



Article title: A short history of the successes and failures of the international climate change negotiations

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Preprint statement: This article is a preprint and has not been peer-reviewed, under consideration and submitted to UCL Open: Environment Preprint for open peer review.

Funder: NERC

DOI: 10.14324/111.444/000178.v1

Preprint first posted online: 14 August 2022

Keywords: climate change, negotiations, UNFCCC, COP26, COP27, Paris Agreement, Kyoto Protocol, net zero, climate emergency, environmental social movements, The Environment, Policy and law, Climate, Sustainable development

A short history of the successes and failures of the international climate change

negotiations

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Abstract

The last 30 years have been a period of intense and continuous international negotiation to deal with climate change. During the same 30 years, humanity has doubled the amount of anthropogenic carbon dioxide in the atmosphere. There has, however, been progress and some notable successes. In 2015 at COP21, 196 countries signed the Paris Agreement stating that they would limit global temperatures to well below 2°C above pre-industrial levels and would pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. This was followed up at COP26 in Glasgow with many countries pledging to go net zero emissions by the middle of the century. But currently these pledges, if fulfilled, will only limit global average temperature to 2.4°C to 2.8°C. This article reviews the history of international climate change negotiations and examines what the key objectives are for future COP meetings.

Introduction

In 1989 Margaret Thatcher, the Prime Minister of the UK, gave an address to the UN outlining the science of climate change, the threat it posed to all nations, and the actions needed to avert the crisis. She summed up by saying: “We should work through this great organisation and its agencies to secure world-wide agreements on ways to cope with the effects of climate change, the thinning of the ozone layer, and the loss of precious species.” (Margaret Thatcher Foundation, 2020) This sentiment was echoed in similar speeches by George Bush Senior, President of the United States, including one in 1992 when he outlined his ‘Clear Skies’ and ‘Global Climate Change’ initiatives at the National Oceanic and Atmospheric Administration (Bell, 2021).

By the end of the 1980s the threat of climate change had finally been recognized. This was due to the upturn in the global temperature record, the so called ‘hockey stick’ at the end of the 1980s (Maslin, 2021). This led to the rediscovery of the underpinning science of climate change that had been essentially carried out and settled by the mid-1960s (Weart, 2008). Our increased knowledge of how changes in atmospheric CO₂ controlled past climate change and significant improvements in supercomputer modelling of our climate system added to our knowledge of anthropogenic climate change (Maslin, 2021). There was also the emergence of global environmental awareness in the late 1980s driven by a series of catastrophic local pollution events and the discovery of the ozone hole over Antarctica (Corfee-Morlot et al., 2007). By the beginning of the 1990s climate change had become a global issue - even if it was still a highly disputed one (Oreskes and Conway, 2012).

The Intergovernmental Panel on Climate Change (IPCC) was set up in 1988 and produced its very first science report in 1990 (Figure 1). Two years later, with support from leaders from all around the world, the UN held the Rio Earth Summit - officially called the United Nations Conference on Environment and Development (UNCED) - to help member states cooperate on sustainability and protecting the world's environment. The Summit was a huge success and led to the *Rio Declaration on Environment and Development*, the local sustainability initiative called *Agenda 21* and *Forest Principles* (Gupta, 2014). Following negotiations at UN General Assembly in December 1990, the *Framework Convention on Climate Change (UNFCCC)* that underlies the negotiations to limit global greenhouse gas emissions was open for parties to sign up to at UNCED. The conferences also allowed the parties to join the *United Nations Convention to Combat Desertification* and the *Convention on Biological Diversity*. The Rio Earth Summit also laid the foundations for the Millennium Development Goals and the subsequent Sustainable Development Goals.

The United Nations Framework Convention on Climate Change (UNFCCC) came into force on 21 March 1994. As of August 2022, the UNFCCC has 196 parties. The UNFCCC currently operates by "agreement by consensus". Decisions are taken by consensus only because there has been no agreement on the draft rules of procedure and the default is consensus – which of course allows any country to block any decision. One essential principle that is enshrined within UNFCCC process, is 'common but differentiated responsibilities' (Gupta, 2014). The latter was born because the UNFCCC acknowledges that different countries have historically emitted varying quantities of greenhouse gases (GHGs) and therefore need to make greater or lesser efforts to reduce their emissions. For example, from 1850 to 2021 the USA emitted over 20 per cent of global cumulative CO₂ emissions compared with India's 3.4 per cent.

Today, annual per capita emissions of CO₂ in the USA are about ten times greater than in India. Many parties within the UNFCCC support the principle of 'contraction and convergence' - the idea that every country must reduce its emissions and that all countries must converge on net zero emissions (Maslin, 2021). The importance of a net zero emissions target was agreed in the 2015 Paris agreement and the seminal IPCC report on Global Warming of 1.5°C published in 2018 showed that to achieve 1.5°C there had to be zero CO₂ emissions by about 2050 and then negative CO₂ emissions for the rest of the century (IPCC, 2018).

