 2012. Climate Vulnerability Monitor 2. 2nd edition. DARA and the Climate Vulnerable Forum. <http://daraint.org/climate-vulnerability-monitor/climate-vulnerability-monitor-2012/report/>

The financing needed for loss and damage comes on top of existing funding needs for adaptation, development and humanitarian & disaster response, as these areas already lack sufficient finance.¹¹ It is therefore important to find a new source of finance for loss and damage – one that is fair and makes the polluter pay.

1.2 The fossil fuel industry

1.2.1 Responsibility

Relatively few fossil fuel producers are responsible for a significant portion of emissions. As shown by the Carbon Majors studies roughly 100 entities are responsible for 52% of all emissions since the industrial revolution began. Since 1988, more than half of global industrial greenhouse gases (GHGs) can be traced to just 25 corporate and state producers.¹²

Fossil fuels are the largest source of climate pollution in the world, responsible for 91% of global industrial GHGs in 2015, and about 70% of all anthropogenic emissions. A huge acceleration in the extraction of fossil fuels has doubled their contribution to climate change since 1988.¹³

This period of rapid growth aligns with the fossil fuel industry's campaign to spread disinformation and misunderstanding about climate science to thwart action from policy makers:

'Victory Will Be Achieved When...Average citizens "understand" (recognize) uncertainties in climate science; recognition of uncertainties becomes part of the "conventional wisdom" [and]...Those promoting the Kyoto treaty on the basis of extant science appear to be out of touch with reality.'

American Petroleum Institute, 1998¹⁴

Throughout the 1990s and 2000s, some of the largest fossil fuel companies engaged in massive public relations campaigns to sow confusion and deceive decision-makers into inaction, despite knowing the dangers their products posed to our survival.¹⁵ Still today oil companies, including ExxonMobil, are funding climate science denier groups.¹⁶

This campaign of deception enabled oil, coal and gas companies to sell ever more of their products and make vast profits. In 2017, the five most polluting oil companies – ExxonMobil, Shell, BP, Chevron, and Total – together made more than \$62 billion in profit from over a trillion dollars in revenue (see Figure 2). Saudi Aramco has been called the most profitable company in the world, making \$33.8 billion in net income in the first six months of 2017, which we have extrapolated to annual profit.¹⁷ Rather than continuing to dodge their responsibilities, it is time the industry paid for the consequences of their business model.

11 For more detailed discussions on definition of what loss and damage is and how it is different to adaptation, as well as the scale of need for adaptation finance see: Climate Action Network. 2018. Submission on the Scope of the Technical Paper Exploring Sources of Support for Loss and Damage and Modalities for Accessing Support. http://climatenetwork.org/sites/default/files/can_loss_and_damage_submission_022018.pdf

12 Paul Griffin. 2017. The Carbon Majors Database. CDP Carbon Majors Report 2017. <https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf?1501833772>

13 Other industrial GHGs include process carbon dioxide from cement manufacturing and other industrial product- or process-related methane, nitrous oxide and F-gases. Non-industrial GHG emissions consist of carbon dioxide relating to land-use change, and methane from sources such as farming and landfills. *ibid*

14 Center for International Environmental Law (CIEL). 2017. Smoke and Fumes: The Legal and Evidentiary Basis for Holding Big Oil Accountable for the Climate Crisis. <https://www.ciel.org/wp-content/uploads/2017/11/Smoke-Fumes-FINAL.pdf>

15 *ibid*

16 Elliot Negin. 2018. Why is ExxonMobil Still Funding Climate Science Denier Groups? Union of Concerned Scientists. <https://blog.ucsusa.org/elliott-negin/exxonmobil-still-funding-climate-science-denier-groups#.W7Cl235kmE4.twitter>

17 Bloomberg News 2018. The Aramco Accounts: Inside the World's Most Profitable Company. <https://www.bloomberg.com/news/articles/2018-04-13/the-aramco-accounts-inside-the-world-s-most-profitable-company>

FIGURE 2 Top six polluting oil companies profits table

Oil company	Profit before tax (2017, \$bn)	Sales revenue (2017, \$bn)
Saudi Aramco (estimate)	68	1,098
ExxonMobil	20	244
Shell	18	305
BP	7	240
Chevron	9	135
Total	12	172
	134	2,194

Source: Company annual reports and Bloomberg News

1.2.2 Culpability

As the science attributing temperature rise to fossil fuels extracted by specific companies has become stronger in recent years,¹⁸ the amount of climate litigation cases at a local, state and regional level has grown. As time goes on, legal precedent establishing liability of fossil fuel extractors for climate change loss and damage will likely emerge. Climate litigation – seeking liability and compensation from fossil fuel companies for the impacts of climate change – began in the US and has steadily grown to include other countries such as Germany and the Philippines.¹⁹

An ongoing case in a German court is that of a Peruvian farmer, who has filed a claim for damages against RWE, Germany’s largest electricity producer, for knowingly emitting substantial volumes of GHGs, responsible for the melting of mountain glaciers near his town of Huaraz.²⁰ In the US, in November 2018, associations representing California crab fishermen filed suit against 30 fossil fuel companies, including Chevron and ExxonMobil, for the harm global warming has caused to their industry. The claim for unspecified damages demands that petroleum interests pay for changes needed to sustain the crab fishing industry in the future. The suit reads: ‘Defendants have known for nearly 50 years that greenhouse gas pollution from their fossil fuel products has a significant impact on Earth’s climate, including a warming of the oceans.’ Yet ‘defendants concealed the dangers, sought to undermine public support for greenhouse gas regulation, and engaged in massive campaigns to promote the ever-increasing use of their products at ever greater volumes.’²¹

In respect of behaviour to avoid liability for causing harm, it is important to recall the practices of the tobacco industry. Between the 1950s and the 1990s, widespread evidence of deception and disinformation by tobacco companies was uncovered as they fought compensation claims, in clear parallels with the now-emerging evidence of activities supporting climate change denial by fossil fuel companies.²² Ultimately, however, overwhelming scientific evidence established causation between smoking and lung cancer and with the Master Settlement Agreement (MSA, 1998) companies agreed to pay \$206bn over 25 years, curb certain marketing practices and dissolve certain industry groups.²³ In the case of the tobacco industry, a tipping point of evidence was reached after which legal liability was inevitably established. This is likely to be mirrored over time in respect of the fossil fuel industry – but on a planetary scale.

18 Including this seminal piece: Richard Heede. 2014. Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854–2010. *Climatic Change*. Volume 122, Issue 1–2, pp 229–241 <https://link.springer.com/article/10.1007/s10584-013-0986-y> Also see <http://climateaccountability.org/index.html>

19 Keely Boom, Julie-Anne Richards and Stephen Leonard. 2016. *Climate Justice: the International Momentum towards Climate Litigation*. <https://www.boell.de/sites/default/files/report-climate-justice-2016.pdf>

20 Sabin Center for Climate Change Law. 2018. *Lluyva v. RWE AG*. <http://climatecasechart.com/non-us-case/lliuya-v-rwe-ag>

21 The Guardian. 2018. *Claws out: fisherman sue 30 oil firms over climate change*. <https://www.theguardian.com/environment/2018/nov/14/crab-fishermen-sue-oil-firms-exxon-chevron>

22 Keely Boom, Julie-Anne Richards and Stephen Leonard. 2016. *Climate Justice: the International Momentum towards Climate Litigation*. <https://www.boell.de/sites/default/files/report-climate-justice-2016.pdf>

23 Tobacco Control Legal Consortium. 2015. *The Master Settlement Agreement: an overview*. <http://publichealthlawcenter.org/sites/default/files/resources/tlc-fs-msa-overview-2015.pdf>

2 A Solution: The Climate Damages Tax

2.1 Design

The Climate Damages Tax (CDT) would fund an international solidarity facility for loss and damage, and national *just transition* efforts assisting communities shift from fossil fuels to renewable energy. As an international taxation measure, we set out the legal basis and precedents that underpin the proposal below.

2.1.1 Precedents

'Accepted statements of customary international law' provide the basis for the CDT, as asserted in the UN Stockholm Declaration (1972) and re-asserted in the UN Rio Declaration (1992), the UN Framework Convention on Climate Change (1992) and the Paris Agreement (2015).²⁴

The first is the **No-Harm Rule**, whereby 'States have... the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction' (1972, Principle 21;²⁵ 1992 Principle 2;²⁶ 1992 Preamble para 8²⁷). Under this principle, states are 'duty-bound to prevent, reduce and control the risk of environmental harm to other states', and make reparation or compensation for injury caused.²⁸

The second is the **Polluter Pays** principle, also included in the Rio Declaration (1992, Principle 16) as the notion that those in control of a polluting activity, including companies, should be held liable for harms caused by the activity. The Rio Declaration states 'National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.'²⁹

International tax measures, such as the CDT, where tax collected is not ultimately destined for a domestic Treasury, although certainly the exception rather than the rule, are by no means without precedent. An important example is the **European Union Value Added Tax** (EU VAT) where 28 EU Member States are legally required to remit 0.3% of their total VAT revenues as contributions to fund the EU budget.³⁰ This source of revenue has provided €330bn since 2000.³¹ EU VAT demonstrates that substantial levels of revenue can be generated through international cooperation.

On a smaller scale, **UNITAID**, which provides HIV/AIDS, TB and malaria treatments in developing countries, also serves as an important precedent, having raised more than \$3 billion since it was established in 2006, with more than half the revenue coming from aviation levies applied by various countries, with monies pooled into an international solidarity facility, which is based at the World Health Organisation. France took the lead in establishing the initiative when it applied a small increase of about €1 to the cost of an economy class air ticket, after which it was joined by Cameroon, Chile, Congo, Guinea, Madagascar, Mali, Mauritius, Niger and the Republic of Korea.

