Climate Action Tracker

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COP29 host Azerbaijan climate action "Critically insufficient"

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NEW CLIMATE INSTITUTE

CLIMATE ANALYTICS

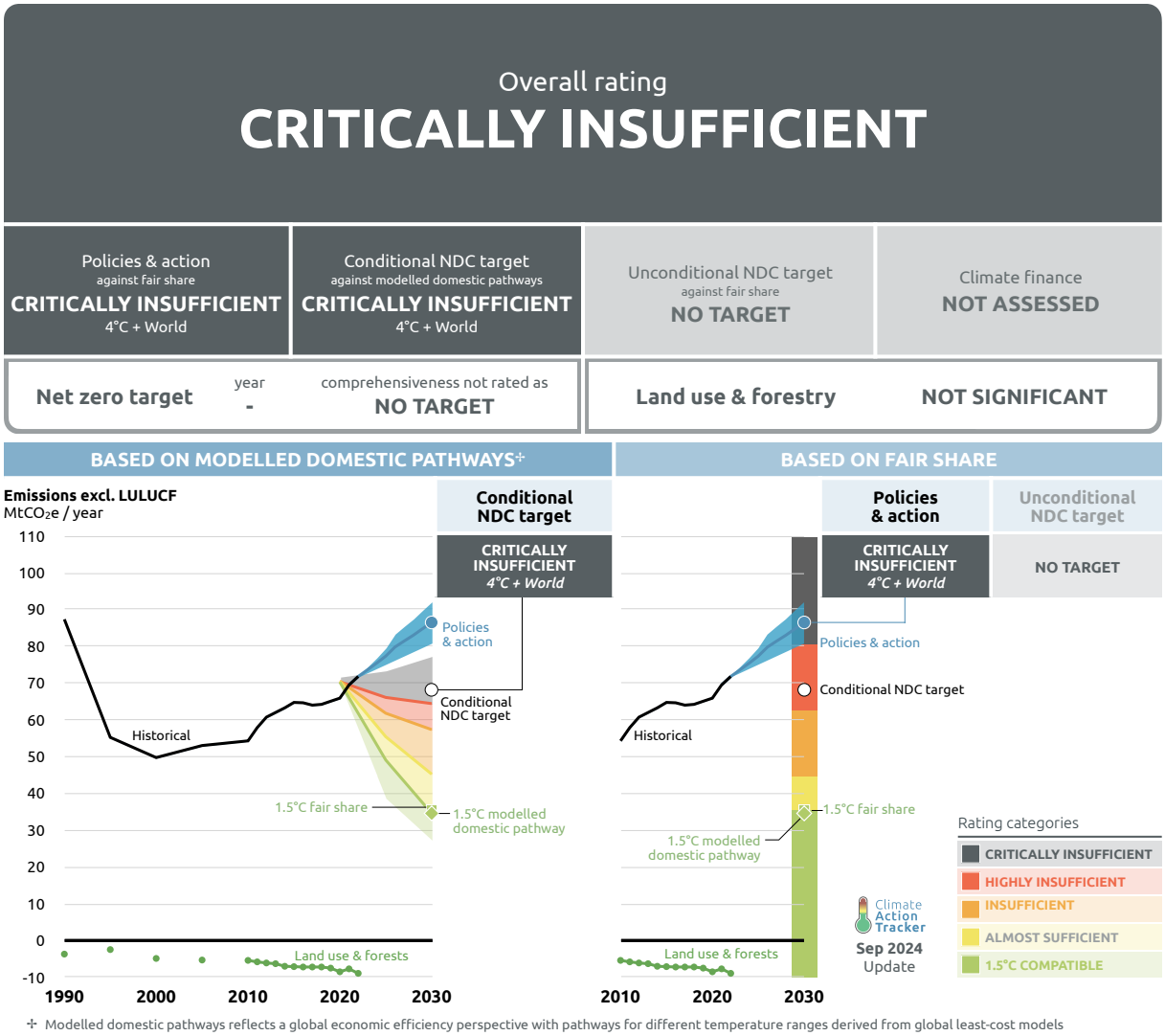
Summary

Overall, Azerbaijan's target and current policies are far from consistent with the Paris Agreement's 1.5°C temperature limit. Total GHG emissions are projected to continue rising by around 20% to 2030, in stark contrast to the emissions reductions necessary to meet its climate commitments. Energy-related methane emissions are increasing quickly, whereas for 1.5°C alignment they would need to drop by about 66% below 2020 levels by 2030.

Azerbaijan appears to have abandoned its 2030 emissions target, moving backward instead of forward on climate action. Its renewable energy targets remain weak. Azerbaijan's economy is dependent on fossil fuel production and the government plans to increase fossil gas extraction by more than 30% over the coming decade. Emissions from exported fossil fuels are twice as high as domestic emissions.

Along with setting a more stringent climate target, Azerbaijan needs to significantly increase the ambition of its climate policies to reverse the present rapid growth in emissions and set its emissions on a firm downward trajectory. Overall, we rate Azerbaijan's climate action as "Critically insufficient."

The CAT has undertaken a full country analysis of COP29 host Azerbaijan's climate action.



