

# **2023** December

# Fair COP or COP Out? Key Outcomes from COP28 and the Long-Term Effect on Fossil Fuel Demand



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# **INTRODUCTION**

The 28th UN climate conference, COP28, held in Dubai in November-December 2023, was the largest and one of the most complicated of the series. Global political and economic problems, and environmentalist criticism of the host country and president, made the runup to the conference complicated and contentious. But overall, it achieved significant success. What were the key achievements at COP28, and which intentions were not met? What surprises emerged? And what are the key implications?

# ENERGY RESEARCH PAPER

This research paper is part of a 12-month series published by the Al-Attiyah Foundation every year. Each in-depth research paper focuses on a current energy topic that is of interest to the Foundation's members and partners. The 12 technical papers are distributed to members, partners, and universities, as well as made available on the Foundation's website.



- The 28th UN climate conference, COP28, held in Dubai in November-December 2023, was the largest and one of the most complicated of the series.
- Global political and economic problems, and environmentalist criticism of the host country and president, made the run-up to the conference complicated and contentious. But overall, it achieved significant success.
- The global stocktake (GST), the first under the Paris Agreement, found as expected that progress on reducing emissions, though substantial, was still far short of meeting the goal of limiting warming to no more than 1.5°C by 2100, with that level likely to be breached at least temporarily in the next few years.
- COP28 did not have a groundbreaking agenda like that of Kyoto (1997) or Paris (2015), but it did pass for the first time a resolution specifically mentioning fossil fuels, from which it called for a "transition away".
- This achieved consensus from major fossil fuel producers and users as well as the EU, small island states and others pushing for rapid climate action. It leaves room for carbon capture and storage (CCS), gas as a transition fuel, and a "just" and "orderly" transition with energy security maintained, all concessions that satisfy incumbent fossil fuel producers.
- Key commitments were reached, either overall or between smaller groups of like-minded countries, to triple global renewable capacity by 2030, triple nuclear capacity by 2050, and double the rate of energy efficiency improvement.

- Fifty (50) international and national oil companies made important commitments to reduce operational emissions, particularly methane.
- The establishment of the "loss and damage" fund was an immediate and somewhat unexpected success.
- Progress was made on climate finance and adaptation, but amounts committed remain far too small, while developing countries' access to required finance is still very constrained.
- One of the big disappointments was the failure to conclude Article 6 of the Paris Agreement, which governs international carbon trading, and particularly its section 6.4.
- COP29 in Azerbaijan will build on COP28, with particular importance to finance, and to settling Article 6
- The succeeding COPs in Brazil, Australia, Africa (country to be decided) and India will each have a different focus and could all make vital progress.

# BACKGROUND



The greatest attention – before, during and after COP28 – focussed on the final declaration, the conclusion of the 'Global Stocktake'. But there were numerous other work tracks and side agreements, many prepared during the year running up to the event.

Beyond the official declarations, there were a number of subsidiary agreements between select groups of countries and/or companies on specific issues. These may in some cases have a larger impact, because they group like-minded actors, and have a more specific focus.

COP28 had some important differences from previous events. It was the best-attended ever, with nearly 86,000 delegates, ahead of the 50,000 at COP27. It was only the second COP in the Middle East, after COP18 in Doha in 2012, and the second in an OPEC country (Qatar was a member when it hosted COP18, though it left in 2019). It was the first where the president was a businessperson (although at a state company, and also a minister). It was the first to allow virtual-only attendance.

The year 2023 saw record-high global temperatures, as overall warming continued against the backdrop of El Niño conditions. The conference also came against a challenging regional and international backdrop: Israel's war in Gaza and continuing risks of escalation; tensions between China and the US; protectionist policies and constraints on global trade; global inflation and supply chain constraints, which raised the cost of renewable energy among other goods, albeit this eased later in 2023; a troubled US political scene; growing opposition in the US and Europe to some "green" policies; and the continued overhang of Russia's war in Ukraine and its impact on energy markets.