COP3 Kyoto 1997

Since the UNFCCC was set up, the nations of the world, 'the parties', have met annually at the 'Conference of the Parties' (COP) to move negotiations forward (Figure 1). Only five years after the UNFCCC was created, at COP3 in December 1997, the first international agreement to cut GHG emissions was drawn up, the Kyoto Protocol (Gupta, 2014). This restated the UNFCCC general principles for a worldwide treaty on cutting GHG emissions and, more specifically, that all developed nations would aim to cut their emissions by 5.2% relative to 1990 levels by 2008–12. The USA, Al Gore signed the Kyoto Protocol in 1998, but under the leadership of President George Bush, the US did not ratify the Kyoto Protocol at Bonn in 2001. With the USA producing about one-quarter of the world's CO₂ pollution at the time, this was a big blow for the treaty. Moreover, the targets set by the Kyoto Protocol were made more flexible during the Bonn meeting to ensure that Japan, Canada, and Australia would join. Australia finally made the Kyoto Protocol legally binding in December 2007.

To balance out the historic legacy of emissions by developed countries, the treaty did not include developing countries, but it was assumed that developing countries would eventually

join the post-2012 agreement. The Kyoto Protocol came into force in February 2005, after Russia ratified the treaty, thereby meeting the requirement that at least 55 countries representing more than 55 per cent of the global emissions were participating (Gupta, 2014).

COP15 Copenhagen 2009

In 2007, the Nobel Peace Prize was shared, in equal parts, between the IPCC and Al Gore 'for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change'. The world had huge expectations for COP15 (Copenhagen) to deliver in 2009, despite coming just a year after the global financial crash. New quantitative commitments were expected to ensure a post-2012 agreement and seamless transition beyond the Kyoto Protocol. Barack Obama had just become President of the USA, raising hopes of a more constructive approach. The EU had prepared an unconditional 20% reduction of emissions by 2020 on a 1990 baseline and a conditional target rising to 30% if other developed countries adopted binding targets. Many other developed countries also had something to offer: Norway was willing to reduce emissions by 40 per cent and Japan by 25 per cent from a 1990 baseline; even the USA offered a 17 per cent reduction on a 2005 baseline, which was an equivalent drop of four per cent compared with 1990. The scene was set, but the Copenhagen conference went horribly wrong: 'hopenhagen' became 'nopenhagen'. First, the Danish government underestimated the interest in the conference and provided a venue that was too small; in the second week, when all the high-powered national ministers and their entourages arrived, there was insufficient room, meaning many NGOs and observers were denied access to the negotiations. Second, it was clear that the negotiators were unprepared for the arrival of the ministers and that there was no agreement. This led to the leaking of 'The Danish Text',

subtitled 'The Copenhagen Agreement', and the proposed measures to keep average global temperature rise to 2°C above pre-industrial levels (Gupta, 2014). An argument then ensued between developed and developing nations because a brand-new text simply appeared in the middle of the conference. Developing countries accused developed ones of working opaquely and making an agreement that suited their own interests without seeking consent from developing nations (Byrne and Maslin, 2015). Lumumba Stanislaus Di-Aping, chairman of the G77, said, 'it's an incredibly imbalanced text intended to subvert, absolutely and completely, two years of negotiations. It does not recognize the proposals and the voice of developing countries', Guardian (2009).

The final blow to forging a global agreement on binding targets came from the USA. Barack Obama, arriving only two days before the end of the conference, convened a meeting with the BASIC (Brazil, South Africa, India, and China) countries only, which excluded other UN nations, and created the Copenhagen Accord (Maslin, 2021). This recognized the scientific case for keeping temperature rises below 2°C, but did not contain a target baseline, nor commitments for reducing emissions to achieve it. Earlier proposals that would have aimed to limit average temperature rise to 1.5°C and cut CO₂ emissions by 80 per cent by 2050 were dropped. But all mention of a 1.5°C was continually blocked by China. The resulting agreement was non-binding and countries could provide their own voluntary targets. It was also made clear that any country that signed up to the Copenhagen Accord was also effectively stepping out of the Kyoto Protocol, hence the USA was able to move away from the binding targets of Kyoto Protocol, which should have been enforced until 2012. A weak voluntary commitment approach was adopted. The Bolivian delegation summed up the way the Copenhagen Accord was reached: 'anti-democratic, anti-transparent and unacceptable'

Guardian (2009). It was also not clear what legal status the Copenhagen Accord had because it was only 'noted' by the parties, not adopted, as only 122, subsequently rising to 139 countries, agreed to it (Bryne and Maslin, 2015).

Trust in the UNFCCC negotiations had another setback when, in January 2014, it was revealed that the US Government negotiators had information during the conference obtained by eavesdropping on meetings of other conference delegations. Documents leaked by Edward Snowden suggested the US National Security Agency (NSA) had monitored communications between countries before and during the conference. The leaked documents revealed that the NSA provided US delegates with advance details of the Danish plan to 'rescue' the talks should they flounder, and laid bare China's efforts to coordinate its position with India before the conference, Guardian (2014).

