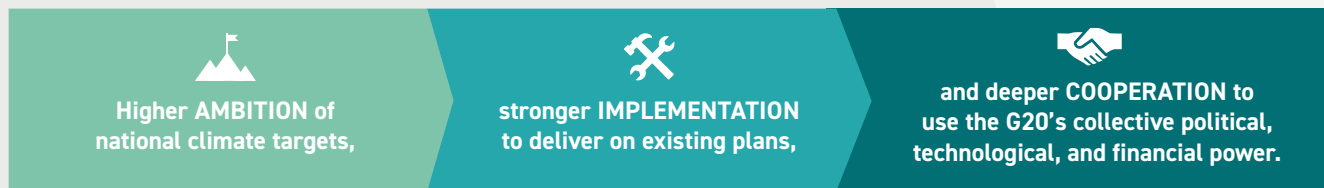


G20 ACCELERATION CALL

FROM COAL TO RENEWABLES

The Secretary-General of the United Nations, António Guterres, has called on the G20 to super-charge efforts to achieve the Climate Solidarity Pact through an Acceleration Agenda. For the G20 this entails that **“all big emitters make extra efforts to cut emissions, and wealthier countries mobilise financial and technical resources to support emerging economies in a common effort to keep 1.5°C alive.”** Three steps are key to accelerate climate action in the G20:



With the Acceleration Agenda, Mr. Guterres urged governments to commit to reaching net-zero as close as possible to 2040 and emerging economies as close as possible to 2050. Specifically, he called for a number of actions to phase-out coal and rapidly phase-in renewables:



This Acceleration Call takes stock of this transition in G20 members and identifies urgent recommendations for each country.

This G20 Acceleration Call by the Climate Transparency partnership demands that G20 members step up their climate action in support of the Acceleration Agenda of the Secretary General of the UN. The Call defines what G20 members must do to fully transition from coal to renewable energy. A second Call will be published towards the end of 2023 and will address oil and gas in G20 members.



STOCKTAKE

G20 MEMBERS HAVE A GREAT RESPONSIBILITY, BUT THEIR OVERALL AMBITION IS TOO LOW

G20 members account for around 85% of global GDP, 75% of international trade, and two-thirds of the world's population, and are responsible for around three-quarters of global emissions. The USA is estimated to be responsible for 25% of the global historical emissions, followed by the EU (22%), China (13%), Russia (6%), Japan (4%), and India (3%). Therefore, the G20 members carry the highest responsibility for climate action. And they should live up to it!

ALL G20 COUNTRIES SHOULD SIGNIFICANTLY RAISE THE AMBITION OF THEIR NDCs

NDCs ARE NOT 1.5°C COMPATIBLE

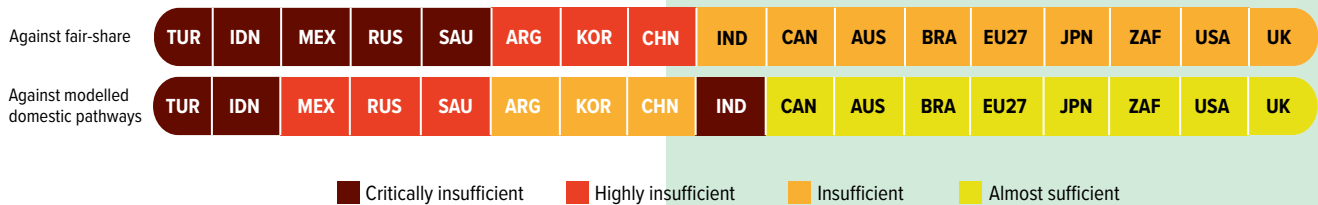
Nationally Determined Contributions (NDCs) contain country specific plans to realise the Paris Agreement. Collectively, however, the ambition is not high enough to stay below 1.5°C.



Find more at [Climate Action Tracker](#).

This fair-share assessment takes into account a country's domestic emission reductions and any emissions it supports abroad through the use of market mechanisms or other ways of support.