The event received heavy media and activist criticism in advance, largely because of the location in a fossil fuel-exporting country that plans to expand output significantly, and because of the identity of the COP28 president, Dr Sultan Al Jaber, CEO of the Abu Dhabi National Oil Company (ADNOC). It was less widely noted that he was also the founding CEO and still is chairman of clean energy company Masdar. Dr Al Jaber was accused in the run-up to the event of using his position to discuss fossil fuel business deals with various countries, based on leaked briefing notes (the majority of deals mentioned in these notes, however, were actually in the area of renewables and hydrogen). One campaigning group claimed that 2,456 fossil fuel "lobbyists" attended, using a very wide definition. Arguably, at less than 2.5% of the total attendance, this is a surprisingly small number.

The negotiations also highlighted a number of shifts in global climate politics. The relationship between China and the US, the world's two biggest emitters, has been poor in recent years. But the good personal connection between US climate envoy John Kerry and China's Xie Zhenhua helped a reasonably constructive relationship, in contrast to the breakdown at Copenhagen in 2009 when the countries blamed each other. Both men have now retired from their roles, so newly appointed Liu Zhenmin will have to establish a similar working rapport with whoever the new American envoy is<sup>i</sup>.

China and India have increasingly forged their own path, away from the G77 group of (originally) developing countries, which now has 135 adherents<sup>ii</sup>. They are both members of the Like-Minded Developing Countries, along with several important oil-exporting states such as Saudi Arabia, Kuwait, Iran and Iraq. The LMDC wants to avoid firm curbs on fossil fuel production or consumption.



#### Figure 1 Climate impact of COP conferences<sup>iii</sup>

## THE GLOBAL STOCKTAKE

The global stocktake (GST) is intended to occur every five years following the Paris Agreement of 2015, though this was the first. It is intended to inform the next round of nationally determined contributions (NDCs), which are to be prepared by 2025<sup>iv</sup>.

The global stocktake assesses progress against the Paris Agreement's goals, though this is in fact well-known ahead of each COP through numerous scientific studies. The world could surpass the Paris Agreement's target of limiting warming to no more than 1.5°C within a decade and warming by 2100 could be well above the limit of 2°C<sup>v</sup>. More importantly, the stocktake looks at where there are gaps, and where policies are falling short.

The text of the global stocktake<sup>vi</sup> was the most contentious, heavily negotiated and widely reported area of the conference. The key points were as follows:

**Status of the Paris Agreement:** Parties not yet on track; current nationally determined contributions would reduce overall emissions only by 2% by 2030, while cuts of 43% by 2030, 60% by 2035 and 100% (net-zero) by 2050 required; 2023 expected to be the hottest year on record.

**Fossil fuels:** For the first time, a COP declaration specifically mentioned fossil fuels (rather than just coal, as at COP26), and called for "Accelerating efforts towards the phase-down of unabated coal power" and "Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner". This came with the caveat of "recognizing that transitional fuels can play a role in facilitating the energy transition while ensuring energy security".

**Subsidies:** The declaration states that "inefficient fossil fuel subsidies that do not address energy poverty or just transitions [should be phased out] as soon as possible".

**Carbon capture:** this is mentioned as follows: "accelerating zero- and low-emission technologies, including, inter alia, renewables, nuclear, abatement and removal technologies such as carbon capture and utilisation and storage, particularly in hard-to-abate sectors, and low-carbon hydrogen production."

**Demand:** the GST makes relatively little mention of reducing fossil fuel demand (other than implicitly in the renewables, efficiency, and nuclear ambitions). However, it does mention low-emission vehicles, sustainable lifestyles, and the "circular economy" (a favourite theme of Saudi Arabia's).



Parties to the Paris Agreement are required to submit new or updated Nationally Determined Contributions (NDCs) every five years, i.e. by 2020, 2025 and 2030, which should reflect an increased level of ambition.

In the run-up to COP28, i.e. after 18 November 2022 when COP27 concluded, 11 countries submitted new NDCs, including the Vatican's first ever, and the host's third update to its second NDC, while additionally 23 of the 27 EU states as well as the EU overall submitted updates (Portugal, Czechia, Poland, and Latvia being the exceptions)<sup>vii</sup>. All 195 parties to the Paris Agreement have now submitted at least one NDC. Three countries signed but have not ratified the agreement: Iran, Libya, and Yemen.