COP21 Paris 2015

The failure of COP15 in Copenhagen and its voluntary commitments cast a long shadow over subsequent COP meetings, compounded by the Wikileaks revelation that US aid funding to Bolivia and Ecuador was reduced because of their opposition to the Copenhagen Accord, Guardian (2010). It would take over five years for the negotiations to recover from the difficulties created at Copenhagen. At COP16 in Cancun and COP17 in Durban the UNFCCC negotiations were slowly rejuvenated with the aim of agreeing a new round of negotiations and the underlying principles. There were some important political breakthroughs, including the agreement on the 2°C target, establishment of the Green Climate Fund, the setting of the \$100bn a year funding target, and the notion of voluntary emission pledges for all – the basic backbone of the Paris agreement. In parallel, significant progress was made in REDD+

(Reduced Emissions from Deforestation and Forest Degradation), including safeguards for local people. It was not, however, until COP18 in Doha in December 2012 that a second commitment period for the Kyoto Protocol lasting eight years was agreed, to commence from January 2013. This ensured that all Kyoto mechanisms and accounting rules would remain intact, and that parties could review their commitments with a view to increasing ambition. All this laid the foundations for the possibility of a future global climate agreement, which was finally agreed at COP21 in Paris in 2015.

The climate negotiations in Paris 2015 were a huge success primarily because the French hosts understood the grand game of international negotiation and used every trick in the diplomatic playbook to get countries working together to achieve an agreement signed by all (Lewis, 2015). The Paris Agreement sets a goal to hold temperatures to “well below 2°C above pre-industrial levels” and “pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels”. Paris was a high-stakes game of geopolitical poker. Surprisingly, the least powerful countries did much better than expected. The climate talks were subject to a series of shifting alliances going beyond the usual dichotomy between income-rich global North and income-poor global South countries. Central to this was, firstly, US-Chinese diplomacy — both agreed to limit emissions in 2014 under the U.S.-China Joint Presidential Statement on Climate Change. Secondly, a new grouping of countries under the banner of The Climate Vulnerable Forum, including Small Island Developing States, pushed the 1.5°C target higher up the political agenda, so much so that it is mentioned in the key aims of the agreement (Lewis, 2015). Political and civil society support generated from the success of the Paris Agreement created the preconditions for the IPCC to land its special report on Global Warming of 1.5°C to an attentive global community. Highlighting not just the stark

differences between the impact of a 1.5°C and 2°C world (IPCC, 2018), the report also modelled pathways of how a 1.5°C world could be achieved: (1) a 45 per cent decline in CO₂ emissions from 2010 levels by 2030; (2) net zero CO₂ emissions by 2050; and (3) carbon dioxide removal thereafter for the rest of the century. The quicker the world could get to net zero, the less CO₂ that would need to be sequestered from the atmosphere between 2050 and 2100 (Goodall, 2020).

Crucially, the Paris Agreement was intended to be the start of a process of ratcheting up mitigation ambition (Figure 2). Collectively, initial pledges were necessary but far from sufficient. Even as late as 2019, assuming all national mitigation pledges were fulfilled, the world would still warm by about 3°C or more (Maslin, 2019).

The role of global environmental social movements

There have been four main waves of environmental social movements. The first was in 1970s represented by the response to Rachel Carson seminal book 'Silent Spring' (1962). Focused on pollution, pesticides and destruction of local environments, many of the key environmental NGOs were formed around this movement, for example Friends of the Earth (1969), Greenpeace (1971) and WWF (1961). The second wave sprung up in the late 1980s and early 1990s when a growing realization emerged that humanity's environmental impact was global. This movement was galvanized by the discovery of the ozone hole over Antarctica and the emerging climate change threat. This movement climaxed at the Rio Summit. The third wave was in 2008 and 2009, focusing on the hope of a major climate deal at the Copenhagen climate conferences. In the UK it was very successful as political parties looked to 'rebrand' and lead to the Climate Change Act being legislated with near unanimous support

in 2008 (Bryne, 2019). As we know, Copenhagen ended in failure due to a lack of international leadership, a change in direction driven by the US and China, lobbying by powerful climate change deniers and the global maelstrom of the 2008 global financial crash (Maslin, 2021). For almost 10 years the global environmental movement was held back due to the overwhelming focus on revitalising the global economy. This all changed in 2018.

The fourth wave of the global environmental social movement started in 2018 (Figueres and Rivett-Carnac, 2020). In May 2018, Extinction Rebellion was founded in the UK and launched in October 2018 with over 100 academics calling for action on climate change. Using non-violent civil disobedience, Extinction Rebellion aims to compel governments around the world to avoid tipping points in the climate system and stem biodiversity loss to prevent both social and ecological collapse (Lewis and Maslin, 2018). In November 2018 and April 2019 the group brought central London to a standstill. Extinction Rebellion quickly spread to at least 60 other cities around the world.