✢ Modelled domestic pathways reflects a global economic efficiency perspective with pathways for different temperature ranges derived from global least-cost models

Note: The CAT may assess any new policies announced before or at COP29

Azerbaijan is among a tiny group of countries that has actually weakened its climate target in contradiction of the requirement of the Paris Agreement's Article 4.3 that each Nationally Determined Contributions (NDCs) submission will be more ambitious than its previous one[1]. Azerbaijan's latest NDC is less ambitious than its predecessor, as it appears to have dropped its 2030 target altogether. This is of particular concern as the government will be hosting COP29 where governments are supposed to move forward on climate action.

Neither is Azerbaijan immune to the ravages of climate change. The country is prone to droughts and water scarcity, expected to increase in frequency and intensity with extreme weather events. Oil and fossil gas extraction is thought to have contributed to land degradation and the contamination of water resources. Agriculture and water sectors are critical making up a high proportion of the country's GDP and employment.

We project emissions under Azerbaijan's currently implemented policies would increase to 81–92 $MtCO_2e$ by 2030, some 23-40% above 2020 levels, meaning its current policies are headed in completely the wrong direction for meeting its own weak climate targets, let alone 1.5°C compatibility.

Fossil fuel dependence grows with European demand for gas

Oil, gas, and related petroleum products account for over 60% of the government revenue, and fossil fuels continue to trump renewables in the Azerbaijani power sector. Azerbaijan has not included the transition away from fossil fuels in its COP29 presidency agenda, a document which outlines the priorities for the upcoming summit.

While the government has undertaken a recent push towards developing renewable energy, the primary purpose of this move is to free up domestic use of fossil gas, to allow increased gas exports to Europe.

If renewable energy does not displace fossil fuels in the global energy system, it will not reduce emissions. Azerbaijan's fossil gas export strategy risks undermining its decarbonisation efforts: real progress requires that renewables replace, not just supplement, fossil fuels.

Renewable technology costs are falling sharply and offer an attractive means of supplying energy demand, particularly to Europe. Azerbaijan should prioritise the development of its vast renewable energy resources. A longer-term prospect for this country could be to build offshore wind in the Caspian and use this to make green hydrogen for export to European markets, where there is expected to be growing demand in the coming decade.

But the government's focus on the Caspian appears to be firmly with the fossil fuel industry: it is backing contracts with foreign oil companies British Petroleum (BP) and TotalEnergies, ramping up production, particularly the giant new BP oil development in the Caspian Sea, which has just started "gushing" oil. It is also building a new gas pipeline.

Key recommendations

To improve its climate action, Azerbaijan needs to:

- Substantially upgrade its policies which are allowing emissions to sharply increase so that the present emission trend can be reversed towards an emission reduction by 2030.
- Set significantly stronger, near-term climate targets with substantial emissions reductions for both 2030 and 2035.
- Considerably improve its NDC by including an unconditional target and providing clear assumptions on the LULUCF sector's contribution to meet its target without relying on removals.

1 Article 4.3 states, *inter alia*, that "Each Party's successive nationally determined contribution will represent a progression beyond the Party's then current nationally determined contribution and reflect its highest possible ambition…"

- Devise a long-term strategy to transition away from fossil fuels and its dependency on export to develop a plan for becoming an exporter of renewable energy as well as replacing fossil fuels in its domestic economy. Instead of putting resources into continued fossil fuel production, Azerbaijan should prioritise renewable energy development. A considerable share of Azerbaijan's mitigation activities focuses on reducing emissions from oil and gas production, such as through modernising plants, applying new drilling technologies, and reducing flaring gas.
- Azerbaijan should put forward a net zero target as well.

The CAT Ratings

The CAT rates each country's targets and policies against (1) its fair share contribution to climate change mitigation considering a range of equity principles including responsibility, capability and equality, and (2) what is technically and economically feasible using modelled domestic pathways which in absence of a better method are based on global least-cost climate change mitigation.

Comparing a country's fair share ranges and modelled domestic pathways provides insights into which governments should provide climate finance and which should receive it. Developed countries with large *responsibility* for historical emissions and high per-capita emissions, must not only implement ambitious climate action domestically but must also support climate action in developing countries with lower historical responsibility, capability, and lower per-capita emissions.

OVERALL RATING

Critically Insufficient

The CAT rates Azerbaijan's climate targets and policies as "Critically Insufficient". This rating indicates that Azerbaijan's climate policies and commitments reflect minimal to no action and are not at all consistent with the Paris Agreement's 1.5°C temperature limit.

Azerbaijan is far from meeting its fair share contribution to climate change mitigation. Azerbaijan's policies and action are rated as "Critically Insufficient" when compared to its fair share. Its NDC target[2] is rated as "Critically Insufficient" considering modelled domestic pathways.

Whether Azerbaijan should receive climate finance from abroad to reduce its emissions is a matter of debate. Our methods do not provide a clear answer to this question. On balance, the CAT methodology shows Azerbaijan needing a small amount of international support is technically consistent with a wide range of literature on fair share contributions to meet the Paris Agreement's goals.

However, this contribution would likely be small under most equity perspectives. As a result, the NDC target achieved with its own resources would still need to be improved to align more closely with the 1.5°C limit, regardless of international support. In stark contrast to this, Azerbaijan has not put forward an unconditional target in its updated NDC and has kept its commitments completely conditional on international support.