#### Figure 2 Number of countries by NDC stage



Most countries have submitted two NDCs and are therefore due to produce another by 2025 (Figure 1). Twenty-four (24) have produced only one NDC and are therefore overdue for another, most notably Russia, whose NDC dates to 2020, and Algeria, whose sole NDC was produced as far back as 2016. However, some of the 54 parties who have produced three or four NDCs are still likely to make further updates with more ambition by 2025, since these are mostly wealthy nations with increasingly stringent climate policies. The overachievers with four NDCs are Brazil, Australia, and Japan, although in the first two cases this likely reflects changes in government during the period.



The final communique contained the intention of "tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030." These goals were widely supported and relatively uncontroversial, and therefore gave the conference one easy win.

The International Energy Agency considers that global deployment of renewables is on track to increase capacity 2.5 times by 2030<sup>viii</sup>, and therefore a relatively modest acceleration would suffice to meet the aim of tripling it<sup>ix</sup>. Most major countries have compatible objectives, including the EU, US (under the Biden administration, at least), China, India, Brazil, the hosts UAE, and Saudi Arabia, with Russia a notable exception.

However, the goal of doubling the pace of energy efficiency improvement is much more challenging. Only five of the G20 countries have achieved the required 4.1% annual falls in energy intensity over a five-year period (China, Japan, France, the UK, and Indonesia). China was not one of the 123 countries which signed on to the renewable and efficiency pledge, precisely because it was concerned that its focus on heavy industry would not allow continuing efficiency improvements<sup>\*</sup>. India was also absent.

Other specific commitments include:

- Global Cooling Pledge, covering sustainable air-conditioning, aiming to cut emissions from the sector 68% by 2050 (66 governments);
- Mutual recognition of certification for low-carbon hydrogen (37 governments);
- The Industrial Transition Accelerator (35 companies).

Nuclear power was a more controversial addition. The final declaration included, for the first time, a mention of nuclear as an acceptable part of a net-zero system. 22 countries, including the UAE, US, Canada, and others, backed a declaration to triple nuclear power capacity by 2050. This will be challenging, because of the retirement of older reactors in the US and Europe, and the restrictions on Russia, which had been one of the most active international developers of new nuclear power, including in Egypt, Iran, and Bangladesh. Most current nuclear growth relies on China. However, Japan, South Korea and Taiwan have all revised their plans recently to give more emphasis to nuclear, given the realisation of concerns over energy security.



## **09** OIL AND GAS DECARBONISATION



Fifty leading oil and gas companies, accounting for about 40% of global production, signed the "Oil and Gas Decarbonisation Charter"<sup>xi</sup>. For the first time, this included significant numbers of national oil companies (NOCs), amongst them ADNOC, Saudi Aramco, and SOCAR (Azerbaijan). It also included leading US shale operators Occidental and EQT, as well as, more predictably, the main European international Oil companies (IOCs), Shell, BP, TotalEnergies, ENI, OMV and Repsol, and US corporation ExxonMobil (though not Chevron).

The signatories committed to reach net-zero operational emissions by 2050, and to reach zero routine flaring and near-zero methane emissions by 2030.

The agreement does not cover "Scope 3" emissions, i.e. those arising from final use of the supplied oil and gas by customers. That would, by implication, be included in the final agreement to "transition away" from fossil fuels, and in each country's NDC covering their domestic use of fossil fuels and emissions. There is no feasible way these companies could have committed jointly to reduce Scope 3 emissions – which would create a kind of corporate-based "Super-OPEC" also including gas, and which would probably violate US antitrust and EU competition law.

One hundred and fifty-five countries have now joined the Global Methane Pledge, with five of those at COP28, most notably Turkmenistan and Kazakhstan. China has not joined the pledge, but it did announce a new plan for reducing its methane emissions.