NDC target ratings



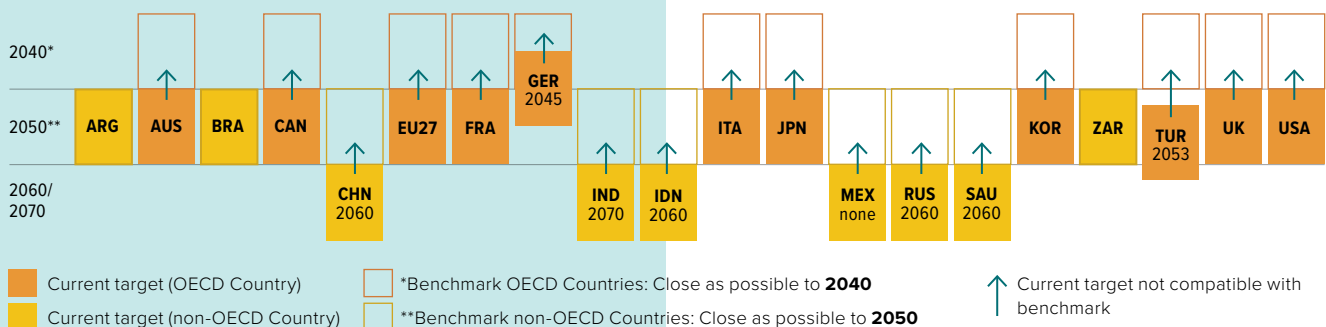
MID-CENTURY NET ZERO TARGETS OF G20 MEMBERS ARE NOT SUFFICIENT TO KEEP 1.5°C ALIVE

Net zero targets are key for long-term planning. Most members of the G20 have set net zero targets for 2050 or thereafter, which is much later than that called for by the UN Secretary General.



Find out about the status of countries' Long-Term Targets at [Climate Watch](#).

G20 net zero targets



STOCKTAKE

TARGETS FOR PHASING-OUT COAL AND PHASING-IN RENEWABLES ARE NOT SUFFICIENT

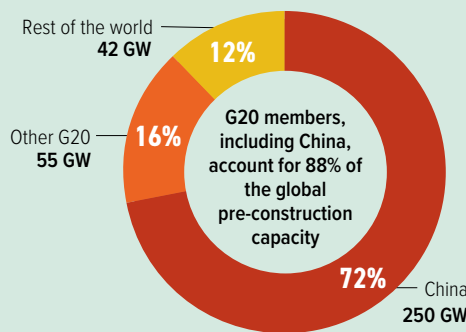
The necessary emissions reductions are highly contingent on the decarbonisation of the power sector, as the decarbonisation of other sectors – such as transport, industry, and buildings – is based on electrification. To succeed, a coal phase-out must go hand-in-hand with rapid growth in renewable energy deployment as well as increased energy efficiency. Ambitious national targets are important signals to relevant stakeholders, including sub-national governments, business, investors, and citizens.

G20 MEMBERS MUST COME FORWARD WITH MORE AMBITIOUS TARGETS TO ENSURE NET ZERO ELECTRICITY GENERATION

NATIONAL COAL PHASE-OUT PLANS ARE INSUFFICIENT

All countries must phase out coal-fired power generation, by 2030 (OECD) and 2040 (non-OECD), as suggested by the UN Secretary General. To date, only six G20 members (Canada, France, Germany, Italy, South Korea and the UK) have set a coal phase-out date. At the same time, G20 member states are home to 88% of the remaining global plans ('pre-construction') for new coal power capacity, with the largest share in China.

Planned coal capacity



View E3G's G20 coal transition progress tracker [here](#).