In August 2018, Greta Thunberg - at the age of 15 - began spending her school days outside the Swedish Parliament holding a sign saying *Skolstrejk för klimatet* (School strike for climate) calling for stronger action on climate change. Soon, other students from around the world started similar school strikes on a Friday and called the movement 'Fridays for Future' (Thunberg, 2019). It has been estimated that, by the beginning of 2020, over 4500 strikes across over 150 countries, involving five million school children had taken place (Fridays for Future, 2020). These strikes were interrupted by the pandemic but have resumed all over the world, including a high profile one in Glasgow during the COP26 negotiations.

In 2018 and 2019, three influential IPCC reports were published. First, in 2018, the Special Report on Global Warming of 1.5°C was launched, widely regarded as its most important report in its 30-year history. Second, came the Special Report on Climate Change and Land and, more specifically, how climate change would impact desertification, land management, food security and terrestrial ecosystems (IPCC, 2019a). The third was its Special Report on the Ocean and Cryosphere showing the impacts of climate change on the speed of melting ice sheets, mountain glaciers and sea ice, and their implications for sea level rise and marine ecosystems (IPCC, 2019b).

There is a school of thought that we have now entered a fifth wave of social movement – radical direct action. Borne out of the frustration that many climate campaigners feel from the lack of action by Government and many corporations, direct actions have included: Insulate Britain protestors gluing themselves to motorways; Just Stop Oil protestors gluing themselves to famous painting; protestors letting down the tyres of large SUVs in cities; and the sabotaging of oil pipelines and refineries (Gayle, 2022). Many activists now see direct action and violence as the only way that government authorities will take note and act – in the US this has been defined as eco-terrorism (FBI, 2002).

These new social movements, inspired by the latest science, have compelled some corporations to take a leading role in decarbonising the economy (Hawken, 2018). Microsoft has set the agenda for the technology sector with an ambitious target to become carbon negative by 2030. By 2050 it wants to remove all the carbon pollution from the atmosphere that it and its supply chain has emitted since the founding of the company in 1975. Sky has set the agenda for the media sector, already being carbon neutral — it has pledged its entire

value chain will go carbon negative by 2030. BP has also declared that its company operations will be carbon neutral by 2050 by eliminating or offsetting over 415 million tonnes of CO₂ emissions – it will still sell oil and natural gas. These companies form part of a group of over 3,000 global companies that have pledged to adopt Science Based Targets (<https://sciencebasedtargets.org/>), meaning, they are all hoping to achieve net zero emissions by mid-century (CDP, 2020).

Given this real economy pressure, governments around the world have started to declare climate emergencies and that action must be taken. At the time of publication of this article, over 2,100 local governments and at least 39 countries have made climate emergency declarations. Even though between 2020 and 2022 the whole world was focused on dealing with the COVID-19 pandemic, climate change remained a major issue (Jones and Maslin, 2020).

COP26 Glasgow 2021

This new wave of public global environmental concern meant Copenhagen-esque expectations surrounded COP26 in Glasgow, co-hosted by the UK and Italy and originally scheduled for 2020. But due to COVID-19 enforced restrictions and lockdowns, and the severe impacts on both Italy and Britain, this pivotal meeting was postponed until November 2021. COP26 in Glasgow was a different type of negotiation from that of COP21 in Paris, which set the foundations for a new global climate agenda and ambition architecture. Instead, COP26 was critical because it was the third meeting of the parties to the 2015 Paris Agreement (CMA3) and the first time countries had agreed to raise the ambition of their

carbon-cutting pledges, as outlined in the Paris Agreement. Importantly, the focus of COP26 was on 'net zero' carbon emission targets – see Figure 3 (Hawken, 2018; Figueres and Rivett-Carnac, 2020; Mann, 2021).

Despite 2020 and 2021 being dominated by COVID-19, the geopolitical landscape around climate change had shifted seismically before COP26. First, in June 2019, the UK parliament amended the Climate Change Act (2008) to require the government to reduce the UK's net emissions of greenhouse gases by 100% relative to 1990 levels by 2050 (net zero). Second, the European Commission agreed the EU would reduce its GHG emissions by at least 55% by 2030 from 1990 levels, instead of the 40% cut agreed six years prior. Third, in September 2020, China's President Xi Jinping announced *via* video-link to the UN General Assembly that his country would aim to peak CO₂ emissions before 2030, followed by a long-term target to become carbon neutral by 2060. China, the world's largest annual emitter of CO₂ and accountable for around 28 per cent of global GHG emissions, had, up until then, not committed to a long-term emissions goal. Under the Paris Agreement, China had merely pledged to cut the *carbon intensity* of its economy by 60-65% against a 2005 baseline. This announcement followed long and detailed discussions between China and the EU on climate change.