To get a better rating, Azerbaijan needs to set a more ambitious, unconditional climate target and establish associated policies that can curb the growth in national emissions and set them on a downward trend.

2 Given that Azerbaijan has not put forward a 2030 emissions reduction target, we rate the CAT's estimate of 2030 emissions level, if Azerbaijan were to meet its 2050 target. For more details, see the Assumptions section.

POLICIES AND ACTION AGAINST FAIR SHARE

Critically Insufficient

The CAT rates Azerbaijan's policies and actions "Critically Insufficient" when compared to their fair-share contribution to climate change mitigation. This rating indicates that Azerbaijan's climate policies and actions in 2030 reflect minimal to no action and are not at all consistent with limiting warning to 1.5°C. If all countries were to follow Azerbaijan's approach, warming would exceed 4°C.

The CAT projects that Azerbaijan's emissions under current policies will reach up to 81–92 $MtCO_2e$ in 2030, meaning Azerbaijan's current policies are very far from meeting its climate targets, let alone being 1.5°C compatible. Emissions are expected to continue to increase up to 2030. Azerbaijan's unambitious policies relating to renewable energy development will only make a small impact in its overall emissions trajectory

CONDITIONAL NDC TARGET AGAINST MODELLED DOMESTIC PATHWAYS

Critically Insufficient

The CAT rates Azerbaijan's conditional target against modelled domestic pathways "Critically Insufficient" when compared to modelled domestic pathways.

This rating indicates that Azerbaijan's conditional target in 2030 reflects minimal to no action and is not at all consistent with modelled domestic pathways limiting warming to 1.5°C. If all countries were to follow Azerbaijan's approach, warming would exceed 4°C. Given that Azerbaijan has not put forward a 2030 emissions reduction target, we rate the CAT's estimate of 2030 emissions level, if Azerbaijan were to meet its 2050 conditional target.

UNCONDITIONAL TARGET AGAINST FAIR SHARE

No Rating

Azerbaijan did not put forward an unconditional target in its latest NDC. Therefore, the CAT does not rate this component.

For Azerbaijan's unconditional climate target to be compatible with the Paris Agreement's 1.5°C temperature limit and in line with its fair share ranges, the CAT estimates that it should set a target of reducing emissions by 59% by 2030 compared to 1990 levels, corresponding to an emissions level of 35 $MtCO_2e$.

NET ZERO TARGETS

No Rating

Azerbaijan has yet to submit a net zero target or a Long-Term Strategy to the UNFCCC.

Table of Contents

1 Overview of emissions

Azerbaijan's total national greenhouse gas (GHG) emissions in 2022 were 72 MtCO2e, excluding land use, land-use change, and forestry (LULUCF) (in AR4 GWP). Following the fall of the Soviet Union, emissions plummeted until 2000 but have continued to rise since then. Emissions in 2022 were 32% higher compared to 2010 levels, but still 18% lower than 1990 levels. This increase can be attributed to population growth and the expansion of oil and gas production (Republic of Azerbaijan, 2021; State Statistical Committee of the Republic of Azerbaijan, 2024a).

The energy sector has historically made up most of Azerbaijan's emissions. It accounted for over 80% of total GHG emissions in 2022, followed by the agriculture (12%), industry (6%) and waste sectors (2%) (State Statistical Committee of the Republic of Azerbaijan, 2024a)

Azerbaijan's electricity matrix is dominated by fossil fuels, with fossil gas making up 93% of electricity generation in 2022, followed by hydropower with 5.5%. Wind and solar made up only 0.5% of electricity produced in the same year (Ember, 2024). Azerbaijan's energy sector emissions are projected to increase in the coming years, mainly from increased energy consumption from GDP and population growth and the continued reliance on fossil fuels for electricity leading into 2030.

A significant share of Azerbaijan's emissions can be attributed to fossil fuel production and consumption. Fossil gas contributed 22 $MtCO_2e$ of Azerbaijan's emissions and oil 11 $MtCO_2e$ in 2021, accounting for almost half of total national emissions (IEA, 2024a).

Primarily due to increased fossil fuel production, Azerbaijan's methane emissions have more than doubled since the early 2000s and made up 40% of Azerbaijan's emissions in 2021 (State Statistical Committee of the Republic of Azerbaijan, 2024a). Increased energy consumption has resulted in significant emissions from gas flaring.

The LULUCF sector has been a minor emissions sink, and it has moderately grown since the 1990s, reaching -9 MtCO2e in 2022. Azerbaijan states that its current policies for the forest sector will increase removals in the coming years (Republic of Azerbaijan, 2021).

2 Azerbaijan's climate targets

Azerbaijan's updated climate commitment is less ambitious than its predecessor. The government submitted its first NDC in 2017, where it set an unconditional target of a 35% reduction in emissions below 1990 levels by 2030 (incl. LULUCF) (Republic of Azerbaijan, 2017). In 2023, it submitted an "updated" NDC, presenting a conditional target of a 40% reduction in emissions below 1990 levels by 2050 (incl. LULUCF). It appears that with this updated NDC Azerbaijan abandoned its initial 2030 target, claiming that it was already "quite ambitious" (Republic of Azerbaijan, 2023).