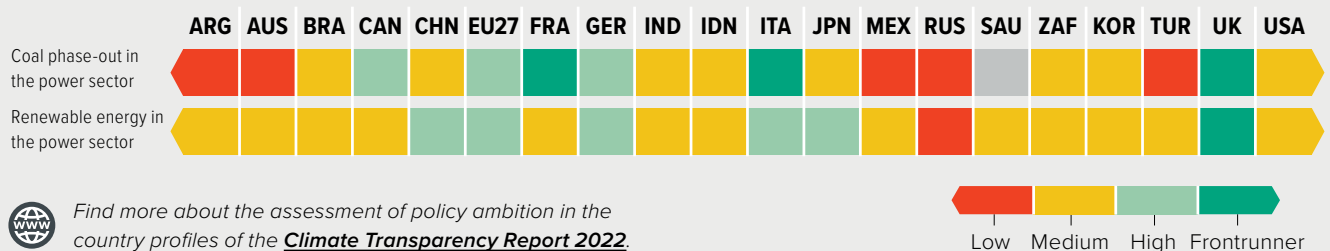
MOST NATIONAL RENEWABLES TARGETS ARE INSUFFICIENT

According to the IRENA, the world must add an average of 1,000 GW of renewable power capacity annually until 2030 to keep 1.5°C target within reach. Only 3 of the 12 OECD members of the G20 have renewable targets (incl. hydro) in the power sector until 2030 of at least 80% (Australia, Germany, United States), and 5 of the 8 non-OECD countries of the G20 have targets between 40 and 60% (Argentina, China, India, Saudi Arabia, South Africa). This is not sufficient to ensure net-zero electricity generation until 2035 for OECD and until 2040 for non-OECD countries.

Find out more on shares of renewables in the power sector in the [Climate Transparency Report](#).

MOST G20 MEMBERS STILL HAVE INSUFFICIENT POLICIES FOR PHASING-OUT COAL AND PHASING-IN RENEWABLES

Policy ambition assessment



Find more about the assessment of policy ambition in the country profiles of the [Climate Transparency Report 2022](#).

STOCKTAKE

IMPLEMENTATION LAGS BEHIND

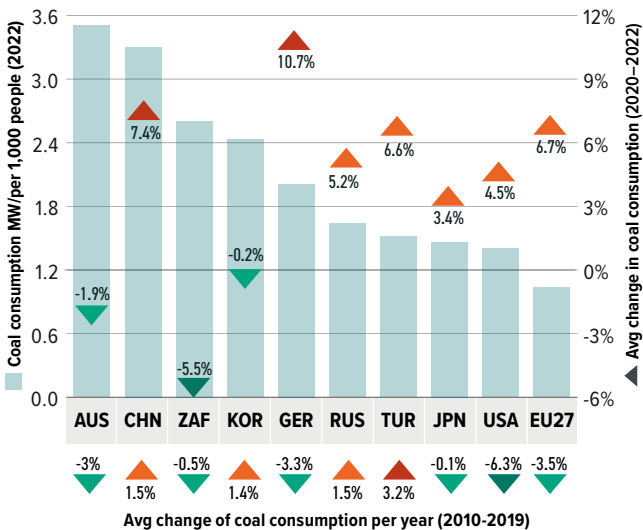
Policies need to be not only ambitious but also implemented in an effective, fast and fair way. Despite strong incentives, the pace of the energy transition is too slow.

“We will rapidly scale up the deployment of zero and low emission power generation, including renewable energy resources, and measures to enhance energy efficiency ...” (Bali Leaders' Declaration of the G20 Presidency of Indonesia, 2022)

THE G20 NEED TO ACCELERATE IMPLEMENTATION OF THE COAL PHASE-OUT AND SCALE UP RENEWABLE ENERGY DEPLOYMENT

COAL CONSUMPTION IS STILL RISING, ESPECIALLY IN NON-OECD COUNTRIES OF THE G20

Coal consumption in the G20 (top 10)



Coal consumption in the G20 grew, on average, by 7.2% per year between 2020 and 2022 (3.8% in OECD and 8% in non-OECD G20 members). This is a worrisome trend, given that the average change in coal consumption between 2010 and 2019 was 0.4% (-3.8% in OECD G20 countries and 2% in non-OECD G20).

In 2015, G20 members generated an absolute amount of 8,565 TWh of coal-fired electricity, increasing by 11% to 9,475 TWh in 2022. This increase is being driven by China, India, Indonesia, Russia and Turkey.