COP26 also marked the re-engagement with the USA, the second largest emitter of global GHG emission. President Trump had begun the process of removing the USA from the Paris Agreement in 2017, but in accordance with Article 28 of the agreement, a country can only give notice of withdrawal 'after three years from the date on which [the] Agreement has entered into force'. So, the earliest possible effective withdrawal date by the United States was November 4th 2020, one day after the 2020 U.S. presidential election. Newly elected

President Biden immediately cancelled the withdrawal and has become a strong advocate of collective international action to deal with climate change.

In many ways COP26 was a small step forward, with little or no back sliding (Lewis and Maslin, 2021). The Glasgow Climate Pact agreed at the conference includes a strong statement on the necessity of achieving the 1.5°C target – including a renewed call for a 45% reduction in CO₂ emissions by 2030. The Pact also includes a call to ‘phase down’ coal and remove inefficient fossil fuel subsidies. While the western press made a lot of fuss over the late switch in language from ‘phase out’ to ‘phase down’ coal (due to pressure from India and China), they missed the fundamental shift in COP terminology: it represented the first time that fossil fuels had ever been mentioned in an international climate agreement (Lewis and Maslin, 2021). There was also a call in the Pact for new carbon-cutting pledges (National Determined Contributions, NDCs) for COP27 to boost global ambition in the near-term. As stated in the Paris Agreement, NDCs are only required every 5 years, so the call for new NDCs by COP27 suggests updates could become annual or biennial to try and accelerate decarbonization. In Glasgow, the much-maligned and long-awaited Article 6 rulebook was finally finished and signed. This complicated agreement stipulates how countries should monitor and account for their carbon emissions and reductions. It in effect allows countries to sell their emission reductions to others, while at the same time preventing double accounting, so provides a robust framework within which countries and companies can trade carbon (World Bank, 2022). While loopholes exist, finally there was an agreement which everyone could work with (Lewis and Maslin, 2021).

Still, COP26 had notable failures. First, the developed nations failed to honour their 2009 commitment to provide \$100 billion per year to help the least developed countries transition

from fossil fuels to clean energy. Over a decade after its ratification in 2010 this promise has yet to be fulfilled. Second, COP26 failed to create the Glasgow Loss and Damage facility, whereby least develop countries could claim compensation from historically high GHG-emitting countries for damage caused by climate change – agreement was blocked by the USA and EU on the conference’s last day. Third, countries’ carbon-cutting NDCs are not legally linked to the Paris Agreement 1.5°C pathway – and despite shifts in some countries’ positions, still, even if all pledges are fulfilled the world is still looking at heating of between 2.4-2.8°C by the end of the Century. (Climate Action Tracker, 2022)

Beyond the Glasgow Climate Pact other international agreements were drawn up on, for example, reducing deforestation, phasing out coal and removing coal finance. An agreement to cut methane emissions by 30% in the next 10 years was secured. There was also an announcement that the USA and China would collaborate more closely on climate change throughout the rest of this decade – that’s important as, together, they represent 43 per cent of the world’s GHG emissions – but no details have been forthcoming of this collaboration.

Disruptive influence of the Russian invasion of Ukraine

Geopolitics have altered rapidly in the last few years, with one of key shocks being the Russian invasion of Ukraine. At the time of writing this article there have been about 46,000 deaths, 17 million people have been displaced and 2,300 buildings destroyed. In terms of climate change, a mixed response is emerging: the EU is moving away from Russian gas as quickly as possible, having pledged to double the instillation of renewable energy this decade (Chestney and Zinets, 2022); meanwhile, in the US the Biden administration opened the door to selling new oil and gas drilling leases in the Gulf of Mexico and Alaska to help it ensure self-sufficiency in fossil fuels. It has proposed as many as 11 lease sales over the next five years, including 10

in the Gulf of Mexico and one in the Cook Inlet off the Alaskan coast (Bloomberg, 2022). Drilling off both the Atlantic and Pacific coasts are not included. While in China, and to a lesser extent India, they have been leaping at the opportunity to buy cheap Russian oil, due to western sanctions on Russian exports. Imports of Russian oil rose by 55 per cent from a year earlier to a record level in May, displacing Saudi Arabia as China's biggest provider (BBC, 2022).

Longer term, the invasion of Ukraine has put energy security back on the top of governments' agendas. For countries with no or little access to domestic fossil fuel reserves, renewables are set to become very attractive — they are already much cheaper to build and maintain than coal fired power stations.