The IEA, UN Environment Programme, Rocky Mountain Institute, Environmental Defense Fund, and the International Methane Emission Observatory launched a joint initiative for monitoring methane leaks and flaring, which should help improve accountability. This is particularly important given that the decarbonisation charter is voluntary.

A key action for COP28 was the operationalisation of the "Loss and Damage Fund", which was an early success, reached on the first day (after much pre-preparation). The fund has not been given an official name yet, given US concerns about conceding liability or an obligation to pay for past damage. It will compensate lower-income countries for the unavoidable effects of climate change. It will be hosted by the World Bank for the next four years, which was a point of contention with developing countries feeling this might exclude them from decision-making. This concern has been addressed by specifying reporting lines for the fund. \$700 million has been committed, \$100 million of that from the UAE. This is far too small for it to make a material difference, so additional funding will have to be provided over the next few years.

More important was the completion of the commitment from Paris for developed countries to mobilise \$100 billion of climate finance annually for developing countries. The OECD suggested that this target had finally been reached in 2022. However, given inflation since 2015, and given much dubious recategorisation of existing spending, developing countries remain sceptical as to the reality of this pledge. As guoted in the GST, it is estimated they require \$5.8-5.9 trillion by 2030 to meet their NDC targets, or about \$800 billion per year during 2023-30. The \$100 billion, even if achieved, is therefore still very inadequate. It has to be leveraged to access much larger pools of private capital, while other barriers to the deployment of that capital are eased. These barriers include repayment, political and currency risksxii.

A further problematic issue is the definition of "developing countries". Of the Annex II countries, i.e. those considered to be "developing" in the Kyoto Protocol in 1997, several have now achieved middle or even high-income status, including China, Singapore, South Korea and the GCC. India, which is now classified as a lower-middle income country, has of course also a very large and rapidly growing economy. There is an expectation that these countries should contribute to climate finance, at least on a net basis. The most notable move on this so far is the UAE's establishment of the Alterra fund (see below).

Discussion took place at COP28 on the New Collective Quantified Goal, which will set the finance target for 2025-30, and which should be agreed by COP29. There was also debate on the EU's Carbon Border Adjustment Mechanism, and on the possibility of providing some of the required climate finance via international carbon taxes or targeted taxes on fossil fuel production, or its consumption in certain sectors such as shipping or aviation. Such ideas are controversial, hard to implement and would be resisted strongly by some countries and industries, but nevertheless should be monitored carefully by those concerned.

Several subsidiary announcements on climate finance were also important:

- UAE's launch of Alterra, a \$30 billion for-profit climate fund with focus on developing countries
- Endorsement by 13 countries of declaration on a Global Climate Finance Framework
- Joining of 63 countries in the Coalition for High Ambition Multilevel Partnership (CHAMP)

# 11 ADAPTATION



COP28 was successful in advancing specifics on climate adaptation – that is, adaptation to unavoidable climate damage. The declaration calls for national plans on adaptation to be ready by 2025, if not done already, and for assessment and implementation to have progressed by 2030.

Committed funding for adaptation was increased to \$40 billion, though this remains short of the \$400 billion many developing countries had wanted. The GST states that \$215-387 billion is needed per year to 2030.

The Global Goal on Adaptation, overall, is rather non-specific, with broadly defined, voluntary targets, and quite weak language on finance<sup>xiii</sup>. Financing is problematic, firstly because many developing countries want grants rather than loans, given their limited financial capacity; secondly, because most adaptation projects, unlike many emissions mitigation or energy transition projects, do not provide a commercial return and so cannot attract private capital directly.

Food and health were key intended foci of the event. One hundred and fifty-three countries, including the EU, US, China and Brazil, signed the Emirates Declaration on Sustainable Agriculture, Resilient Food Systems and Climate Action.

## CARBON TRADING

This was probably the biggest disappointment of the conference. Article 6 of the Paris Agreement covers international carbon credit trading. Carbon offsets have come under increasing criticism recently, because of concerns over their integrity, permanence, and additionality – for instance, forest-based credits for forests that were not in danger of being felled, or that subsequently burnt down, or for renewable projects that would probably have happened even without the credits.