Examples that more closely mirror the design of the CDT are regimes agreed to by states addressing liability and compensation arising from pollution damage. Two of the existing schemes that provide precedents for financial contributions being made directly to an international fund are in the fields of oil spills and nuclear damage.³²

The International Oil Pollution Compensation Funds (IOPCF) were founded under the International Maritime Organisation (IMO) in 1967. The IOPCF embody an international agreement on liability and financial

24 Dinah Shelton. 2008. Stockholm Declaration (1972) and Rio Declaration (1992). Oxford Public International Law. <http://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1608>

25 UN. 1972. Report of the United Nations Conference on the Human Environment. <http://www.un-documents.net/aconf48-14r1.pdf>

26 United Nations. 1992. Report of the United Nations Conference on Environment and Development. <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>

27 United Nations. 1992. United Nations Framework Convention on Climate Change. <https://unfccc.int/resource/docs/convkp/conveng.pdf>

28 Legal Response Initiative. 2012. No Harm Rule and climate change. <https://legalresponse.org/wp-content/uploads/2013/07/BP42E-Briefing-Paper-No-Harm-Rule-and-Climate-Change-24-July-2012.pdf>

29 United Nations. 1992. Report of the United Nations Conference on Environment and Development. <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>

30 European Commission. 2014. Budget: Multiannual Financial Framework. The EU's own resources. http://ec.europa.eu/budget/mff/resources/index_en.cfm

31 European Commission. 2018. Budget: EU expenditure and revenue 2014-2020. http://ec.europa.eu/budget/figures/interactive/index_en.cfm

32 Keely Boom, Julie-Anne Richards and Stephen Leonard. 2016. Climate Justice: the International Momentum towards Climate Litigation. p32-36. <https://www.boell.de/sites/default/files/report-climate-justice-2016.pdf>

compensation for 'oil pollution damage that occurs in Member States resulting from spills.'³³ The levy is paid by entities that receive oil by sea and based on annual oil receipts, to cover claims and administration, and Governments are obliged to monitor and submit this information annually to the IOPCF Secretariat, with corporate entities complying at a rate of 99.8% (Richards, 2014). The establishing Convention has been ratified by 115 states, covering 95% of the volume of the global merchant fleet. It has dealt with over 150 cases, covering the costs of clean-up and restoration operations, and economic losses from those reliant on fishing and tourism livelihoods. Cases may be brought by any party, including directly by affected communities.

The Paris Convention on Nuclear Third Party Liability (1960) was founded under the OECD Nuclear Energy Agency covering harm to people and property within the State after a nuclear incident, and has been ratified by most Western European countries. It has since been extended to cover damage to international waters and states other than where the incident occurred.³⁴ States are required to contribute to this fund in proportion to their GDP and the extent of their nuclear power use.

These precedents demonstrate that if such schemes can operate in other fields, it is also possible in relation to fossil fuels and climate change. The Climate Damages Tax offers a grander version, reflecting the much larger scale of the problem.

2.1.2 The Climate Damages Tax proposal

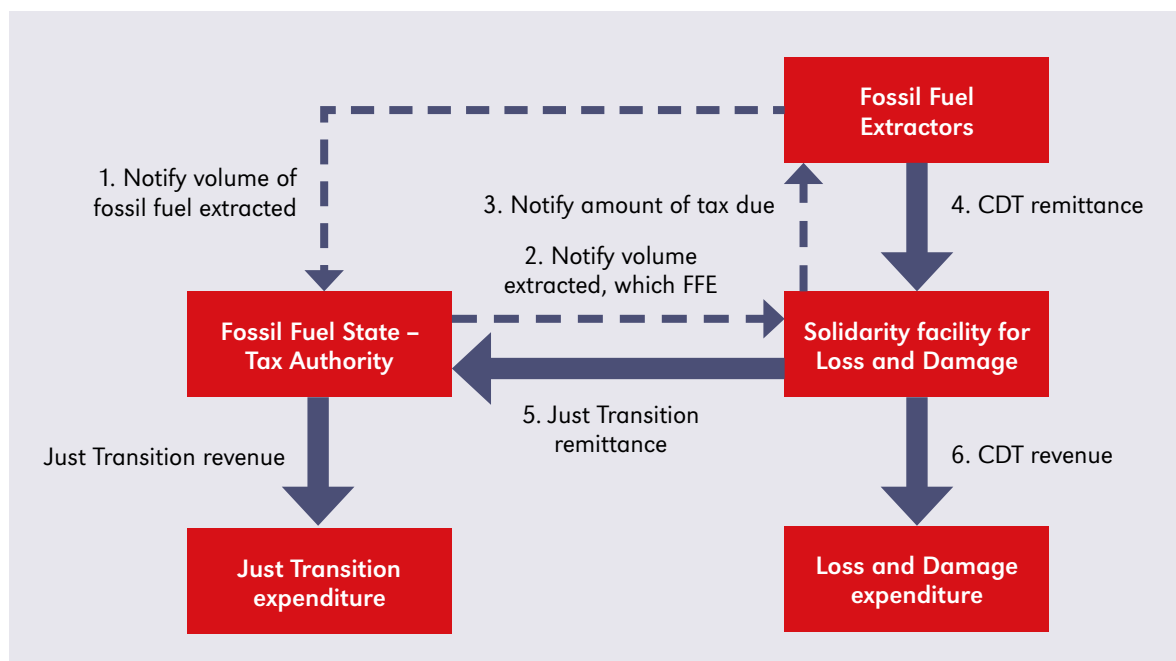
Building upon these existing precedents, such as the IOPCF, where a tax, levy, charge or fee is remitted directly to a funding facility, we describe below the payment process of the Climate Damages Tax (CDT) proposal.

The CDT is a charge on the extraction of each tonne of coal, barrel of oil, or cubic litre of gas, calculated at a consistent rate globally based on how much climate pollution (CO₂e) is embedded within the fossil fuel. Working with existing systems of payment, fossil fuel producers, who pay royalties (or similar) to the states where they operate, will pay an extra amount on the volume they extract to the solidarity facility for loss and damage.

The CDT would apply to fossil fuel extractors such as ExxonMobil pumping oil in the US, BHP Billiton mining coal in Australia or BP extracting oil and natural gas in the North Sea. The payment and collection process is set out in the diagram below: the first three steps involve notification, the last three involve payment.

2.1.3 Payment and collection diagram

FIGURE 3 Diagram illustrating the payment and collection process of the Climate Damages Tax



33 International Oil Compensation Funds. 2018. Funds Overview. <https://www.iopcfunds.org/about-us>

34 OECD Nuclear Energy Agency. 2018. Paris Convention on Nuclear Third Party Liability. <https://www.oecd-nea.org/law/paris-convention.html>

2.1.4 Steps to capture of tax revenue

1. Fossil Fuel Extractors (FfEs) declare volumes and emission profile of coal, oil and gas extracted to the tax authority of the country of extraction, the Fossil Fuel State (FFS), as per existing legal arrangements for payment of royalty (or similar) on quantity of fossil fuel extracted.
2. The Fossil Fuel State's tax authority notifies the solidarity facility for loss and damage of the volume extracted by each Fossil Fuel Extractor, alerting them that CDT remittance is due.
3. The Solidarity Facility calculates the CDT remittance due from each FFE using the volume extracted, its emissions profile and the tax rate, and notifies the Fossil Fuel Extractor of the amount due.
4. The Fossil Fuel Extractor pays the CDT remittance to the solidarity facility for loss and damage.
5. The Solidarity Facility pays a proportion of the CDT remittance to the tax authority of the Fossil Fuel State (from where the fossil fuel was extracted), ring-fenced for spending on just transition. (For more detail on proportions and equity, see 3.2 below; for more on just transition allocation, see 2.2.4 below).
6. The remaining proportion of the CDT remittance contributes to funds available for claims by loss and damage affected countries and communities.

2.1.5 Compliance

Fossil fuel extractors are legally obliged to report volumes of coal, oil or gas extracted to pay due royalty (or similar) to the country that has granted a license permitting extraction. They would also have a legal duty to pay the CDT or risk a penalty, which we anticipate to be a substantial financial sanction. Further, non-compliance of tax obligations carries the serious threat of reputational risk and brand damage.

2.2 Allocation

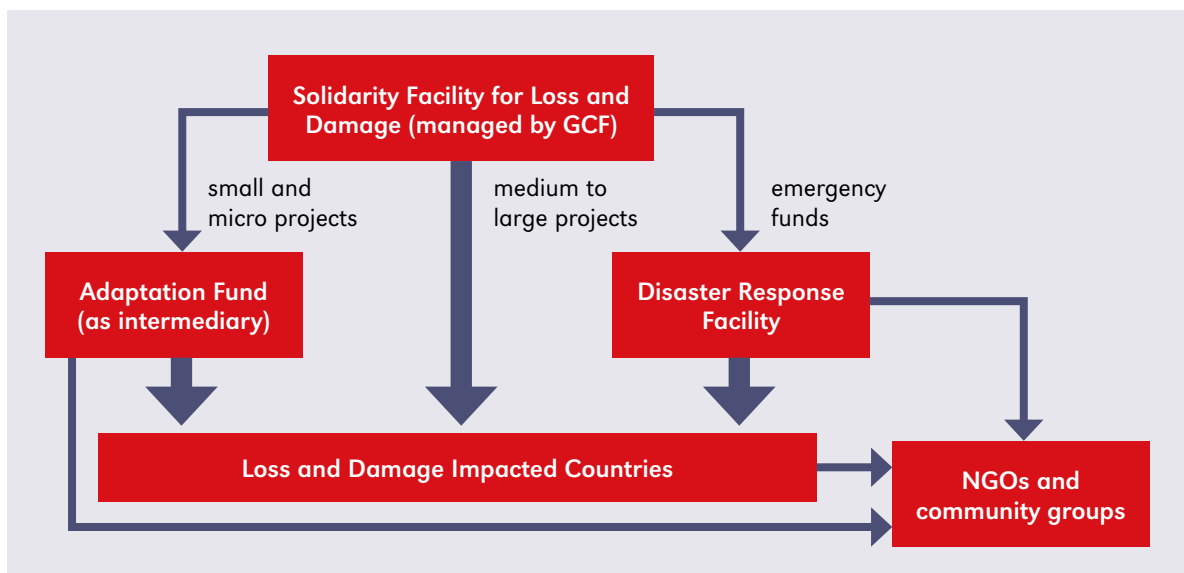
Acknowledging that existing climate finance architecture is already comprehensive and has established bodies which can be utilised in delivering loss and damage finance, we conclude that the UNFCCC finance framework is the most appropriate and workable space to house the solidarity facility for loss and damage.

The facility should be established under the UN's Green Climate Fund (GCF), funded mainly by the CDT but with the potential for direct contributions from developed countries and other public and private sources.

The diagram below sets out how the facility can disburse funds in response to emergencies, finance medium-large projects and micro-small projects to assist countries and communities impacted by loss and damage.