COP27 Egypt

In 2022, two major IPCC reports were published – IPCC Working Group II's 'Impacts, Adaptation and Vulnerability' (IPCC, 2022a) and Working Group III's 'Mitigation of Climate Change' (IPCC, 2022b). Both paint an exceptionally stark future if greenhouse gas emissions are not reduced rapidly. Importantly, the reports also demonstrated almost all the solutions required to mitigate and adapt to climate change already exist — they just need to be scaled up (IPCC 2022b). The possible futures these reports illustrate provide the backdrop to COP27 in Sharm El Sheik, Egypt, billed as the 'African COP'. The African continent is already experiencing major climate change, including average temperature rises higher than many other parts of the planet and the continent will suffer some of climate change's most severe future impacts (IPCC, 2022a). At COP26, countries were requested to submit revised carbon-cutting NDCs by COP27 to increase global ambition on mitigating emissions and close the ambition gap necessary to meet the temperature targets of the Paris Agreement (Figure 4).

Strong negotiations before and during COP27 are necessary to deliver developed country guarantees that the \$100 billion per year will become available to least developed countries to help them accelerate moves to renewable energy. Given its location on the frontlines of climate change, the African COP will also provide renewed focus on adaptation which has in the past been sidelined relative to mitigation. Similarly, expect the issues of Loss and Damage and Climate Justice to be central to the success, perceived and real, of the negotiations. Many vulnerable countries hope that agreements can be secured without the US and EU blocking them (Calliari et al., 2020).

Conclusion

In the last 30 years the amount of human-emitted CO₂ has doubled, representing a collective failure of the world's leaders to rise to Margaret Thatcher's 1989 global call to action (Figure 5). Because of this political failure, the ambition of UN climate summits have necessarily increased. In 1997, COP3 and the resulting Kyoto Protocol aimed for developed countries to cut emissions by only 5.2% relative to their 1990 levels; twenty-four years later at COP26, negotiations in Glasgow aimed to get all countries to agree to be 'net zero' by the middle of this century. Few underestimate how difficult, and important, it is to negotiate GHG reductions at the multilateral level but securing progress has always been painstaking. Yet pockets of jubilation have been rare but real. We will have to wait and see what effect the Russian invasion of Ukraine has on the long-term demand for fossil fuels, but it is becoming clearer that energy security is synonymous with energy decarbonisation. An interesting geopolitical back drop for COP27 in Egypt is emerging, where adaptation will be given equal billing to mitigation and where there will be a push to get more ambitious NDCs out of obstinate countries and to secure an agreement on Loss and Damage facility. And maybe,

just maybe, the \$100 billion that has been promised will finally materialize. In Paris, COP21 was a success because the poorest, most vulnerable nations with the most at stake said it was a success. Let us hope that at COP27 and future COP meetings global reductions in GHG emissions can be achieved with the support of all nations.

Figure 1. Infographic showing all the UNFCCC COPs from foundation to 2050

Figure 2. Infographic showing the Paris Agreement (2015) ratchet mechanism to encourage countries to make ever more ambitious emission cut pledges or NDCs.

Figure 3. Infographic showing the steps taken towards the net zero emissions target

Figure 4. The three main asks of the COP27 in Egypt (2022)

Figure 5. Carbon dioxide levels and global temperature strips compared to key climate change meetings.