The CAT estimates that Azerbaijan's 2030 emissions levels under its updated target – considering a linear interpolation between the most recent historical data point and the 2050 reduction target – would be higher than under its original 2030 NDC target. It is concerning that Azerbaijan submitted a less ambitious climate target under the pretence of an "updated" NDC.

The updated NDC has also changed the conditionality of Azerbaijan's climate target. A conditional target means that a country's climate commitments are contingent on receiving external support, such as financial aid or access to technology.

While Azerbaijan's first NDC presented an unconditional target, the new target is wholly conditional on "international support […] provided through financing, technology transfer and capacity building", making the new NDC even less ambitious (Republic of Azerbaijan, 2023). While Azerbaijan *will* need some financial support to mitigate emissions beyond what would be its fair share, it should also put forward an unconditional target to ensure it can achieve at least emissions reductions using its own resources and in line with their fair share.

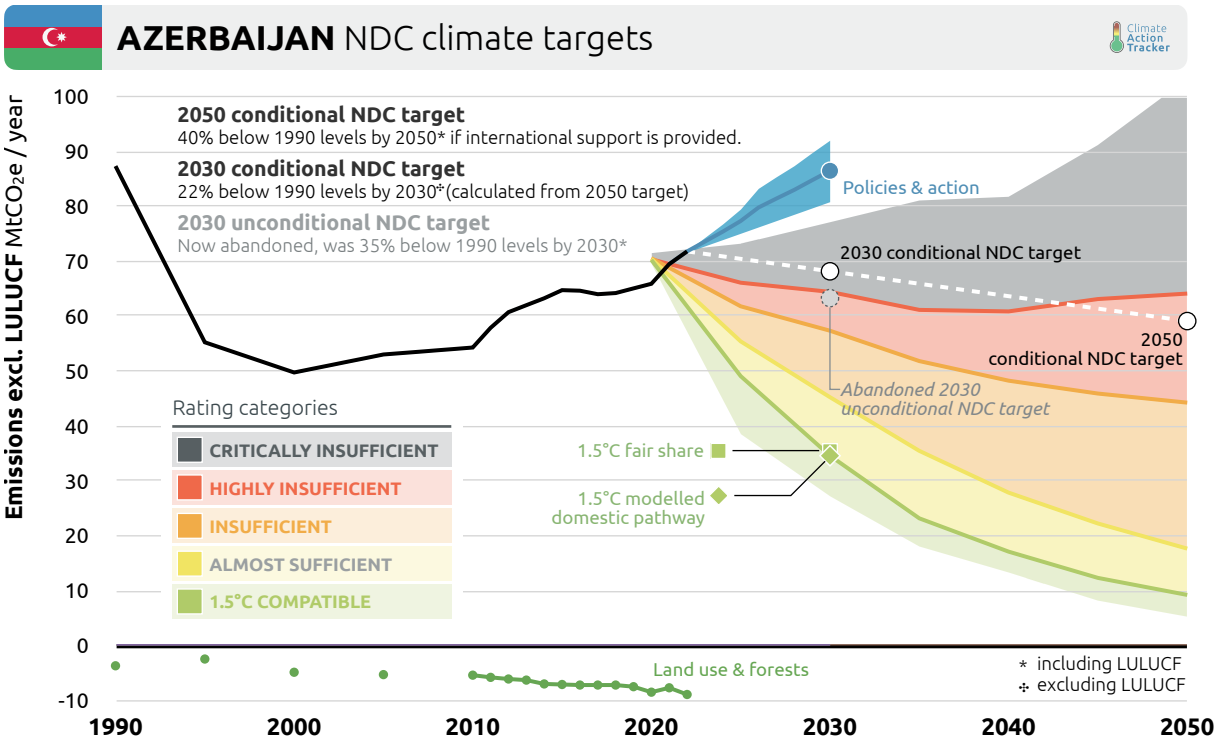
Table 1: Comparison of Azerbaijan's First NDC and its 2023 NDC update (Republic of Azerbaijan, 2017; Republic of Azerbaijan, 2023)

	First NDC	2023 NDC update
Formulation of target in NDC	35% below 1990 levels in 2030	40% below 1990 levels in 2050
Conditionality	Unconditional	Conditional on "international support […] provided through financing, technology transfer and capacity building"
Absolute emissions level (excl. LULUCF)	63 $MtCO_2e$ in 2030	68 $MtCO_2e$ in 2030[3] and 59 $MtCO_2e$ in 2050
Emissions compared to 1990	28% below 1990 levels in 2030 (excl. LULUCF)	22% below 1990 levels in 2030 (excl. LULUCF)
Sector coverage	Energy, agriculture, waste, LULUCF	Economy-wide
Gas coverage	CO_2, CH_4, N_2O, HFC, CF_4	All greenhouse gases
Target type	Absolute emissions reduction (single year target, or from a base year)	Absolute emissions reduction (single year target, or from a base year)

Azerbaijan's climate target is far from being consistent with the 1.5°C temperature limit.