2.2.1 Allocation diagram

FIGURE 4 Diagram illustrating the allocation of funds to countries and communities impacted by loss and damage



Low income vulnerable countries would have preferential access to the loss and damage solidarity facility, receiving funds for capability building and readiness activities – including putting together loss and damage plans and recovery plans. A specified proportion of funds from the facility should be made to least developed countries, African countries and small island states.

2.2.2 The Green Climate Fund (GCF)

In this section, we set out the reasons why we favour the solidarity facility for loss and damage being managed by the GCF.

The GCF is an up and running element of the UNFCCC climate finance architecture, with experience in managing funds at scale, well-established procedures, and a track record of making grants, including of large to medium projects and programmes. It was established in 2010 by the 195 countries party to the UNFCCC, with the Paris Agreement (2015) affirming its role as the financial mechanism to mobilise and distribute climate finance, taking into account the needs of countries that are particularly vulnerable to climate change impacts.³⁵ The initial financing round between 2014 and 2018 saw pledges of \$10bn. Funds invested between 2015 and 2017 so far total \$2.1bn, and are distributed evenly between mitigation and adaptation projects, the latter of which requires a minimum allocation of 50% to Least Developed Countries (LDCs), Small Island Developing States (SIDS), and African States. The GCF already has a mandate to raise funds from alternative sources of finance and ‘mobilize funding at scale’ from the private sector.³⁶

Importantly, the GCF is a democratic global funding mechanism with high national ownership, due to its equitable representation and decision-making weight between developing and developed country representatives. Further, it allows for full cost financing, covering all of the costs of loss and damage, rather than incremental cost financing, which requires impacted countries to contribute a portion of the costs. The GCF allows direct access, with national implementing entities (NIEs) in recipient countries able to assume the role of administrator of project and programme funds and have autonomy in making decisions about funding priorities in country. It also provides for enhanced direct access (EDA) models, with subnational entities and non-governmental organisations able to access funds through small grants facilities, and therefore empowering community and vulnerable population groups, including women and indigenous peoples, to access public climate funds.³⁷

The GCF is able to set up windows, or facilities for specific purposes. We propose that the loss and damage solidarity facility is established as a second fund of the GCF, in addition to the existing GCF Trust Fund that finances the administrative operation of the GCF and mitigation and adaptation projects, to ensure additionality to adaptation and mitigation financing. For this reason, it ought to establish either an entirely separate Board from the GCF for adaptation and mitigation, or use the same GCF Board but with additional vulnerable country members. However, project proposals across the GCF should be able to seek funding from both the loss and damage facility and main Fund, to ensure that loss and damage projects are delivered seamlessly in conjunction with adaptation, humanitarian, disaster risk reduction and development projects.³⁸ It is important that, unlike adaptation and mitigation financing, loss and damage finance is not delivered as loans.

To ensure that community groups can access funds for small and micro-scale projects, existing institutions such as the Adaptation Fund (AF), Least Developed Countries Fund (LDCF) and Special Climate Change Fund (SCCF) should act as intermediaries. This could be achieved either through a memorandum of understanding or via a formal accreditation of the AF to the GCF, as has already been discussed by the Adaptation Fund Board. The GCF should also strengthen NIE and EDA approaches for loss and damage, and ramp up its overall financing for community-oriented micro- and small-scale activities.³⁹

To ensure governments, community groups and international humanitarian organisations have almost instant access to funds, a separate Emergency Response facility should be established, capable of providing immediate funding in the case of emergencies – such as Hurricane Maria on Dominica. The Emergency Response facility should be managed within the GCF with a separate Secretariat-led decision making process. The GCF Secretariat currently manage a readiness and preparatory support programme on a similar basis, and lessons could be learnt from this for it to be scaled up.

35 Green Climate Fund. 2018. Who we Are. <https://www.greenclimate.fund/who-we-are/about-the-fund>

36 Julie-Anne Richards and Liane Schalatek. 2017. Financing Loss and Damage: a Look at Governance and Implementation Options. <https://www.boell.de/en/2017/05/10/financing-loss-and-damage-look-governance-and-implementation-options>

37 For further discussion see Julie-Anne Richards and Liane Schalatek. 2017. Financing Loss and Damage: a Look at Governance and Implementation Options. <https://www.boell.de/en/2017/05/10/financing-loss-and-damage-look-governance-and-implementation-options>

38 *ibid*

39 *ibid*

National or regional loss and damage financing facilities could be established through the GCF, and should be supported through an increase in the number of GCF-accredited direct access entities, as well as an upgrade of their fiduciary and financial management capabilities to allow them to function as financial intermediaries. A national development bank or a national finance ministry could fulfill such functions.

In the situation where a group of countries decided to implement the Climate Damages Tax collaboratively, outside of the UNFCCC, similar governance institutions would need to be established. Options could include approaching, for example, the Asian Development Bank (ADB) or the Africa Development Bank (AfDB) to establish a trust fund to operate as the loss and damage solidarity facility, with a clear criteria for funding, and a committee made up of representatives from participating countries, civil society and affected communities – ensuring equitable and democratic representation and decision making.

2.2.3 Describing loss and damage allocation

We propose that the Warsaw International Mechanism for Loss and Damage (the WIM) provide guidance as to the loss and damage activities that would be eligible for funding, in conjunction with input from vulnerable countries and communities as to their loss and damage needs. This would include agreement of a set of guiding questions or criteria, and a non-exhaustive list of activities,⁴⁰ along the following lines:

- Was the impact likely caused by, or made worse or more pronounced by, climate change? Do some or all impacts fall outside of normal, historical parameters and/or can they be attributed either wholly or partially to climate change based on established science?
- Does impact involve economic losses, including livelihood assets, loss of something the community values and depends on, or loss of the ability to undertake an activity?
- Does the impact require a significant change in traditional or existing livelihood or way of life, going beyond adjustments that could be considered under adaptation?⁴¹

After meeting established criteria, CDT revenue could go to, for instance, rebuilding houses and community infrastructure if they are destroyed by super typhoons or cyclones, paying for the scaling up of social safety nets in case of extreme drought; training people in different livelihoods if, say, their fish stocks disappear due to warming waters and/or changed currents. More detailed examples of what funds could be used for⁴² include:

- **Relocation in the face of rising sea levels:** Sea level rise salinates the soil, making crops unviable, and infiltrates groundwater reserves, making water undrinkable. It makes storm surges and floods worse, and can eventually submerge an area. Some communities are already being forced to move, some in a coordinated fashion and some in a piecemeal way that is tearing communities apart.⁴³ Funds for relocation will minimise human suffering and other non-economic losses (of community, culture, language) and help communities establish in new areas where they can make their home rather than merely delaying their next migration for a few years.
- **Reconstruction costs in reaction to super-charged storms and unpredictable climate impacts:** Extreme and unpredictable storms and floods as well as heat waves cause severe damage to infrastructure. Communities should receive finance to undertake reconstruction and to facilitate 'building back better.'
- **Social protection schemes that can scale to respond to disasters:** In the light of worsening drought conditions driven by climate change, farmers and governments are finding it increasingly difficult to recover from extended periods of increasingly severe drought. From 2008 to 2011, the Government of Kenya estimated losses from extreme drought at \$12.1 billion, with the poorest people suffering the greatest losses. As the drought lasted more than four years, poverty increased, and the Government of Kenya had to divert funds and significantly increase its efforts to reduce poverty in the medium- to long-term. Loss and damage solidarity facility funds should pay for the scaling up of social protection schemes like the Kenyan

40 Such as loss of fishing resource, loss of ancestral land, loss of culture associated with traditional activities, loss of the ability to undertake an activity eg herding cattle – as well as others decided in conjunction with the WIM and vulnerable countries and communities, who should be able to propose new approaches

41 Julie-Anne Richards and Liane Schalatek. 2017. Financing Loss and Damage: a Look at Governance and Implementation Options. <https://www.boell.de/en/2017/05/10/financing-loss-and-damage-look-governance-and-implementation-options>; Climate Action Network. 2018. Submission on the Scope of the Technical Paper Exploring Sources of Support for Loss and Damage and Modalities for Accessing Support. http://climatenetwork.org/sites/default/files/can_loss_and_damage_submission_022018.pdf

42 These examples are drawn from the following, and for more examples see: Climate Action Network. 2018. Submission on the Scope of the Technical Paper Exploring Sources of Support for Loss and Damage and Modalities for Accessing Support. http://climatenetwork.org/sites/default/files/can_loss_and_damage_submission_022018.pdf

43 For examples of climate change displacement, and a more detailed discussion, see Julie-Anne Richards and Simon Bradshaw. 2017. Uprooted by Climate Change. Oxfam Briefing Paper. https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/bp-uprooted-climate-change-displacement-021117-en.pdf

Hunger Safety Net Programme to protect communities and allow them to recover from losses during extreme droughts.

- **Alternative livelihood programmes in the face of resource loss:** Communities facing loss of livelihoods, for example loss of fishing as oceans warm, currents change and coral reefs bleach, or desertification of traditionally fertile land, may over time find adaptation efforts insufficient in the face of climate impacts and will have to change to a completely new livelihood, for example tourism or manufacturing, in order to stay in-situ. The loss and damage solidarity facility should fund programmes to develop alternative livelihoods, in response to the loss of resources from climate change.
- **Capacity / institution building:** For governments and communities in most vulnerable countries, building their capacity and the right institutions will be an essential element in dealing with loss and damage effectively, as will technology cooperation and technology transfer. This includes supporting vulnerable developing countries: to develop and enhance national and regional level institutions to assess and address loss and damage, to develop and implement long-term policies, plans, and programmes, and to undertake pilot projects that develop and implement innovative approaches to address loss and damage. Support will be required for information gathering and sharing about the success of various approaches, and the replication of best practices, appropriate for each country's circumstances.

2.2.4 Describing just transition allocation

The CDT would raise significant revenue to fund just transition in the states where fossil fuels are extracted.

The necessary transition away from fossil fuels has implications for key sectors, regions and countries, which could result in 'stranded workers' and 'stranded communities'.⁴⁴ The funds to be used for domestic climate programs in the country that the fossil fuel was extracted, should focus on: working with low income communities to help them transition to fossil fuel free transport and energy alternatives; and working with industry bodies, employers, unions and workers, and communities to assist in the transition from fossil dependant work to alternatives.