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Figure 1

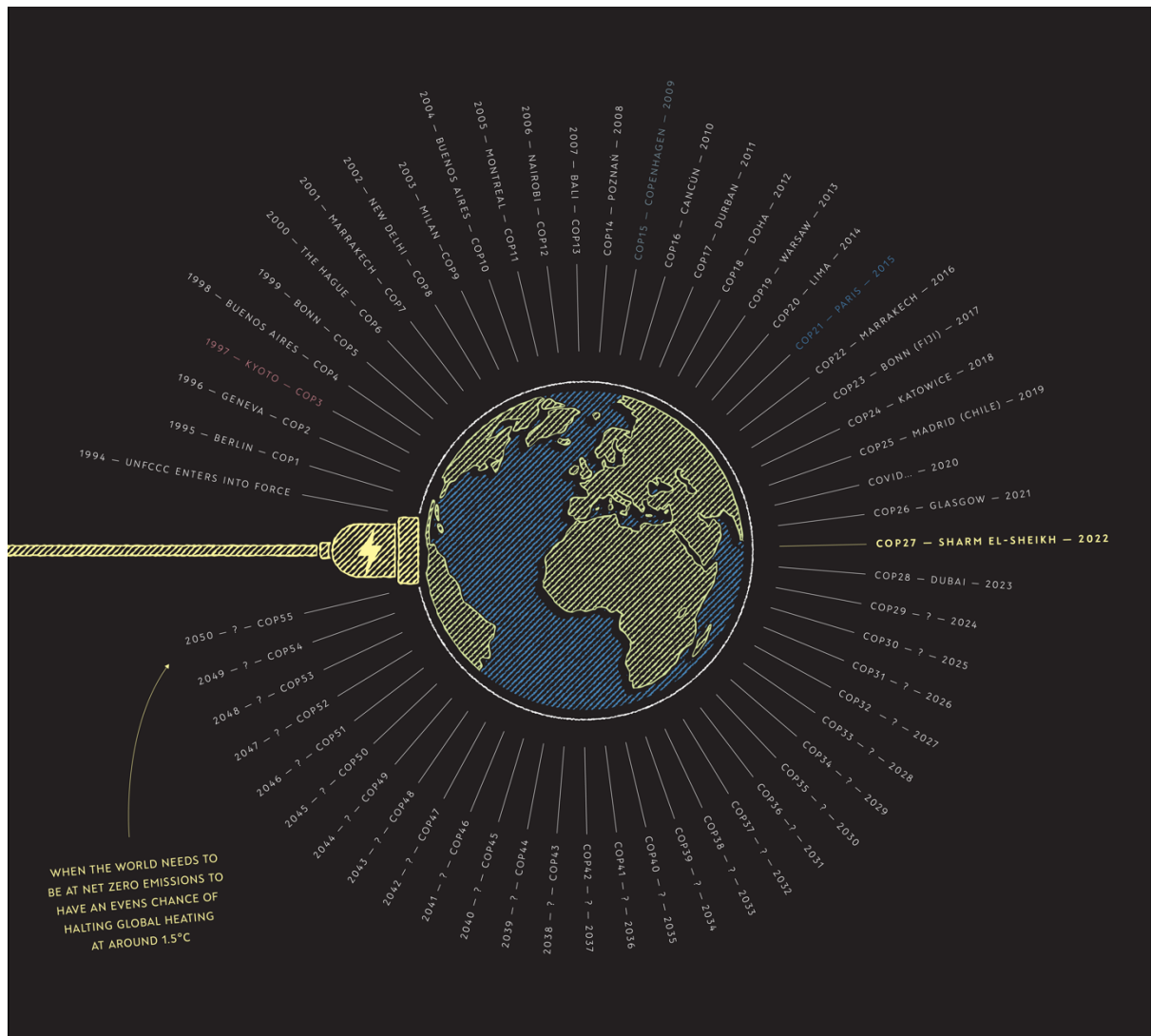


Figure 2