Given Azerbaijan did not put forward a 2030 emissions reduction target in its updated NDC, the CAT estimates Azerbaijan's emissions to be 68 $MtCO_2e$ (excl. LULUCF, in AR4 GWP) in 2030, assuming Azerbaijan would start reducing emissions now, to meet its 2050 target (estimated at 59 $MtCO_2e$ excl. LULUCF, in AR4 GWP). For its climate target to be compatible with the Paris Agreement and in line with its fair share ranges, Azerbaijan must set an unconditional target of reducing emissions by 59% by 2030 below 1990 levels, corresponding to an emissions level of 35 $MtCO_2e$ (excl. LULUCF). In contrast to this, Azerbaijan's NDC target is currently fully conditional on international support.

3 To calculate Azerbaijan's 2030 emissions level under its new climate target, we took a linear interpolation between the most recent historical data point (2022) and the 2050 target value, the latter representing a 40% reduction in 1990 emissions including LULUCF.



Azerbaijan includes the LULUCF sector in its climate target but does not explicitly state the extent the sector will contribute to emission reduction.

Its second NDC states that the target will consider the maximum absorption capacity of forests and other ecosystems. If Azerbaijan relies on increasing LULUCF removals by 2050 in order to meet its target, its 2030 emissions levels could be even higher than our initial estimates. While maintaining a carbon sink is important, Azerbaijan should not rely on the LULUCF sector to meet its climate target and should instead prioritise emissions reductions in other sectors.

3 Policies & action

Azerbaijan has no policies to substantially bring down its emissions and reduce its reliance on fossil fuels

The CAT projects that Azerbaijan's emissions under current policies will reach up to 81–92 MtCO2e in 2030, meaning the government's current policies are far from meeting its climate targets, let alone align with a 1.5°C pathway. Emissions are expected to continue increasing to 2030. The government's policies relating to renewable energy development will only make a small impact in its overall emissions trajectory and are therefore unambitious.

While the country has significant renewable energy development potential, renewables expansion has been slow, and many of Azerbaijan's so called 'mitigation actions' still focus on fossil fuel production. The energy sector makes up most of Azerbaijan's emissions and planned mitigation measures (Republic of Azerbaijan, 2021).

While some of these policies involve energy efficiency and the expanding the use of renewable energy sources, a considerable share of Azerbaijan's mitigation activities focus on reducing emissions from oil and gas production, such as through modernising plants, applying new drilling technologies, and reducing flaring gas. Instead of putting resources into continued fossil fuel production, Azerbaijan should prioritise renewable energy development, which is necessary for the transition toward zero greenhouse gas emissions.

The rest of Azerbaijan's planned emissions reductions are focused on the transport sector. Azerbaijan lists measures including highway and road traffic development, switching conventional fuels with compressed or liquified natural gas (CNG, LPG) or biofuels, and modernising the public

transport fleet to run on CNG (Republic of Azerbaijan, 2021). None of these mitigation actions focus on promoting transport electrification or EV uptake and instead bolsters the role of fossil gas in the energy matrix, even if the production method is less carbon intensive than gasoline or diesel fuel. This is contrary to the need to transition away from fossil fuels as agreed at the last COP.

Azerbaijan has outlined some mitigation actions in the waste sector, although their planned emissions reductions are minimal relative to total emissions. In addition, Azerbaijan expects removals from the LULUCF sector to play an increasingly important role and states that current policies, mostly related to afforestation and forest restoration, "gives grounds to argue" that emissions removals will increase in the coming years (Republic of Azerbaijan, 2021).

The government is sustaining Azerbaijan's unhealthy dependence on fossil fuels

Azerbaijan's domestic energy sector is entirely dependent on fossil fuels. Fossil gas and oil made up 66% and 32% of primary energy consumption in 2023, respectively. Domestic fossil gas consumption is growing at a rapid rate, rising to 60% over the decade (Energy Institute, 2023). Renewable's share of total energy supply has decreased from 18% in 2010 to around 5% in 2020 as result. Azerbaijan has a high level of government fossil fuel subsidies, which amounted to around USD 12 million in 2020 (OECD, 2021)

Azerbaijan's economy is heavily reliant on fossil fuels exports. Azerbaijan is the 23rd largest fossil fuel exporter in the world and holds an estimated 0.4% of global oil and 1.3% of global gas reserves (BP, 2023; Federal Reserve Bank of St Louis, 2024).

In 2023 crude oil exports amounted to 520,000 barrels per day (bpd) with approximately 75% of this exported to Europe (Federal Reserve Bank of St Louis, 2024; Ministry of Energy of the Republic of Azebaijan, 2024; US EIA, 2024). In the same year Azerbaijan exported 23.9 bcm of fossil gas, the majority flowing to Europe (Ministry of Energy of the Republic of Azebaijan, 2024). Altogether, oil, gas, and petroleum-related product exports account for 90% of the country's export revenue, 60% of government revenue and 35% of its GDP (IEA, 2021; State Statistical Committee of the Republic of Azerbaijan, 2024c)

Fossil gas is overtaking oil in Azerbaijan's export landscape, with oil reserves expected to run out in 25 years. Between 2018 and 2023, the production ratio of oil to gas shifted from 70:30 to 50:50, and gas production is set to rise by a third in the next decade (State Statistical Committee of the Republic of Azerbaijan, 2024b). In 2018, crude oil made up 84% of export revenue, dropping to 46% by 2023, while gas exports grew from 9% to 30%[4].