Precedent

- The recent announcement by Spain of a €250m transition deal for its coal sector is an important example of government's beginning to adopt just transition policies. The move will see most Spanish coal mines closed by the end of 2018, financing of early retirement and re-skilling in green industries for over 1,500 miners and subcontractors, and environmental restoration in mining communities.⁴⁵ The new Spanish Government's Climate Plan, which aims for carbon neutrality by 2050 at the latest, has already seen taxes scrapped on solar energy schemes, big increases pledged in solar capacity, and will include mandatory carbon disclosure for companies.⁴⁶ Although, the deal has been criticised in some quarters for inadequate compensation for loss of employment, Spain's just transition measures send a strong signal that it is acceptable for other countries to follow suit.
- The Scottish Government's Just Transition Commission was set up in 2018 and is an important example of just transition principles being implemented, in a move welcomed by Scottish environmental NGOs and trade unions.^{47 48} Scotland has both extensive oil and wind resources. The Commission has a remit to 'look at how to maximise opportunities of decarbonisation, in terms of fair work and tackling inequalities, while delivering a sustainable and inclusive labour market'⁴⁹ within Scotland's plans to reduce emissions from 1990 levels by 90% by 2050.⁵⁰
- Similarly, in the Canadian province of Alberta, the Government of Alberta's Advisory Panel on Coal Communities has made recommendations on supporting workers through the planned phase-out of coal-fired electricity generation. They have been welcomed as 'a step in the right direction for Alberta's coal workers' by

44 Grantham Institute. 2018. Investing in a just transition. <http://www.lse.ac.uk/GranthamInstitute/investing-in-a-just-transition/>

45 The Guardian. 2018. Spain to close most coalmines in €250m deal. <https://www.theguardian.com/environment/2018/oct/26/spain-to-close-most-coal-mines-after-striking-250m-deal>

46 Climate Home News. 2018. Can Teresa Ribera transform Spain into a green champion? <http://www.climatechangenews.com/2018/11/12/can-teresa-ribera-transform-spain-green-champion>

47 UNISON Scotland. 2018. Just Transition Partnership: MSP Briefings. <http://www.unison-scotland.org/just-transition-partnership-msp-briefings>

48 STUC. 2018. Trade unions and environmentalists respond to Just Transition Commission chair. <http://www.stuc.org.uk/news/1362/justtransitionchair>

49 Scottish Government. 2018. Leading the way to a low carbon future. <https://news.gov.scot/news/leading-the-way-to-a-low-carbon-future>

50 Business Green. 2018. Scotland launches Just Transition Commission to 'pave way to low carbon future'. <https://www.businessgreen.com/bg/news/3062751/scotland-launches-just-transition-commission-to-pave-way-to-low-carbon-future>

local unions, who have called for a dedicated transition fund and agency to be established, and 're-training, bridging and relocation allowances'.⁵¹

The New Climate Economy 2018 report identifies that low-carbon growth could deliver economic benefits of \$26 trillion to 2030 and generate over 65 million new low-carbon jobs globally⁵² – however a conscious focus on justice including *rights* of workers and of communities, and on *representation and engagement* with workers and communities, will be essential to achieve the full social benefits of low-carbon growth. It is essential that the CDT revenue helps this transition and is not used as a slush fund to prop up the profits of big corporations.

- **Just transition for workforce from coal to alternatives:** A just transition is about protecting the workers and their communities currently dependent on jobs in high carbon sectors like oil, coal or gas. It does not mean bailing out big energy companies for their stranded investments in fossil fuels.⁵³ The just transition funds from the CDT should be spent working with communities to identify strengths to build new industries on, providing the education and training and other incentives, to build new industries focused on renewables and other clean alternatives.⁵⁴
- **Address energy poverty:** Increasing costs of fossil fuels will disproportionately impact those on lowest incomes. Without social programs the poorest in society will increasingly be forced into energy poverty, disproportionately affecting the elderly, low-income families, single-parent homes (80% headed by women) and people of colour. Already in the EU, 125 million people (1 in 4 people) live in energy poverty. Governments should direct the domestic portion of the CDT to reduce energy poverty by undertaking renovation programs to make buildings, particularly homes of low income earners, more energy efficient and support community energy programs including solar in low income housing.⁵⁵
- **Fossil free transport for low income communities:** The best way to ensure that rising oil costs do not impact low income households is to ensure that they are not forced to rely on the car in their daily life.⁵⁶ Addressing dependency upon the car will require significant investment in public transport (which needs to be powered by renewables) and in infrastructure to encourage walking and cycling. This has the added benefit of reducing air pollution, noise, road accidents and increasing the health of the community. It can help improve the fabric of society and reduce societal exclusion.⁵⁷ Countries should use the CDT just transition funds for spending on infrastructure, in consultation with communities, to make fossil free transport available, ensuring they focus their efforts on low income communities in particular.

Loss and damage is impacting upon all countries, including rich states, and the need for adaptation and loss and damage spending is most great in low income communities. For instance, 1.5 million properties have been identified as at risk of rising sea levels in England, along with major roads, railway lines and stations, and landfill sites.⁵⁸ In the US, Canada and Australia, indigenous people are at risk of sea level rise, as well as other impacts of climate change.⁵⁹ The CDT just transition funds could be used to help those communities.

51 Alberta Federation of Labour. 2017. Alberta's coal transition plan a step in the right direction for coal workers. <https://globenewswire.com/news-release/2017/11/13/1185378/0/en/Alberta-s-Coal-Transition-Plan-a-Step-in-Right-Direction-for-Coal-Workers.html>

52 The New Climate Economy: The Global Commission on the Economy and Climate. 2018. Unlocking the Inclusive Growth Story of the 21st Century. <https://newclimateeconomy.report/2018/executive-summary/>

53 Friends of the Earth Europe. 2018. Just Transition. <http://www.foeeurope.org/just-transition>

54 For more see: Peter Sheldon, Raja Junankar and Anthony De Rosa Pontello. 2018. The Ruhr or Appalachia? Deciding the future of Australia's coal power workers and communities. IRRRC Report for CFMMEU Mining and Energy. October 2018. https://www.ituc-csi.org/IMG/pdf/ruhrorappalachia_report_final.pdf

55 Friends of the Earth Europe. 2018. Warm homes, not the climate. <http://foeeurope.org/energy-poverty>

56 Giulio Mattioli, Zia Wadud, Karen Lucas. 2018. Vulnerability of fuel price increases in the UK: a household level analysis. Transportation Research Part A. 113. p227-242. <http://eprints.whiterose.ac.uk/130011/1/1-s2.0-S0965856417304731-main.pdf>

57 Carlos Felipe Pardo. 2011. A Guide for Sustainable Urban Development in the 21st Century. United Nations. <https://sustainabledevelopment.un.org/content/documents/shanghaiannual.pdf>

58 Roger Harrabin. 2018. Rising seas will swamp homes, report says. BBC. <https://www.bbc.co.uk/news/science-environment-45983260>

59 Lauren Bennett. 2017. Rising Sea Levels and Indigenous Communities. The Climate Institute. <http://climate.org/rising-sea-levels-and-indigenous-communities>

3 The Climate Damages Tax proposal in greater detail

3.1 Rate

We recommend that the CDT is introduced in 2021 at a low initial rate of \$5 per tonne of CO₂e, increasing annually at \$5 per tonne until 2030, at which point there should be a review, with the expectation that it is increased at the rate of \$10 per tonne each year after that.

Our recommendation is based on advice from the Grantham Institute on how to make carbon taxes acceptable to society. The key elements of which are:

- start at a low rate and phase in the carbon tax over time;
- earmark carbon tax revenues to finance climate change programmes;
- ensure the tax is redistributed in a way that is fair;
- communicate about the benefits of the tax and its impacts.⁶⁰

We are confident the CDT meets these criteria.

The Carbon Pricing Leadership Coalition have advocated that carbon taxes should be set at a level to disincentivise polluting behaviour, recommending pricing carbon at \$40–80 per tonne of CO₂ by 2020 and \$50–100 per tonne of CO₂ by 2030 in order to achieve the Paris temperature target of keeping warming well under 2 degrees and making all efforts to stay at 1.5°C above the pre-industrial temperature. Whilst noting that a carbon price on its own is not enough to phase out fossil fuels quickly enough, our pricing is broadly in line with their recommendation by 2030.

It could be argued that the CDT should be set higher to take into account the full social cost of carbon – an estimate of the economic cost of climate pollution incorporating impact on economic growth. A recent and comprehensive study calculates the social cost of carbon from each additional tonne of CO₂ at \$417 per tonne. Other social cost of carbon estimates have included \$150–200 per tonne of CO₂, and the US Environmental Protection Agency which calculated \$12, \$42 and \$62 per tonne of CO₂ (depending upon the discount rate used), for use in US Government decision making.⁶¹ Whilst the CDT rates we recommend are within most of these estimates, the more recent high estimate of \$417 per tonne is not achieved. We acknowledge that the CDT is not the complete solution to climate injustice and welcome other efforts to complement it, nationally and internationally.

Increasing the rate over time

This recommendation takes into account that fossil fuels must be phased out by the middle of the century in order to prevent catastrophic climate change. As well as providing a price signal as to the importance of the phased elimination of fossil fuels, a higher rate of CDT will be required to maintain revenue as fossil fuel volumes decrease as their use is phased out. Our modelling of the phase out of fossil fuel is based on an approximate average of pathways 1–3 detailed in the IPCC Special Report on 1.5°C.⁶² (See Appendix for more on the IPCC report pathways; and for more on revenue potential see 3.3 below)

We recognise that CDT revenues would need supplementing as loss and damage is expected to grow, and as fossil fuels are phased out. We therefore suggest that alternative sources of finance should also be established.