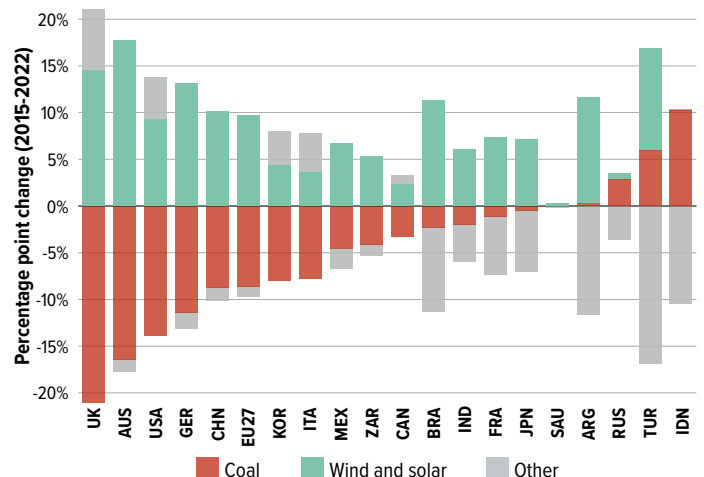
Read more on coal consumption trends in the [Enerdata Global Energy Trends 2023 report](#) and about coal capacities in the [Global Energy Monitor](#).

SHARE OF RENEWABLES IN THE ELECTRICITY GENERATION MIX IS INCREASING, BUT NOT QUICKLY ENOUGH

Renewable energy accounted for almost 29% of electricity generation in 2021, compared to 22% in 2014 and 19% in 2010. This growth in the share of renewables has primarily been driven by wind and solar installations. The highest increases in wind and solar in the electricity mix between 2015 and 2022 have been recorded in Australia, the UK and Germany, followed by Brazil and Argentina. The greatest increases in absolute terms are reported in China.

Find out more in the [2023 Ember Global Electricity Review](#).

Change in G20 electricity mix



COAL PRICES FLUCTUATE, REDUCING COMPETITIVENESS ...

Coal prices have fluctuated strongly in recent years ranging from USD 50 to 298 per tonne. Reasons are supply and demand imbalances and high gas prices, which prompted a resurgence of power production from coal and resulted in soaring prices for high-quality coal in the first half of 2022.



Global coal demand, however, is at an all-time high, with 8,031 Mt projected for 2024.

... AND INVESTMENTS IN THE COAL INDUSTRY LEAD TO STRANDED ASSETS

There is a limited window of opportunity for investors and decision-makers to react. Despite higher coal consumption to compensate for energy shortages, there should be no investments in a dying industry. The estimated global net present value of stranded assets in coal power generation through 2050 ranges from USD 1.3 to 2.3 trillion.



Read more in the [IEA's Coal 2022 report](#), and at [Reuters](#) and a [Study by Chen et al.](#)

DECREASING RENEWABLES PRICES SAVED CONSUMERS' BILLIONS ...

The competitiveness of solar and wind energy has improved significantly in the last few years. Almost two-thirds of renewable power added in 2021 had lower costs than the cheapest coal-fired options in G20 members.

Worldwide, the increase in renewable capacities is estimated to have saved consumers more than USD 110 billion between 2021 and 2023.

... AND INVESTMENTS ARE SKYROCKETING. HOWEVER, THEY ARE HEAVILY CONCENTRATED IN A HANDFUL OF COUNTRIES

Annual investments in renewable power worldwide have more than doubled in the last decade, reaching almost USD 659 billion in 2023. The largest increase in annual clean energy investment between 2019 and 2023 was seen in China, followed by the EU and the USA.



Read more in the IEA's [Renewable Energy Market Update 2023](#) and [World Energy Investment 2023 Report](#).