A similar trend is observed in the contribution of fossil fuels to the country's GDP. In 2018, crude oil represented 35% of Azerbaijan's GDP, with natural gas adding another 4%. By 2023, the dependence on crude oil for GDP had dropped to 21%, while fossil gas's share had grown considerably to 14%[5]. Despite this shift, over 90% of total export revenue and more than a third of GDP still depend on fossil fuels, raising concerns about Azerbaijan's transition away from this economic reliance (IEA, 2024a; State Statistical Committee of the Republic of Azerbaijan, 2024c)

The government is driving the continued expansion of fossil fuel production. The government plans to increase fossil gas extraction by more than 30% over the coming decade and has defended its "right" to continue investment in and production of fossil fuels (POLITICO, 2024). Azerbaijan is supporting a British Petroleum (BP) led giant new oil development in the Caspian Sea which has just started "gushing" oil (Offshore Energy, 2024).

In the wake of the Russian invasion of Ukraine, Europe's demand for fossil gas from alternative sources to Russia has provided greater incentives and access to investment. In 2022, Azerbaijan pledged to double Europe-bound exports to 20bcm per year by 2027, which is which is equivalent to close to 10% of 2023 the bloc's gas demand (Euronews, 2022; European Council, 2024).

Investment in the industry continues to flow from deals brokered by the government with major companies, such as Britain's BP and France's TotalEnergies. The government is also investing in fossil fuel infrastructure, such as the Trans-Adriatic Pipeline (fossil gas) which is set to increase capacity by 10 billion cubic metres over the next five years (Eurasianet, 2024).

4 Calculations based on data from the https://www.stat.gov.az/source/trade/?lang=en

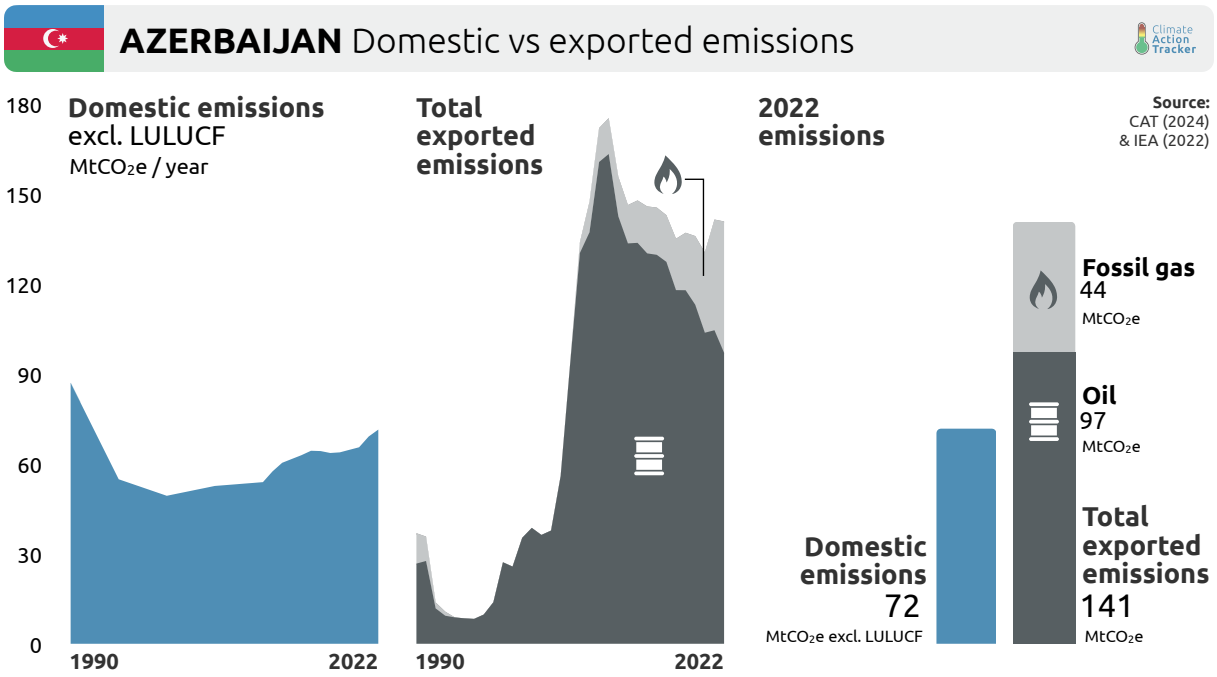
5 Same as above

However, Azerbaijan's plans to double gas exports to the EU by 2027 face significant challenges. To meet this target, Azerbaijan needs to increase production in the Caspian Sea and expand pipelines in Southern Gas Corridor, which will require significantly more investment (Economist Intelligence Unit, 2023). However, Azerbaijan has reportedly struggled to secure long term gas deals from the EU (Financial Times, 2024). The bloc's gas demand is declining as renewable deployment accelerates and traditionally gas-dependent sectors are increasingly electrified. Azerbaijan gas will also have to compete with LNG imports.