60 S Carattini, M Carvalho and S Fankhauser. 2017. How to make carbon taxes more acceptable. Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science. <http://www.lse.ac.uk/GranthamInstitute/publication/make-carbon-taxes-acceptable/>

61 Katharine Ricke, Laurent Drouet, Ken Caldeira and Massimo Tavoni. 2018. Country-level social cost of carbon. *Nature Climate Change*. <https://doi.org/10.1038/s41558-018-0282-y>

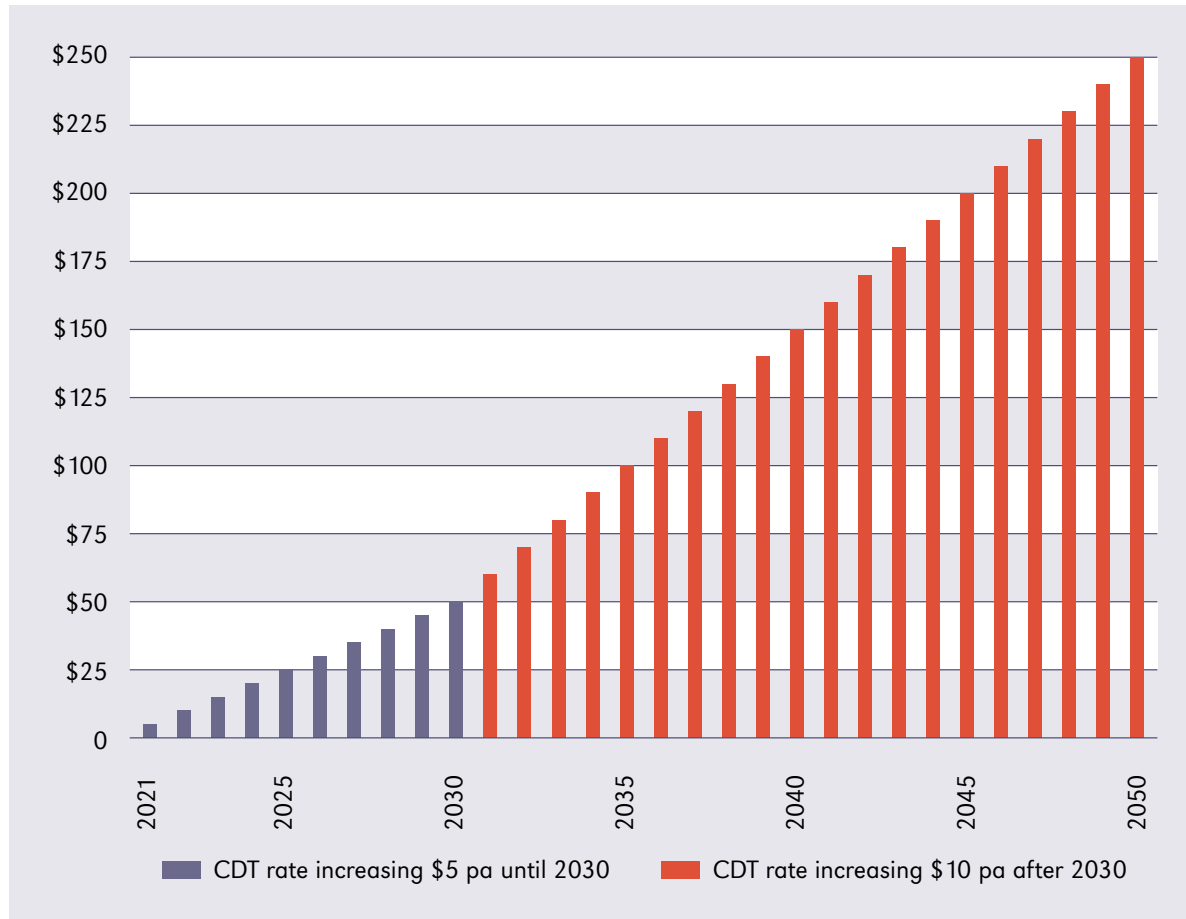
62 IPCC, 2018. Note pathway 4 has been excluded given its high reliance on yet to be developed negative emission technology.

We recommend that the CDT is:

- introduced at \$5 per tonne of CO₂e in 2021
- increased annually at \$5 per tonne until 2030
- increased annually at \$10 per tonne until 2050

This would deliver the following rates:

FIGURE 5 Climate Damages Tax increase in tax rate: 2021–2050



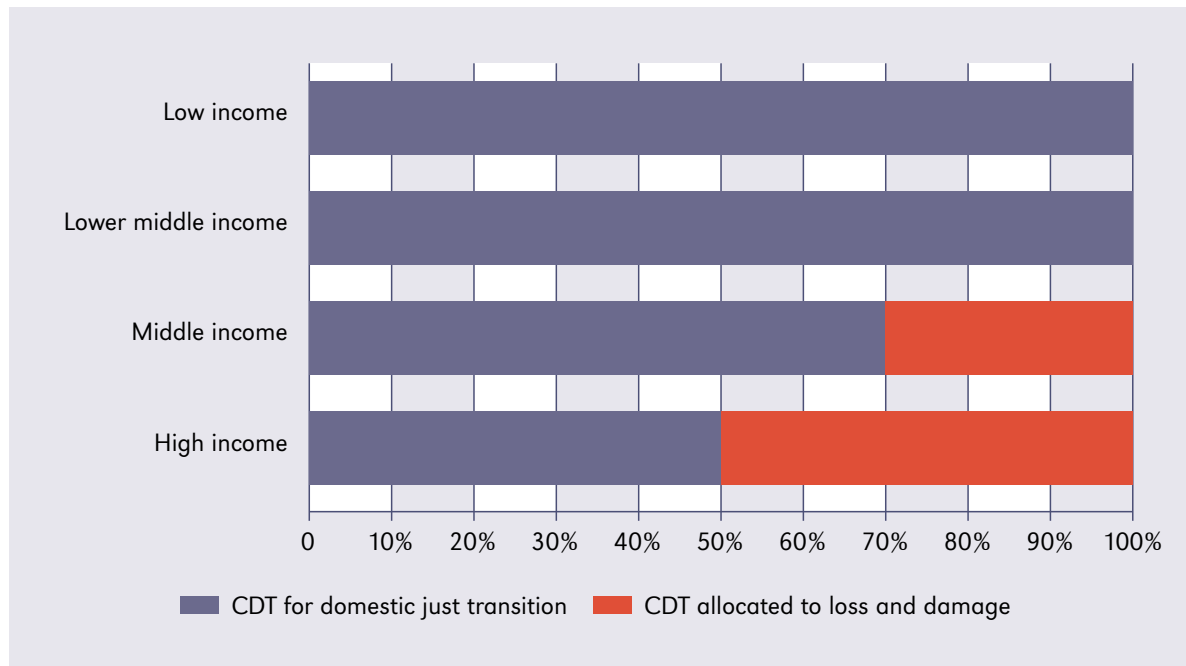
3.2 Equity

The CDT should be set at a globally consistent rate, as regardless of where the fossil fuel is extracted – the United Kingdom, Saudi Arabia, or China – the emissions will still contribute to climate damage. As a global rate, the CDT does not distort global markets, nor favour the extraction of one country’s fossil fuels over another.

It is, however, extremely important to recognise fairness, or equity, in how the CDT is applied, as richer countries have the *capacity* to pay more. Their historical emissions have caused the climate change to date, so they have the *responsibility* to contribute more as well. In order to incorporate equity into the CDT we propose 50% of the revenue generated from fossil fuels extracted in high income countries is contributed to the loss and damage solidarity facility, whereas low income countries would retain all revenue generated from fossil fuels extracted in their countries, with a sliding scale between the two.

The diagram below (figure 6) illustrates the sliding scale and the the split of CDT revenue allocated to just transition and the loss and damage solidarity facility.

FIGURE 6 CDT contributions equity scale



- 50% from high income countries to just transition, 50% to the loss and damage facility
- 70% from upper middle income countries to just transition, 30% to the loss and damage facility
- 100% for lower middle income countries to just transition
- 100% for low income countries to just transition

As such, lower middle and lower income countries would have access to all the CDT revenue generated by extraction of fossil fuels in their countries for domestic just transition programmes.

3.3 Revenue Potential

The following table (figure 7) shows the potential revenues that would accrue to national governments on the introduction of the CDT in 2021 at a rate of \$5 per tonne of CO₂e in a variety of states for just transition projects and to the loss and damage solidarity facility due to extraction carried out in these countries. These calculations are based on 2017 fossil fuel extraction volumes⁶³ and UK Government emissions profiles,⁶⁴ and account for non-energy use of fuels.⁶⁵ For details of the methodology, see Appendix.

63 BP. 2018. Statistical Review of World Energy. <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

64 UK Government. 2018. Greenhouse gas reporting: conversion factors 2018. <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2018>

65 Richard Heede. 2014. Tracing anthropogenic CO₂ and methane emissions to fossil fuel and cement producers 1854-2010. *Climatic Change*, vol. 122(1), p229-241. <http://link.springer.com/article/10.1007/s10584-013-0986-y?view=classic>

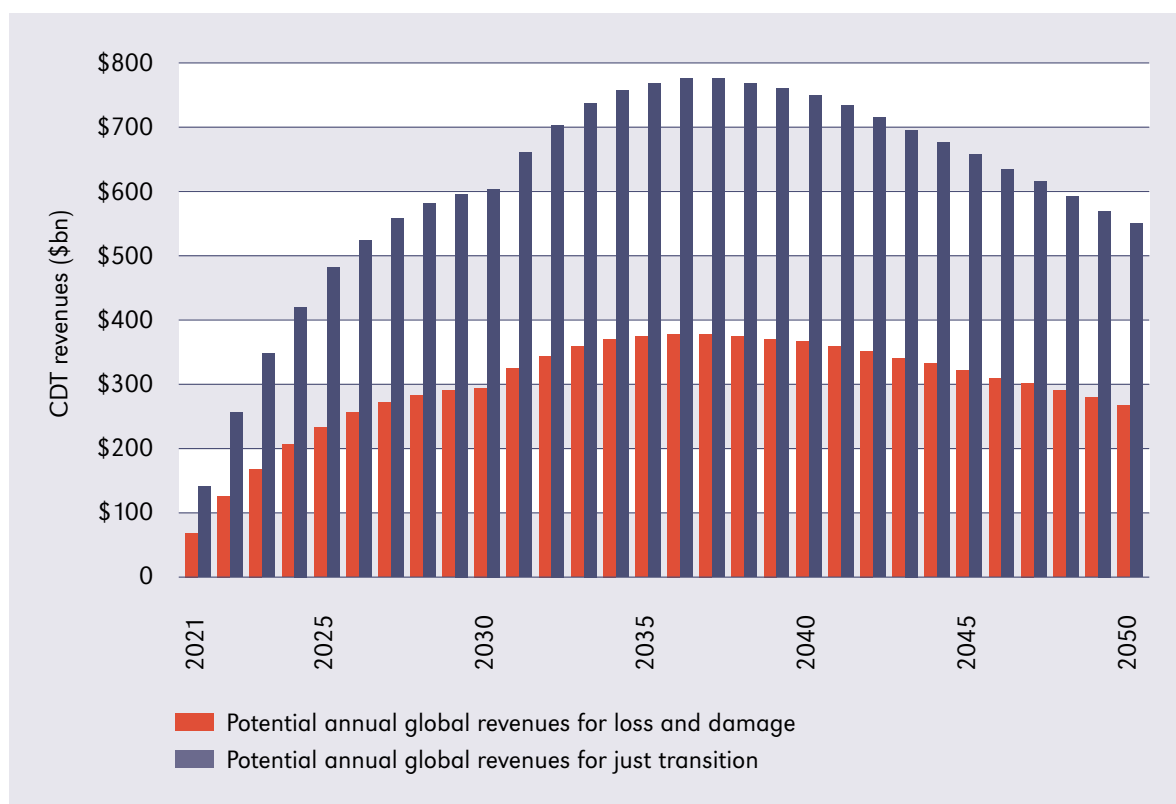
FIGURE 7 Potential CDT revenues across example countries for 2021