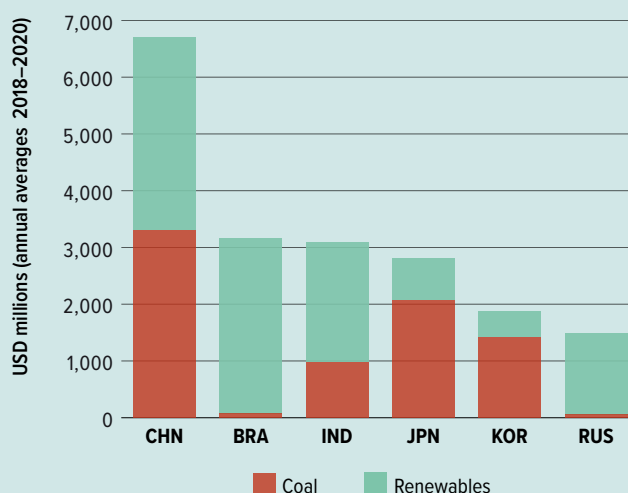
INTERNATIONAL PUBLIC FINANCE FOR RENEWABLES HAS SURPASSED INTERNATIONAL PUBLIC FINANCE FOR COAL

In recent years China, Japan, South Korea, and India still issued significant international public finance for coal. However, at the same time the G20 cumulatively spent more international public finance on renewables (USD 13.65 billion) than on coal (USD 8.15 billion).



For more, see the [Oil Change International Public Finance for Energy Database](#).

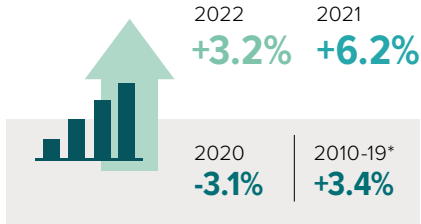
International public finance for coal compared to renewable energy from G20 members (over USD 1 billion)



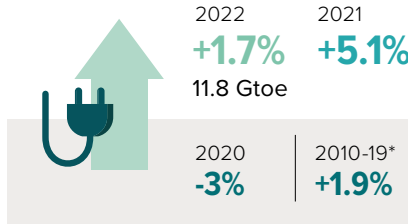
G20 ENERGY CONSUMPTION IS RISING, MAKING THE DECOUPLING OF EMISSIONS FROM ECONOMIC GROWTH MORE CHALLENGING

Energy-related CO₂ emissions continue to rise, driven by increasing demand for electricity in the G20 (+2.2% in 2022, +2.7% per year between 2010-2019) as well as insufficient growth in the share of renewables in the energy mix. A decoupling of emissions from GDP growth has not happened so far.

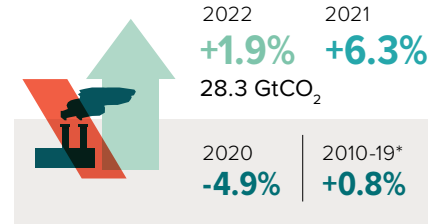
ECONOMIC GROWTH



ENERGY CONSUMPTION



CO₂ EMISSIONS



*%/year



Read more in the [Enerdata Global Energy Trends 2023 report](#).

THE NEED FOR A JUST AND INCLUSIVE ENERGY TRANSITION

The G20 has emphasised the need to ensure an energy transition that is just, inclusive, and sustainable. The group adopted an energy transition strategy, the "Decade of Actions: Bali Energy Transition Roadmap", during the Indonesian Presidency in 2022. An important component of the Bali Roadmap is the 'Presidency Troika' action plan, under which the G20 is to adopt key principles and guidelines for a just and inclusive energy transition.

The following priority areas for a just and inclusive energy transition are mentioned:

- Employment and jobs, social and economic development, and engaging the people in the transitions.
- Gender equality, behavioural aspects, and quality of life.
- Eliminating energy poverty and integrating younger generations in decision-making.



Further details in the T20 Policy Brief [Principles and Guidelines for a Just and Inclusive Energy Transition](#).
Read more on how the G20 could achieve a Just Energy Transition in [SEI's Brief](#).

"All big emitters make extra efforts to cut emissions in a common effort to keep 1.5°C alive"

António Guterres

THE MOMENT FOR ALL G20 MEMBERS TO COME TOGETHER IN A JOINT EFFORT IS NOW

Urgent climate action requires the strongest level of multilateral cooperation and international solidarity. In terms of phasing-out coal and phasing-in renewables, this means that G20 members must honour their commitments and show climate leadership based on common but differentiated responsibilities. Among other things, this includes that developed countries should mobilise financial and technical resources to support developing countries.