Azerbaijan cannot continue relying on fossil fuel exports to Europe. The IEA 1.5°C zero pathway shows that to reduce emissions quickly, countries need to stop developing new oil, gas and coal resources (IEA, 2023b). Projections show current policies will lead to a significant reduction in global oil demand in the next years, with OECD countries projected to peak their oil demand by 2025 (IEA, 2024b). Demand for gas in Europe has started decreasing. Any new investments into oil and gas production capacities might risk becoming stranded in a 1.5°C aligned world.

Azerbaijan's fossil fuel exports set to contribute to the climate crisis - both within and outside its border

In 2022, Azerbaijan's exported emissions were almost twice as large as its domestic emissions (see graph below). Exported emissions are crucial as they reflect the environmental impact of the Azerbaijan's fossil fuel dependency beyond its borders. While these emissions are not included in its national inventory, they offer a more comprehensive picture of Azerbaijan's responsibility as an oil and gas exporter.



Fossil fuel production has also resulted in skyrocketing, unabated methane emissions. Azerbaijan's methane emissions have significantly increased since the early 2000s, largely driven by rising fossil gas production and energy consumption. Methane currently makes up over a third of Azerbaijan's total national emissions (State Statistical Committee of the Republic of Azerbaijan, 2024a). Satellite data shows gas flaring has surged in recent years, increasing by nearly 11% since 2018 (Global Witness, 2024).

In March 2024, Azerbaijan joined the Global Methane Pledge, originally presented at COP26. It commits to a 30% reduction in methane emissions (compared to 2020 levels) by 2030 (COP29, 2024). While it is a positive development that Azerbaijan has directly committed to reducing its methane emissions, its policies to mitigate gas flaring have not been effective – the Sangachal terminal is on track for its highest annual flare rate ever this year (Global Witness, 2024).

The credibility of the government's commitment to a transition in the power sector remains low

In 2023, 94% of power generated in Azerbaijan came from burning fossil fuels. Total power production amounted to 29.3bn kWh – 92% came from fossil gas, 2% oil. At 5%, hydropower accounted for the largest portion of green energy production while other renewables contributed less than 1% (The Ministry of Energy of the Republic of Azerbaijan, 2024).

The indicator "Installed capacity" always shows a higher share for renewable energy, due to the different capacity factors associated with different technologies. Azerbaijan's installed power capacity mix totals 8320 MW. Renewable capacity made up around 1687 MW or 20% of this, three quarters hydropower (1300 MW) but also some solar and wind (281 and 66 MW, respectively) (The Ministry of Energy of the Republic of Azerbaijan, 2024). However, the overall picture remains unambiguous – the share of renewables in the power sector is extremely low.

Renewable energy is incipient in the power sector but is growing. Azerbaijan has significant renewable energy resources. Technical potential for solar is estimated at 23 000 MW, 3000 MW for wind, 520 MW for small hydro, and 380 for biomass (IEA, 2023a).

In 2021, Azerbaijan's Parliament passed the Law on the Use of Renewable Energy Sources in the Production of Electricity. This law provides a basic legal framework for renewable energy projects, which can be procured through renewable energy auctions and direct negotiation. State control remains significant in procurement and all projects exceeding 150 MW require a licence.

The government has moved forward with several renewable energy projects in recent years and plans to operationalise nine solar and wind farms by 2027 with a combined capacity of 2000 MW and 10 more by 2030 for a total combined capacity of 5000 MW. However, only 2000 MW of this capacity is planned for the domestic market, the rest is set for export.

International investment and financial assistance are enabling renewable development. Azerbaijan has attracted significant international financing to support renewable energy. The European Bank for Reconstruction and Development (EBRD) provided financing for the first utility-scale Garadagh Solar PV Plant and the country's largest wind farms in Absheron and Khizi.

The EBRD also supported the government in launching its first 100 MW renewable energy auction in April 2024 (EBRD, 2024). The Ministry of Energy has signed an Implementation Agreement with ACWA Power, a Saudi Arabian energy firm, for the development of an offshore windfarm with 1.5 GW of installed capacity (Azerbaijan Renewable Energy Agency, 2024).

While Azerbaijan could still meet its renewable target, the target itself is unambitious and will only make a marginal impact on emissions – particularly if capacity and generation are not well-aligned. The government set a renewable energy capacity target of 30% by 2030 (Republic of Azerbaijan, 2023).

Azerbaijan is slightly behind on achieving this target: it only reached its 2020 milestone of 20% capacity in 2023. New wind capacity was expected to considerably contribute to this target, but most of it was met using hydropower and some solar. Azerbaijan's planned renewable energy projects would result in its 2030 target being overachieved. However, renewable energy capacity does not translate to renewable electricity generation, accounting for less than 5% of electricity produced in 2022 (Ember, 2024).

The government's decarbonisation path for the sector is unclear and the transition uncertain. While there have been some positive steps in the right direction in recent years, the government does not have a plan or necessarily stringent policies to transition from fossils to renewables in the power sector.

Much of the progress to date depends on the discretionary power of a state (e.g. in procuring new power through direct negotiations) that continues to provide much more support to the fossil fuel industry. For example, while the government's 2022-26 strategy indicated a gradual phase out of fossil fuel subsidies, any evaluation of progress is limited by low transparency or public access to relevant information. This is compounded by the fact that little relevant information is disclosed by state-owned energy companies that are both recipients of subsidies and vehicles for providing government support for energy consumers (OECD, 2018).