Article 6 could halve the cost of achieving NDC targets by 2030, saving \$250 billion<sup>xiv</sup>. Within it, Section 6.2 covers trading between countries, and Section 6.4 a new high-integrity carbon market. However, final agreement was not reached on these, because of outstanding questions on how trade would be controlled and by whom, what the requirements for disclosure versus confidentiality would be, and the methodology for carbon removals versus reductions<sup>xv</sup>.

### **IMPLICATIONS**

The energy efficiency goal would reduce primary energy consumption by about 10% by 2030 versus 2022. Electrification and the use of non-biomass renewables (which avoid thermal losses) are the main reasons.

The methane and flaring, renewables and efficiency targets together would account for 4 Gt per year of emissions reductions, about 30% of the gap to the required cuts in the IEA's net-zero scenario by 2030<sup>xvi</sup>.

There are, of course, numerous ways of tripling renewables, but one path is shown in Figure 2. In this case, solar rises by more than five



times, wind three times, and others (mostly hydroelectric and biomass) by 1.4 times. It was acknowledged at side meetings, but not put in the official document, that this implies about 11,000 GW of renewables (up from 3629 GW in 2022).

#### Figure 3 Renewable Expansion Under Tripling Target<sup>xvii</sup>



The fossil fuel language in the declaration has several key phrases that were required to win acceptance, and that are relatively positive for the fossil fuel industry. These include:

- "Transitioning away", which was found to be acceptable, rather than demands for a "phase out" of fossil fuels.
- Transition away from fossil fuels "in the energy system", which allows continuing use of fossil fuels in non-energy uses, such as feedstock for fertilisers, petrochemicals and plastics, lubricants, battery electrodes, and for iron ore reduction.
- Mention of "unabated" coal power, which leaves room for carbon capture and storage as a method of abatement, without specifying what level would qualify.
- Mention of "transitional fuels", which includes natural gas.

- Stress on energy security, and an orderly and just transition – which means no very rapid abandonment of fossil fuels, and consideration for the economies of fossil fuel producers.
- Implicit room for "efficient" fossil fuel subsidies if these are used to address energy poverty or just transition.



The statement also does not give any specific dates or amounts of reduction for this "transitioning away". Carbon capture and carbon dioxide removal is specifically mentioned, another positive point for fossil fuel producers and users. This is linked particularly to "hard-to-abate" sectors, which in this context would refer mainly to heavy industry. It is generally agreed – though not acknowledged by most environmental organisations - that renewable energy is not technically feasible at all or not commercially viable for processes such as the manufacture of cement, steel and many basic chemicals, and that carbon capture, or in some cases hydrogen, will be essential.

Such qualifications were necessary to bring Saudi Arabia, in particular, on board, and likely China and India too. OPEC had lobbied to avoid a "phase-out" of fossil fuels. The UAE's relationship with Saudi Arabia and OPEC was probably important to finding a workable formula.

The oil and gas decarbonisation pledge is important, particularly for short-term methane reductions which would ease near-term warming and buy some time for deeper carbon cuts. However, some of the biggest methane emitters and flarers, notably many US shale producers, and Chinese, Algerian, Iranian, Iraqi, Turkmen, and Russian companies, did not feature.

Overall, the IEA considers that the combination of solar, wind, electric vehicles and some other technologies could bring a peak in emissions before 2025 (Figure 4).

#### Figure 4 Peak emissions xviii





### 15 COP29 AND BEYOND



The next COP will be held from 11–24 November 2024 in Baku, Azerbaijan, another oil-exporting state. This choice came as Eastern Europe was scheduled next, but Russia blocked most other candidates, while Azerbaijan itself was uncertain because of its conflict with neighbour Armenia. The president of the event will be Mukhtar Babayev, minister of ecology and natural resources, and a long-time employee of state oil company SOCAR<sup>xix</sup>.

While probably not as high-profile as COP28, the event will still have some important business, notably completing agreement on carbon trading in Article 6.4.

After Azerbaijan, several very important COPs follow. Brazil in 2025 will be hosted in the Amazon and concentrates on forests and on raising ambition, including the next round of NDCs.