Country of fossil fuel extraction		Just transition revenues remitted to governments for domestic use (\$m)	Loss and damage revenues contributed to solidarity fund by fossil fuel extractors due to extraction activity within country (\$m)
High income	US	\$13,000	\$13,000
	United Kingdom	\$570	\$570
Upper middle income	China	\$38,000	\$16,000
	Colombia	\$1,400	\$610
Lower middle income	Indonesia	\$7,800	\$0
	Nigeria	\$1,900	\$0
Low income	South Sudan	\$80	\$0
	Chad	\$80	\$0

Potential annual revenue projections for the CDT annually up to 2050 for both loss and damage and just transition are shown in the graph below. Figures are calculated employing the following assumptions: the tax is introduced in 2021 at a rate of \$5 per tonne of CO₂e; implemented in every jurisdiction globally; with the tax rate increasing as described in section 3.1; and the fossil fuel phase out following the average of pathways 1-3 in the IPCC Special Report on 1.5°C.⁶⁶ For full details of the methodology, see Appendix. If implemented as we recommend, the CDT would raise in the region of \$210 billion in its first year.

Figure 8 illustrates the potential of the CDT to raise approximately \$300 billion a year in revenues for loss and damage, and hundreds of billions for just transition, between implementation and the total phasing out of fossil fuels in 2050. (The full data set with potential annual global CDT revenues for both loss and damage and just transition is available at www.stampoutpovery.org)

FIGURE 8 Potential annual CDT revenues 2021–2050



⁶⁶ Intergovernmental Panel on Climate Change. 2018. Global Warming of 1.5°C. http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf. Note pathway 4 has been excluded given its high reliance on yet to be developed negative emission technology.

4 Implementation

For the Climate Damages Tax (CDT) to be delivered, countries need to deem it feasible, desirable and commit sufficient political capital to make it happen.

In respect of feasibility, precedent for companies or entities, sending payment directly to an international fund – as opposed to through national treasuries – exists (as referenced earlier in section 2.1.1) through schemes such as the IOPCF. In terms of the financial plumbing of the CDT, as described in section 2.1.2, tax capture is based on the already existing payment of fees that fossil fuel entities are legally obliged to pay for the right to extract.

In respect of desirability, most countries, whether developing or developed, serve to gain from what is essentially an additional, and escalating, charge on the fossil fuel sector, which will meet the challenge of loss and damage costs as they inexorably rise in coming years; pay for communities and workforces to transition to fossil-free jobs, energy and transport; and help provide a price signal incentive to phase out fossil fuels before the middle of the century.

If we accept that governments, should they choose to adopt a measure like the CDT, have the power and competence to deliver it, then implementation resides in the investment of sufficient political capital to bring it about.

Great moments of international cooperation have historically arisen as a direct response to crises, witness the formation of the UN in the aftermath of the 2nd World War or the creation of the Global Fund for HIV/AIDS, TB and Malaria in response to the international Aids pandemic in the 1990s. The phenomenon of loss and damage has come about due to the failure of the international community to invest sufficiently in mitigation and adaptation in the last few decades. Each climate-fuelled hurricane, extreme drought season and piece of land disappearing below rising sea levels, graphically demonstrates through news channels around the world that climate change is not something that is happening in the future but is dramatically affecting people right now. An international response, in the form of a recognised body to which countries and communities can claim for the costs of loss and damage, is surely not a question of if, only a question of when.

Here we consider possible options for setting up a solidarity facility for loss and damage, concentrating on our preferred route via the UN Framework Convention on Climate Change (the UNFCCC).

Loss and damage in the context of the UNFCCC

Loss and damage has been part of the ongoing work of the international climate negotiations since 2007.⁶⁷ As climate impacts have become more severe the work has gained greater impetus, in fact it was directly after the incredible destruction of typhoon Haiyan on the Philippines in 2013 that the Warsaw International Mechanism for Loss and Damage (WIM) was established. Milestones, to date, include:

- **2013 – Warsaw International Mechanism for loss and damage** agreed with the function to mobilise finance for loss and damage
- **2015 – Paris Agreement** – includes agreement of loss and damage as a stand-alone element, a ‘third pillar’ requiring finance, alongside mitigation and adaptation.
- **2016 – Marrakech COP** – agreed to review the WIM in 2019 and set up a ‘strategic workstream’ on finance for loss and damage

Despite all countries agreeing in 2013 that finance would be mobilised to address loss and damage, and reinforcing this in the Paris Agreement – providing a list of loss and damage activities that deserve funding – there has yet to be any significant finance provided, certainly not at the scale of the problem. Countries gave themselves the opportunity to address this by agreeing to review the WIM, assessing whether it is meeting its mandate. This review will occur throughout 2019 culminating at COP 25 in November 2019. This is the perfect opportunity to set in train the steps to the introduction of the CDT and the supporting infrastructure to ensure that communities on the front line of climate change impacts get the funding they deserve.

The UNFCCC is the place where the world’s governments have agreed to deal with climate change and its impacts, and all countries have agreed to provide finance for loss and damage. The UNFCCC has a financial architecture and governance already established. For these reasons it is the most appropriate place to establish and manage the Climate Damages Tax.

⁶⁷ UNFCCC. 2018. Chronology – L&D workstream. <https://unfccc.int/topics/adaptation-and-resilience/workstreams/loss-and-damage-ld/chronology-ld-workstream#eq-2>

A path to a potential agreement of a loss and damage facility

In 2019, at the review of the WIM, it is decided to establish a negotiating stream with the objective of identifying both the scale and type of finance required, including potential sources of finance (such as the CDT), in order to set up a finance arm in a specific timeframe. The process leads to a COP decision at an annual meeting of the Parties along the following lines: a finance arm of the WIM is created to set up the loss and damage facility, managed by the Green Climate Fund, paid for by sources of finance, including the CDT, with a starting tax rate of \$5 per ton of CO₂e, increasing incrementally, with an operational review after a stated number of years.

Alternative approaches

There is no reason, however, that a set of regional governments could not establish such a loss and damage facility with funding from the CDT. For instance, the European Union and the African Union could work together, with other countries who are willing to participate, to create a regional approach. This could utilise existing finance architecture, for instance the African Development Bank (AfDB) or, if different regions were involved, the Asian Development Bank (ADB) or other similar multilateral institutions. The overarching definitions and other governance issues identified in section 2.2 would still need to be established, and could be done in conjunction with the WIM, or via a collaborative process with relevant governments, civil society, affected communities, unions and other stakeholders.

The participants of such a scheme may wish to implement a border tax adjustment in order to not disadvantage their industries against other countries who remain outside of the scheme. The European Parliament is already considering border tax adjustments against countries who do not meet Paris Agreement commitments.⁶⁸

5 Most frequently asked questions

5.1 Insurance – a problematic approach

Fundamentally, as described in the preface, insurance as a means of response to loss and damage is essentially unfair, because it puts the onus and the cost on those suffering its consequences, not on those who have caused it. The Polluter Pays principle and liability of fossil fuel companies for the effects of loss and damage – that they have known about and actively fought to obscure for decades – demands that fossil fuel companies rather than climate vulnerable countries should pay these costs.

In fora such as the UN climate talks, many rich countries push back on the delivery of dedicated loss and damage finance through such bodies as the WIM. They instead advocate for insurance to cover these risks. This approach has seen the establishment of InsuResilience Global Partnership,⁶⁹ which aims to provide insurance coverage to an additional 400 million poor and vulnerable people in developing countries. The World Bank, Germany and the UK have funded the Global Risk Financing Facility (GRIF)⁷⁰ to establish national disaster insurance programs. As well, the UK's Centre for Global Disaster Protection, has been set up to help developing countries 'use risk financing tools like insurance and contingent credit'.⁷¹ In the vast majority of these schemes, developing countries pay the insurance premiums.

However, the reality is that even if insurance was an acceptable approach, it is only ever going to provide a very small part of the solution. In the experience of Dominica a country that had taken out sovereign level risk insurance for the climate impacts of extreme hurricanes, insurance covered just 1.5% of the total loss and damage costs suffered in 2017.⁷² This has been found across multiple countries, even when the only loss and damage considered is that of the humanitarian needs, as illustrated in Figure 9.

68 European Parliament. 2018. Resolution of 25 October 2018 on the 2018 UN Climate Change Conference in Katowice, Poland (COP24). Paragraph 21. <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2018-0430+0+DOC+XML+V0//EN&language=EN>

69 Insuresilience. 2018. About the Insuresilience Global Partnership. <https://www.insuresilience.org/about/>

70 Insuresilience. 2018. World Bank Group, Germany and UK launch 145 million financing facility to support earlier action on climate and disaster shocks. <https://www.insuresilience.org/about/>

71 UK Government Department for International Development. 2017. Centre for Global Disaster Protection. <https://dfidnews.blog.gov.uk/2017/07/20/centre-for-global-disaster-protection/>

72 Julie-Anne Richards and Liane Schalatek. 2018. Not a Silver Bullet: Why the focus on insurance to address loss and damage is a distraction from real solutions. Heinrich Boell Stiftung North America. https://us.boell.org/sites/default/files/not_a_silver_bullet_1.pdf

FIGURE 9 Insurance payouts as percentage of total humanitarian costs

Risk pool	Country	Disaster	UN humanitarian appeal for emergency needs (\$m)	Payout amount (\$m)	Payout as percentage of humanitarian needs
ARC	Mauritania	Sahel drought, 2015	94.6	6.3	6.7%
ARC	Niger	Sahel drought, 2015	375.5	3.5	0.93%
ARC	Senegal	Sahel drought, 2015	59.5	16.5	28%
ARC	Malawi	El Niño drought, 2015–16	366	8.1	2.2%
CCRIF	Haiti	Tropical Cyclone Matthew, 2016	139	23.4	16.8%
PCRAFI	Tonga	Tropical Cyclone Ian, 2014	13	1.9	9.8%
PCRAFI	Vanuatu	Tropical Cyclone Pam, 2015	95	1.9	2%

Source: Richards and Schalatek (2018). Not a Silver Bullet: Why the focus on insurance to address loss and damage is a distraction from real solutions. Heinrich Boell Stiftung North America

Climate insurance is at best inefficient – and at worst a source of considerable profits for the insurance industry at the expense of climate vulnerable countries. In the Caribbean, the CCRIF SPC (formerly the Caribbean Catastrophe Risk Insurance Facility) has received \$293 million in premium payments and grants since being established in 2007. It has paid out \$131 million in claims generating \$105 million in profits to private insurance companies.⁷³

Further, climate insurance is typically targeted at one risk (that of drought, or of hurricane) and is measured very specifically (paying out on rainfall or wind speed for example). Climate change is increasing both the scale of climate impacts (more drought; greater wind speeds) but also the number and variety of risks – hurricanes are now being experienced with stronger wind speeds, but also more rain. Countries such as Malawi are finding that not only are droughts becoming more severe but so too are floods. The changing risk profile from climate change makes risks harder to forecast and insurance more difficult.