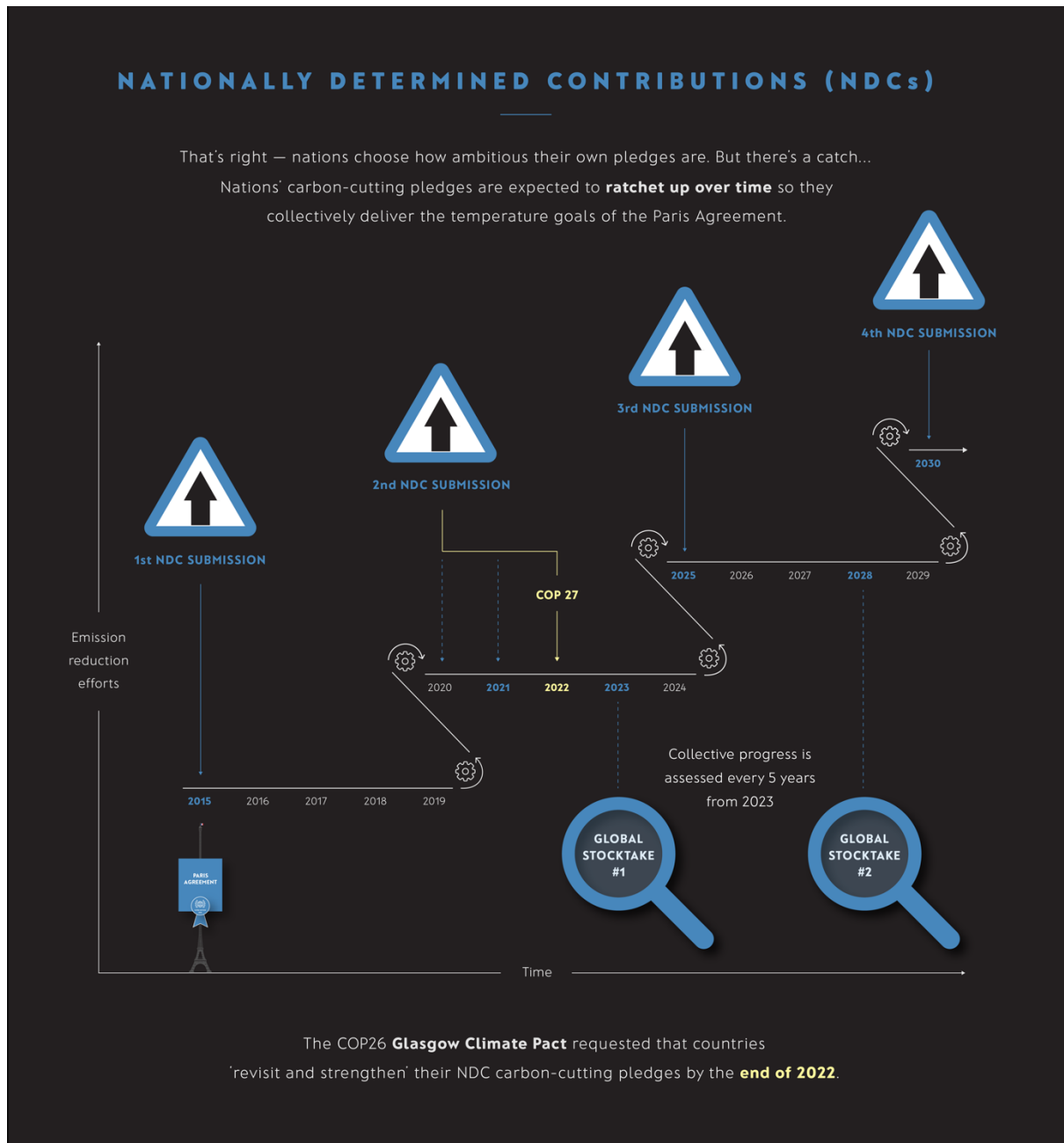


Figure 3

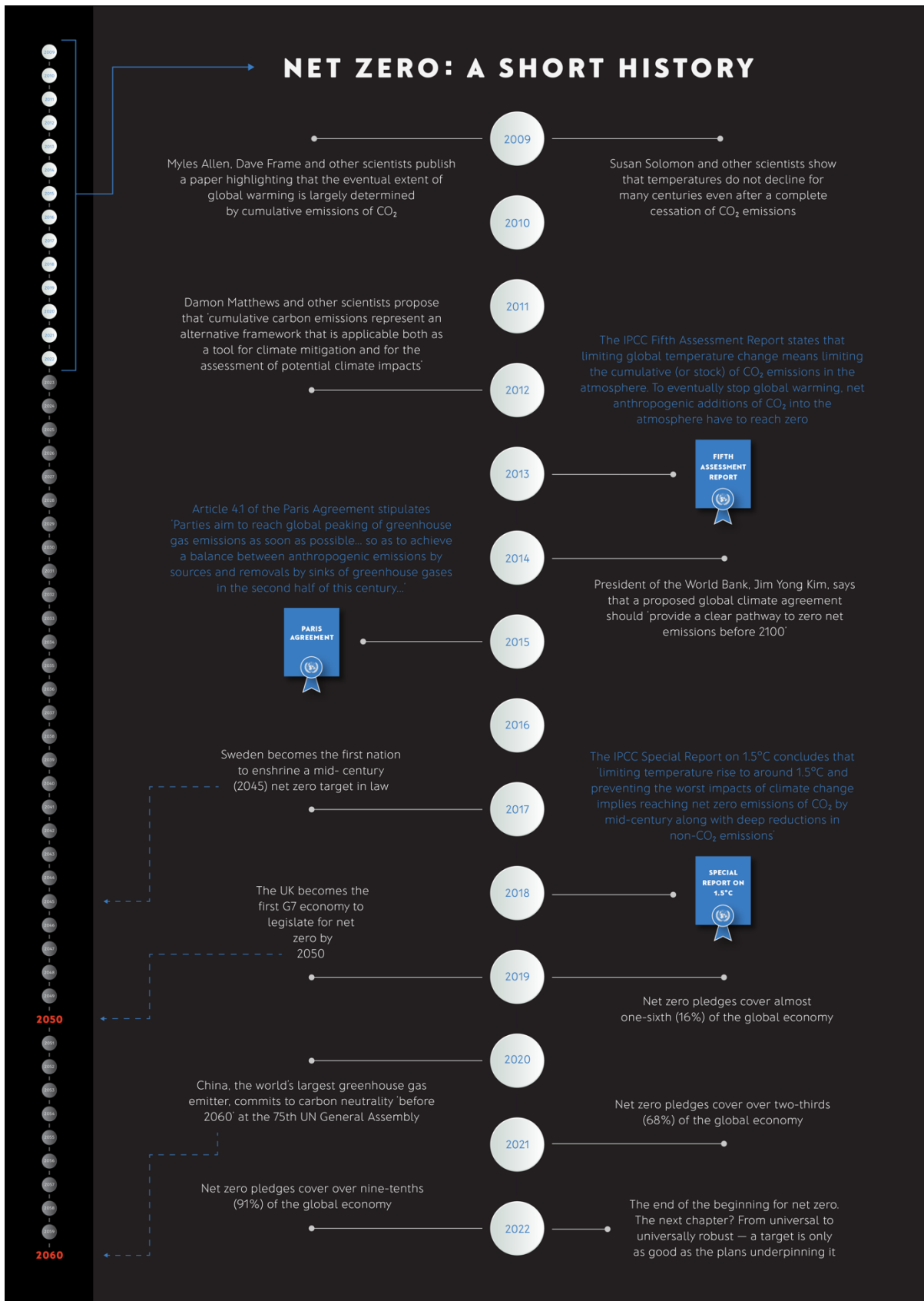


Figure 4



Figure 5