4 Assumptions

4.1 Historical emissions

We used Azerbaijan's most recent historical emissions data from its national statistics website, which covers the years 1990, 1995, 2000, 2005, 2010–2022 and includes the LULUCF sector (State Statistical Committee of the Republic of Azerbaijan, 2024a). The gaps in emissions data before 2010 were filled in by interpolating between years.

Azerbaijan presents its emissions using the GWPs of IPCC's second assessment report (SAR). We used its gas-by-gas data to estimate an AR4 conversion coefficient (State Statistical Committee of the Republic of Azerbaijan, 2024a).

4.2 Exported emissions

The data used to estimate Azerbaijan' exported emissions comes from two sources:

- Fossil fuel exports data is taken from the 2022 IEA World Energy Balances (IEA, 2022)
- Fossil fuel emission factors data is taken from the IPCC emissions factors database (IPCC, 2023).

The IPCC data shows the amount of carbon per energy unit for crude oil, natural gas and coal. This is converted to CO_2 values by adding the atomic mass of oxygen to the value for carbon. The total emissions of exported fossil fuels are calculated assuming 100% combustion and release of the carbon contained in it, which only provides a rough estimate of real exported emissions.

4.3 NDC targets

In 2023, Azerbaijan submitted an updated NDC, which presented a target of 40% emissions reductions below 1990 levels by 2050 (Republic of Azerbaijan, 2023). Azerbaijan originally targeted a 35% reduction by 2030 (Republic of Azerbaijan, 2017), but based on the formulation of the new NDC it appears this original target was disbanded. To calculate Azerbaijan's 2030 emissions level under its new climate target, we took a linear interpolation between the most recent historical data point (2022) and the 2050 target value, the latter representing a 40% reduction in 1990 emissions including LULUCF.

According to our calculations, this leads to a higher emissions level in 2030 than under its original NDC (excl. LULUCF), although not by much, representing an emissions level of 68 $MtCO_2e$ versus 63 $MtCO_2e$ in 2030, respectively.

Azerbaijan's updated NDC states that the target will consider the maximum absorption capacity of forests and other ecosystems, but it does not provide clear assumptions of the LULUCF sector's contribution to meeting it. In 2050, we assume that LULUCF emissions remain constant to the most recent historical year (2022). If Azerbaijan relies on increasing LULUCF removals by 2050 to meet its target, our estimates of its 2030 emissions levels could be even higher than our initial estimates.

4.4 Current policy projections

Azerbaijan's Fourth National Communications (NC4) includes a 'with existing measures' (WEM) scenario, which has mitigation actions "that are being implemented or the financing of which has already been determined and the implementation of which has been approved" as well as a baseline scenario where "no policies and measures (i.e. mitigation actions) are implemented in terms of GHG emissions" (Republic of Azerbaijan, 2021). Thus, we considered these for our current policy scenario. Almost all the mitigation actions outlined in the scenario are in the energy sector, which includes Azerbaijan achieving their renewable energy capacity targets of 20% by 2020, 25–28% by 2025, and 30–35% by 2030.

In the presented WEM scenario, it appears a considerable share of the emissions reductions occur in the first few years of policy implementation (2016–2018). However, this trajectory was not evident in Azerbaijan's actual historical emissions from 2016 and onwards. Beyond the renewable energy capacity targets, of which Azerbaijan did not meet its 2020 target and is off track to reach its 2030 target, it is unclear to what extent the mitigation actions have been implemented. To create a range for CPP, we took two different assumptions using the presented scenario:

1. **Lower end:** we assume the initial emissions reductions outlined in the WEM have been delayed by a few years but would still be implemented having started occurring after the last historical data point. Emissions would reach the absolute value presented in the NC4, resulting in a lower end of current policy projections of 81 $MtCO_2e$ in 2030. We interpolated emissions between 2022 and 2030.
2. **Upper end:** we assume that Azerbaijan's emissions trajectory follows the annual growth rate of the baseline scenario applied as of 2022 to 2030, resulting in an upper end of current policy projections of 92 $MtCO_2e$ in 2030.

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Authors

NewClimate Institute

Ana Missirliu
Catrina Godinho
Natalie Pelekh
Niklas Höhne

Climate Analytics

Danial Riaz
Sofia Gonzales-Zuñiga
Bill Hare
Jane Ellis

Editing
Cindy Baxter

Design
Designers For Climate

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The Consortium

The Climate Action Tracker (CAT) is an independent scientific analysis produced by three research organisations tracking climate action since 2009. We track progress towards the globally agreed aim of holding warming well below 2°C, and pursuing efforts to limit warming to 1.5°C.

climateactiontracker.org

Climate Analytics is a non-profit institute leading research on climate science and policy in relation to the 1.5°C limit in the Paris Agreement. It has offices in Germany, the United States, Togo, Australia, Nepal and Trinidad and Tobago.

climateanalytics.org

NewClimate Institute is a non-profit institute established in 2014. NewClimate Institute supports research and implementation of action against climate change around the globe, covering the topics international climate negotiations, tracking climate action, climate and development, climate finance and carbon market mechanisms. NewClimate Institute aims at connecting up-to-date research with the real world decision making processes.

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