Moreover, providing insurance for climate-related loss and damage events is increasingly becoming commercially unviable. Insurance premiums that are within the ability of customers to pay depend on insurance providers being able to offer insurance to many different clients with an uncorrelated chance of making a claim. As climate change worsens, the likelihood of all customers needing to claim will increase. In this case, the premiums that insurers would need to charge to cover likely payouts would become unaffordable for climate vulnerable countries. Even if high income countries were to subsidise commercial insurance premiums for this level of cover, it would be a poor choice as other options such as publically funded social safety nets are likely to offer better value for money.

73 Jubilee Debt Campaign. 2018. Don't owe, shouldn't pay. https://jubileedebt.org.uk/wp/wp-content/uploads/2018/10/Dont-owe-shouldnt-pay_10.18.pdf

5.2 Incidence – assessing the tax burden

The fossil fuel industry has spent decades fuelling climate denial campaigns, while doubling the coal, oil and gas they extract and sell and making hundreds of billions of dollars in profits whilst causing climate change. They should be the ones paying the cost of the CDT, and where possible, governments should regulate to make this happen, reducing fossil fuel industry profits and making them a less attractive investment option. For instance, governments could control the cost passed on to consumers, requiring fossil fuel corporations to demonstrate that they are taking the cost from their profits. For example, in Great Britain, OFGEM, the government regulator, controls the price of gas and electricity so could shelter consumers from cost increases. The UK does not currently regulate prices for petrol and diesel, but did consider this in 2012. Other countries, such as Austria and Denmark, have introduced petrol price controls and the European Commission has said it would promote the policy.⁷⁴

If the CDT were passed through to consumers, in whole or in part, it would establish a price signal discouraging fossil fuel use and encouraging a switch to renewables. Recognising that low income communities will have the most difficulty switching to energy efficiency and low carbon energy and transport options, the CDT will raise significant finance for just transition, to help fund programmes for low income communities to shift to public transport, cycling & walking, or electric cars, to insulating homes, switching to energy efficient appliances and installing renewable and community power. These programs have already begun, with 16 countries announcing some form of ban on fossil fuel (petrol and diesel) vehicles, including Korea, Denmark, Germany, India, the UK, and China.⁷⁵ The CDT would provide finance for these countries to help low income communities with the transition.

In most countries fuel is a highly competitive market, making it likely that less than the full cost increase from the CDT will be passed to consumers. **If passed through, the price impact of the CDT on different fuels within its first few years would be minimal in comparison with normal annual price volatility. At \$5 per tonne of CO₂e, the CDT would add just over one cent to the average global price of petrol of \$1.17 per litre, a 1.1% price increase.⁷⁶ For details of methodology, see Appendix. For comparison, in the UK petrol prices typically fluctuate 10% or more within a year.⁷⁷**

Reliance on coal and gas, as opposed to oil, varies greatly between countries. At the high end of the scale, Australia relies on coal for 63% of its electricity production. In the last ten years, electricity prices in Australia have increased by 44% in real terms, driven by poor regulation, incorrect forecasting and profit taking rather than any significant increase in the cost of coal or by emission reduction policies^{78 79} (electricity emissions have reduced only modestly by 13 percent across the ten years). The potential increase in electricity prices due to CDT levies on coal extraction during its first few years are likely to be minimal in comparison.

Regarding investment decisions, the IPCC Special Report of 1.5°C notes that carbon prices below \$10 per tonne of CO₂e are too low to outweigh the ‘noise’ from the volatility of oil markets, other price dynamics and regulatory policies in energy, transportation and industry.⁸⁰ Therefore for the first few years the impact of the CDT would be as a signal to investors of decreased future profitability of fossil fuels, and to consumers and decision makers of future higher costs. This price signal would help ramp up investment in and demand for programs to provide alternatives to fossil fuel use, such as a switch to electric vehicles, and a commitment to end the sale of internal combustion engine cars. The CDT would raise significant and ring-fenced revenues in fossil fuel extracting states to fund this transition.

It is important to note that direct government subsidies to fossil fuels play an extremely negative role in encouraging fossil fuel use, and transferring money from taxpayers to big oil, gas and coal corporations. These subsidies are huge – for 76 countries they were between \$373 and \$500 billion in 2015. In the UK subsidies have grown over the last decade to up to £14.6 billion in 2016. It is essential for the transition away from fossil fuels, and for climate justice, that these direct subsidies are removed.

74 The Telegraph. 2012. Government warns petrol companies over prices. <https://www.telegraph.co.uk/finance/oilprices/9299447/Government-warns-petrol-companies-over-prices.html>

75 Wikipedia (27th November 2018) List of countries banning fossil fuel vehicles. https://en.wikipedia.org/wiki/List_of_countries_banning_fossil_fuel_vehicles

76 For the week of 1 October 2018, the average global price of petrol was USD 1.17 (0.84 in the US, 1.14 in China, 1.70 in the UK and 2.07 in Norway). Global Petrol Prices. 2018. https://www.globalpetrolprices.com/USA/gasoline_prices/

77 Petrol Prices. 2018. <https://www.petrolprices.com/the-price-of-fuel.html>

78 David Blowers. 2018. A high price for policy failure: the ten-year story of spiralling electricity bills. <https://theconversation.com/a-high-price-for-policy-failure-the-ten-year-story-of-spiralling-electricity-bills-89450>

79 The Guardian. 2017. Australia's greenhouse gas emissions highest on record. <https://www.theguardian.com/environment/2017/dec/11/australias-transport-emissions-in-past-year-the-highest-on-record>

80 Intergovernmental Panel on Climate Change. 2018. Global Warming of 1.5°C. Chapter 4. p92. http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf

5.3 The CDT in the context of other carbon taxes

By beginning from a perspective of climate justice, the CDT is different from the majority of carbon tax proposals in that its primary objective is to address the injustice at the heart of climate change: namely, that the fossil fuel industry is profiting whilst poor communities pay the true price of their product. Other carbon price proposals, whether they are emissions trading schemes or carbon taxes, take an economic rationalist perspective that putting a price on carbon is the best way to phase out carbon emissions. The High Level Commission on Carbon Prices concluded that prices of at least \$40–80 per tonne of CO₂ by 2020 and \$50–100 per tonne of CO₂ by 2030 are required, alongside complementary policy, to keep global warming below 2°C. However, the majority of carbon prices are currently below \$10 per tonne of CO₂. This level is too low to make an impact – insufficient to outweigh the ‘noise’ from the volatility of oil markets, other price dynamics and regulatory policies in energy, transportation and industry.⁸¹ Therefore although the CDT will strengthen carbon price signals and assist with the phase out of fossil fuels, it must be embedded within a purposeful plan that will require complementary regulations and prices.

The CDT also differs from other carbon price schemes in that it is administratively simple, and hence harder for big business to game. By targeting the very beginning of the carbon cycle – where fossil fuels are extracted – we keep the number of tax paying entities relatively low. By setting a flat rate of tax globally, and by reporting transparently on what is being paid, it will be more difficult for the fossil fuel industry to lobby politicians for preferential rules, and prices. Other trading schemes, such as the EU ETS, have been so weakened by industry lobbying as to be almost entirely ineffectual.⁸²

Other carbon price systems and proposals have been used by polluters to stave off more direct regulatory action, with the EU ETS a case in point.⁸³ The proposal made by some Republicans in the US in 2017 for a carbon tax at \$23 per tonne of CO₂ may play well in the media but is problematic since it is in return for the removal of carbon regulations and to inoculate polluting industry against future lawsuits and liability.⁸⁴

It is key that the CDT is placed on top of meaningful existing carbon prices and regulations, and that the right of communities suffering the worst impacts of climate change to exercise their claims to compensation in the courts is permitted and encouraged.

Finally, the CDT differs from the majority of carbon price proposals because it specifically targets the cost of fossil fuel *extraction*, rather than fossil fuel *use*. It would therefore help create a shift in supply side investment decisions, to complement the demand side action of carbon prices of fossil fuel use, as a price signal to investors in the fossil fuel industry that fossil fuel extraction will be of declining profitability and alternative business models more desirable.

81 Intergovernmental Panel on Climate Change. 2018. Global Warming of 1.5°C. Chapter 4. p92. http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf

82 Carbon Market Watch. 2017. Beyond the EU ETS: Strengthening Europe’s Carbon Market Through National Action. <https://carbonmarketwatch.org/wp-content/uploads/2017/12/CMW-BEYOND-THE-EU-ETS-STRENGTHENING-EUROPE%E2%80%99S-CARBON-MARKET-THROUGH-NATIONAL-ACTION.pdf> also Corporate Europe Observatory. 2017. Emissions trading reform: romancing the polluters. <https://corporateeurope.org/blog/emissions-trading-reform-romancing-polluters>

83 Corporate Europe Observatory. 2015. EU Emissions Trading: 5 reasons to scrap the ETS <https://corporateeurope.org/environment/2015/10/eu-emissions-trading-5-reasons-scrap-ets>

84 David Roberts. 2018. Energy lobbyists have a new PAC to push for a carbon tax. Wait, what? <https://www.vox.com/energy-and-environment/2018/6/22/17487488/carbon-tax-dividend-trent-lott-john-breaux>

Conclusion

In this paper, we started by describing that already, at only 1°C of global warming, climate change fuelled events including extreme heat waves, devastating droughts, increasingly destructive hurricanes and rising sea levels, are examples of loss and damage from climate change. These impacts go beyond what people and ecosystems can adapt to and as such fall into a different, newly-recognised, category of loss and damage. The UN climate negotiations recognised this by establishing the Warsaw International Mechanism for Loss and Damage (the WIM) in 2013, after the devastation of typhoon Haiyan on the Philippines that year.