Australia in 2026 can focus on small island states, marine conservation, and its expansiOn of green hydrogen could be useful experience. It has a strong recent track record of replacing coal with renewables. COP32 in 2027 will be held in Africa, with the host to be decided; only two COPs have been held in sub-Saharan Africa (Kenya in 2006 and South Africa in 2011), and the continent has very specific concerns over lack of climate and adaptation finance, excessively high cost of capital for renewable projects, lack of access to modern energy, the problem of transitioning away from fossil fuel production which is a major part of many African nations' budget, and the need for stronger action on adaptation. Finally, India will host its first COP in 2028, which may be crucial in charting a low-carbon path for this major economy and determining how to transition away from coal while managing the social and political economy consequences.

It is a misapprehension to say that eventually there will be no fossil fuels burnt. "Netzero" targets are just that – any continuing emissions from fossil fuels (or cement, deforestation, or other sources) can in principle be "offset".

There are of course many possibilities. Carbon capture envisages fossil fuels being used, not just in electricity generation where CCGT plants may be used for mid-merit and peaking loads, but also in industry and possibly shipping. It is difficult to imagine a world without plastics, mostly made from fossil fuels. Obviously if demand for fossil fuels is reduced, then only the lower-cost producers will survive. However, it is also uncertain how quickly demand will reduce in an ever-hungry energy world.

The final GST text was therefore important in that it acknowledged the aim of a reduction in fossil fuel use but not its elimination, and properly mentioned the role of CCS. Environmental groups will, no doubt, revisit the goal of eliminating fossil fuels at future COPs. But none of the hosts of the next four events (with the possible exception of the undecided African host) is likely to look favourably on outright commitments to stop using fossil fuels. However, continuing use of fossil fuels will increasingly have to be seen as compatible with Paris Agreement pathways – whether with CCS, from non-emitting uses such as incorporation into plastics, or with full offsetting.

Although it predates COP28, BNEF has produced scenarios which are useful in examining the impact of net-zero goals on fossil fuel use. They present 'Green' (renewable), 'Red' (nuclear) and 'Grey' (CCS) scenarios (Figure 5). While the Green and Red scenarios have a small remaining share of fossil fuels in 2050, the Grey scenario has fossil fuels still accounting for more than half the primary energy mix. Most of this would be concentrated on gas and coal since mobile uses of oil are not amenable to CCS (with the possible exception of shipping). Overall fossil fuel consumption declines from about 498.000 PJ in 2021 to 303.000 PJ in 2050, an annual decline of 1.7%. Within this, oil demand drops about 4.7% per year, which would have a major impact on the global oil industry, as it is comparable to natural decline rates. Gas and coal drop collectively about 0.7% per year. which would be more manageable.



#### Figure 5 Primary energy shares, 2019 and 2050<sup>xx</sup>



COP28 achieved significant success, despite its challenges, and outperformed much of the prior criticisms.

The final text of the GST managed to unite oil and gas exporters such as the UAE itself and Saudi Arabia, along with major coal users such as India and China. It is ground-breaking, but has no immediate, direct impact on emissions. It will be most important in that it guides the preparation of the next round of NDCs. In turn, real climate progress depends on how fully the NDCs are implemented, as well as on actions not guided by governments.

In some jurisdictions, though, notably Europe, the text could support legal action against governments or companies that appear to be falling short of their obligations. Even full implementation of the goals on renewables, efficiency and methane would only meet 30% of the gap to the 1.5°C target – which looks increasingly unachievable in the absence of radical (and very disruptive) action, or technological breakthroughs. The IEA's view on a peak in emissions before 2025 sees emissions dropping to about 2015 levels by 2030.

The use of smaller "clubs", for example on methane, oil and gas, cooling, industry, and nuclear power, has proven to be a constructive way of progressing issues where global consensus would be limited or impossible.

COP29 is likely to be relatively less high-profile and contentious. Its key focal areas should be on finance and on completing the Article 6 modalities. After that, four very different COP venues will be crucial in different ways in making progress towards 2030, the next landmark date.

# APPENDIX

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<image>



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