THE G20 MUST REDIRECT AND STRENGTHEN FINANCE FOR THE ENERGY TRANSITION

INTERNATIONAL PUBLIC FUNDING FOR COAL HAS TO END

The continued support (via fiscal support, public finance, and state-owned enterprise investment) by G20 governments for coal is incompatible with achieving the aims of the Paris Agreement.

USD 17bn



G20 governments give nearly USD 17 billion per year to other countries for coal mining and coal-fired power plants



Find more on each G20 country's coal subsidies at [ODI.org](https://www.odi.org) and visit the [fossil fuel subsidy tracker](#) interactive database.

COOPERATION IN RESEARCH AND INNOVATION IS BENEFICIAL

At COP26, the Breakthrough Agenda was launched as a commitment to work together in five major sectors to accelerate innovation and deployment of clean technologies, making them accessible and affordable for all, during this decade.

To support this, Mission Innovation is a global initiative to catalyse action and investment in research, development, and demonstration (RD&D). Major G20 economies are part of the initiative, however, more should join.



Find more about [Mission Innovation](#).

G20 SOLUTIONS FOR THE DEBT CRISIS ARE CRITICAL FOR CLIMATE ACTION

The global debt crisis is a major obstacle to climate action in many countries. The G20 has recognised this, but responses to date (e.g., the Debt Service Suspension Initiative and the Common Framework for Debt Treatments) have been insufficient. Additionally, the G20 has called on private creditors to participate in debt relief but, so far, their participation has been limited. The stocktaking exercise of data sharing with International Financial Institutions for private sector lenders is encouraged by the G20.

INTERNATIONAL SUPPORT AND CLIMATE FINANCE IS CRUCIAL

According to the International Monetary Fund, aligning infrastructure with net zero emissions requires additional public investments in the range of 0.5 to 4.5% of GDP cumulatively over the next decade, with most estimates clustered around 2% of GDP. However, renewable energy projects struggle to evolve in many parts of the developing world, and so the current development pathway for many economies points to higher emissions. Redoubling international support is necessary. This should include efforts to boost and improve international climate finance and to give international public finance institutions a strong strategic mandate to finance clean energy transitions.



More details available in the IEA's report [Financing Clean Energy Transitions in Emerging and Developing Economies](#).

PARTNERSHIPS ARE KEY

Partnering to phase out coal and phase in renewables is key and takes many forms. For example, multi-stakeholder partnerships such as the Powering Past Coal Alliance bring together stakeholders from governments, business, and civil society. Such initiatives can be implemented on international, country or local levels. Further, Just Energy Transition Partnerships (JETPs) between donor and recipient countries offer a transformative approach

to leapfrog from coal to renewables, if properly designed and implemented. Currently, four JETPs are active in South Africa, Vietnam, Indonesia, and Senegal, and a number of other countries are developing JETPs.



Read more on how the G7 and G20 can improve JETPs in the [Brief by Ecologic](#).

RECOMMENDATIONS

WHAT EACH G20 MEMBER SHOULD DO TO ACCELERATE THE TRANSITION FROM COAL TO RENEWABLES

These recommendations show what concrete steps should be taken in the areas of:



AMBITION



IMPLEMENTATION



COOPERATION



ARGENTINA



Argentina should **redirect fossil fuel subsidies** and aim for energy sovereignty

The possibility of redirecting fossil fuel subsidies to favour and boost the energy transition should be discussed while considering the real costs of the sector. This can be a source of financing to enable the diversification of the energy matrix and electricity transmission infrastructure works. Additionally, the debate should aim to achieve energy sovereignty, improving access to energy and reducing GHG emissions, thus contributing to the sustainable development of the sector.



Argentina must expand and interconnect the electricity transmission system

The transmission grid represents one of the main bottlenecks for adding more installed capacity from renewable energy sources throughout the country. Progress in this regard would also offer the integration of the electricity grid with that of neighbouring countries to expand the possibility of exporting energy.