As a more recent example of loss and damage, we described the experience of Dominica following Hurricane Maria in September 2017 and posed the question that rather than having to go cap in hand to the international community every time a country faces such circumstances, whether as a result of sudden disaster or slow onset events, should they not instead have recourse to an international loss and damage facility, so that the people affected can receive the funds they need quickly and efficiently?

In terms of how it is funded, we set out that the fossil fuel industry for reasons of both historical and present culpability for the problem of planetary warming, have a responsibility to fund the solution. In this regard, we propose the introduction of the climate damages tax in 2021, at a starting rate of \$5 per tonne of CO₂e on the extraction of each tonne of coal, barrel of oil, or cubic litre of gas, which would raise at the outset in the region of \$210 billion, with the rate initially increasing by \$5 per tonne annually.

Cases of litigation against fossil fuel companies for the damage that stems from their activities are escalating with parallels to those famously taken against the tobacco industry in the past. It is only a matter of time before legal precedent is set. Given this direction of travel, it is now not only timely but in the best interests of both developing and developed countries, to facilitate the early introduction of the Climate Damages Tax. Essentially, the time has arrived for an additional, and escalating, charge on the fossil fuel sector, in order to meet the challenge of loss and damage costs as they inexorably rise in coming years, and to pay for vital just transition policies.

In respect of implementation, we propose that all efforts are made to ensure that the review of the WIM in 2019 sets an ambitious and bold timetable for the establishing of a finance arm, with a rapid COP decision for the establishing of a loss and damage facility, managed by the Green Climate Fund, financed by measures including the Climate Damages Tax.

In closing, let us be in no doubt that it is high time that the fossil fuel industry pays for the climate damage its products cause. It is high time for a solidarity facility for loss and damage so vulnerable countries have recourse to substantial and speedily delivered funds when they need them most. It is high time the fossil fuel industry paid a tax to assist communities with transition to fossil-free jobs, energy and transport. This is why the Climate Damages Tax is an idea whose time has come. We urge concerned citizens, organisations and countries to join us to make it happen.

Appendix: Methodology

Estimating potential CDT revenues

Relating to figure 7 on page 19 showing potential CDT revenues across example countries

The methodology makes the following assumptions that the tax is introduced in 2021 at a rate of \$5 per tonne of CO₂e; implemented in every jurisdiction globally; with the tax rate increasing as described in section 3.1; and the fossil fuel phase out following the average of pathways P1, P2 and P3 in the IPCC Special Report on 1.5°C (described below).⁸⁵ All numbers should be considered illustrative only.

By country of extraction in 2021

1. Oil, gas and coal production *volumes* in 2017 for each country⁸⁶ used for 2021, with the assumption that fossil fuel use peaked in 2017 and will stay roughly constant until 2021 (in million tonnes – for gas converted from million tonnes equivalent)
2. Estimates of CO₂e embedded in oil, gas and coal volumes in (kgCO₂e/tonne)⁸⁷ used to calculate *gross CO₂e* embedded in oil, gas and coal produced for each country in 2021 (in tonnes CO₂e)
3. Non-energy use⁸⁸ factor for oil (8.018%), gas (1.856%) and coal (0.016% – and therefore low enough to ignore)⁸⁹ used to calculate *net CO₂e* embedded in oil, gas and coal volumes produced for each country in 2021 (in tonnes CO₂e)
4. CDT cost of \$5/tonne CO₂e used to calculate *CDT revenues* from oil, gas and coal for each country in 2021 (in \$m) and totalled to give CDT revenues from *all three fuels* for each country in 2021 (in \$m)
5. All countries categorised into high, upper middle, lower middle and low income.⁹⁰ Proportion of CDT revenues allocated to loss and damage solidarity facility is 50% for high income countries, 30% for upper middle income countries and 0% lower middle and low income countries
6. Loss and damage solidarity facility proportion applied to CDT revenue across all three fuels for each country in 2021 to give CDT revenues for *loss and damage* across all three fuels for each country in 2021 (in \$m), leaving CDT revenues for *just transition* across all three fuels for each country in 2021 (in \$m)

Figures across all countries are available at www.stampoutpoverty.com

85 Intergovernmental Panel on Climate Change. 2018. Global Warming of 1.5°C. http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf. Note pathway 4 has been excluded given its high reliance on yet to be developed negative emission technology.

86 BP. 2018. Statistical Review of World Energy. <https://www.bp.com/content/dam/bp/en/corporate/pdf/energy-economics/statistical-review/bp-stats-review-2018-full-report.pdf>

87 UK Government. 2018. Greenhouse gas reporting: conversion factors 2018. <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2018>

88 Non-energy uses for oil include use as lubricants, petrochemicals, waxes; for gas, use as fertilizer; and for coal as pigment and carbon fibre

89 Richard Heede. 2014. Tracing anthropogenic CO₂ and methane emissions to fossil fuel and cement producers 1854-2010. *Climatic Change*, vol. 122(1). p229-241. <http://link.springer.com/article/10.1007/s10584-013-0986-y?view=classic>

90 World Bank Group. 2018. World Bank country and lending groups. <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

Relating to figure 8 on page 19 showing potential annual CDT revenues 2021–2025 across example countries

By year, 2021–2050

1. Net CO₂e embedded in oil, gas and coal volumes produced for each country in 2021 (in tonnes CO₂e) (calculated in step 3 above) totalled to give *global* net CO₂e embedded across each fuel in 2021 (in tonnes CO₂e)
2. Respective annual forecast global decreases in production volumes of oil (0.1%), gas (0.05%) and coal (0.1%) (from approximated average of IPCC SR1.5 pathways P1, P2 and P3⁹¹) applied to global net CO₂e embedded across each fuel in 2021 to give *annual* global net CO₂ embedded across each fuel up to 2050 (in tonnes CO₂e)
3. Annual global net CO₂ embedded across each fuel up to 2050 totalled for each year to give annual global net CO₂ embedded across *all three fuels* up to 2050 (in tonnes CO₂e)
4. Rate of CDT rate increase of \$5 until 2030 and \$10 from 2031–50 applied to starting CDT rate of \$5/tonne in 2021 to give *annual* CDT rate up to 2050
5. Annual CDT rate applied to annual global net CO₂ embedded across all three fuels up to 2050 to give *annual* global CDT revenues across all three fuels up to 2050 (in \$m)
6. CDT revenues from all three fuels for each country in 2021 (calculated in step 4 above) totalled to give *global* CDT revenues in 2021 across all three fuels. CDT revenues for loss and damage in 2021 for each country across all three fuels (calculated in step 6 on previous page) totalled to give *global* CDT revenues in 2021 for *loss and damage* across all three fuels (in \$m). Ratio calculated of global CDT revenues in 2021 across all 3 fuels, to global CDT revenues in 2021 for loss and damage across all 3 fuels.

The final step assumes that:

- Between now and 2050, countries do not change between income categories, so the proportions of their gross CDT revenues being allocated to loss and damage and to just transition every year remain constant
 - Between now and 2050, countries' share of the (decreasing) global extraction of the different fuels does not change. So the proportions of global CDT revenues being allocated from each fuel to loss and damage and to just transition every year remain constant.
7. Ratio of global CDT revenues: global CDT revenues for L&D in 2021, applied to global CDT revenues across all three fuels *up to 2050* to give CDT revenues for *loss and damage* across all three fuels up to 2050. Inverse ratio applied to give global CDT revenues for *just transition* across all three fuels up to 2050 (in \$m)

Potential annual revenues data are available at www.stampoutpoverty.org

IPCC Special Report on Global Warming of 1.5°C

Relating to section 3.1 on page 16

The Intergovernmental Panel on Climate Change (IPCC) 2018 special report *Global Warming of 1.5°C* models four pathways that restrict global warming to 1.5°C above pre-industrial levels. Each find that by 2030, net CO₂ emissions must fall by about 45% from 2010 levels, and must fall to zero by 2050. Each pathway would 'require rapid and far-reaching transitions in energy, land, urban and infrastructure, and industrial systems (that) imply deep emissions reductions in all sectors... and a significant upscaling of investments.'

Pathway 1: Innovations result in the decarbonisation of energy supply, and lower energy demand while living standards rise, with afforestation the only Carbon Dioxide Removal (CDR) option. Emissions fall by 58% relative to 2010 by 2030, and by 93% by 2050, with the share of energy from coal falling by 97%, oil by 87% and gas by 74% relative to 2010 levels.

91 Intergovernmental Panel on Climate Change. 2018. Global Warming of 1.5°C. http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf.

Pathway 2: Innovations, land reforms and changing consumption patterns allow decreased energy intensity while living standards rise. Some Bioenergy and Carbon Capture and Storage (BECCS) is used. Emissions fall by 47% relative to 2010 by 2030, and by 95% by 2050, with the share of energy from coal falling by 77%, oil by 50% and gas by 53% relative to 2010 levels.

Pathway 3: Technological and social development follows historical patterns. Emissions reductions are mainly achieved by changes in production methods rather than reductions in demand. Emissions fall by 41% relative to 2010 by 2030, and by 91% by 2050, with the share of energy from coal falling by 73%, oil by 81% but gas rising by 21% relative to 2010 levels.

Estimating petrol prices

Relating to section 5.2, calculating price impact of CDT on price of petrol

Total global oil produced in 2017 ⁹²	4,387m tonnes
Total CDT revenues from oil	\$64,608m
CDT revenues / tonne oil produced	\$ 14.7
CDT revenues / litre oil produced	\$0.0126
Global average petrol price in Oct 2018 / litre ⁹³	\$ 1.17
Price increase with 100% of CDT revenues added	1.1%

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92 BP. 2018. Statistical Review of World Energy. <https://www.bp.com/content/dam/bp/en/corporate/pdf/energy-economics/statistical-review/bp-stats-review-2018-full-report.pdf>

93 Global Petrol Prices. 2018. https://www.globalpetrolprices.com/USA/gasoline_prices



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