For successful implementation, the government should complete the provincial adherence to Law 27.424 (Promotion of Distributed Generation of Renewable Energy) integrated into the Public Electricity Grid and expand it. This would allow the increase of installed capacity by circumventing restrictions in the transmission system, the promotion of new market niches, and the provision of alternatives for electric cooperatives to join these generation models. As of now, the Law only contemplates the generation of electricity at the point of consumption and up to a maximum limit of 2 MW.



Argentina needs **international financial support** to advance the implementation of the National Climate Change Adaptation and Mitigation Plan

In its National Climate Change Adaptation and Mitigation Plan published in 2022, Argentina estimated that almost USD 300 billion is required for effective implementation. This must come from a readjustment of domestic financing, but also from significant international financial support.

“We reiterate our commitment to achieve global net zero greenhouse gas emissions/carbon neutrality by or around mid-century”

Bali Leaders' Declaration of the G20 Presidency of Indonesia, 2022



AUSTRALIA



Australia must accelerate the phase-out of fossil fuels to scale up its climate action

With fossil fuel consumption contributing to more than three-quarters of the nation's emissions (excluding LULUCF) and no set timeframe for phase-out, expediting the transition away from coal, oil and gas is critical for Australia to scale up its climate action. To align with the imperative of limiting global warming to below 1.5°C by the century's end, Australia must phase out coal from its power sector by 2030 and fossil gas by the mid to late 2030s.



Australia needs to make its emissions reductions policies more effective

Australia faces challenges related to grid connections and administrative obstacles, which are impeding the progress towards the nationwide 2030 renewable generation target of 82% and hindering the crucial transition away from coal and gas electricity generation. The Safeguard Mechanism Reform, the government's main policy to tackle emissions from large industrial facilities, has a major loophole that allows polluters to avoid electrification and direct emissions reductions by purchasing offsets, amid concerns about the reliability of Australia's carbon crediting system.



Australia must **stop exporting fossil fuels**

Fossil fuel producers are actively pursuing new coal and gas projects in Australia. The Australian government is not only endorsing extensive areas for fracking and exploration, but also providing substantial financial support to these projects, while establishing a framework for allowing exports of CO₂ for carbon capture and storage (CCS). The government must cease its support for these ventures and, instead, collaborate with trade partners to accelerate the transition towards clean energy systems.



BRAZIL



Brazil should phase out fossil fuel subsidies and **halt deforestation** in the Amazon by 2030

Brazil's path towards sustainability demands urgent and decisive action. By 2030, Brazil should aim for a complete halt to deforestation in the invaluable Amazon and a rigorous phase-out of fossil fuel subsidies. Prioritising renewable energy and forest conservation could enable Brazil to fulfil its climate commitments. Through such actions, Brazil could assert global leadership in climate action.



Brazil must implement the low-carbon transformation through fossil fuel subsidy redirection and forest conservation

To implement Brazil's sustainability goals, a phased plan for the redirection of fossil fuel subsidies is crucial and must be based on a comprehensive assessment of their true impact and strategic reallocation towards the transition to renewable energy. Prioritising the development of renewable infrastructure can utilise Brazil's unique geographic advantages in solar, wind, and hydropower. Simultaneously, strengthened policies must halt Amazon deforestation and promote sustainable land use, alongside incentives for local communities to conserve forests.



Brazil should **demonstrate leadership** by leveraging international cooperation mechanisms of Article 6 and propelling South American renewable energy integration

The Paris Agreement's Article 6, enabling international cooperation mechanisms, holds significant potential for Brazil. This provision can incentivise domestic emissions reductions and stimulate renewable investments. Furthermore, establishing a complementary energy system across South America through regional cooperation can optimise regional resources, reducing overall carbon emissions. As a renewable energy powerhouse, Brazil can lead this transformation, generating green partnerships in the Global South, inspired by successful models such as the EU's Global Gateway.



CHINA



China should build a better regime for **rapid increase of renewable energy** development

In China, newly installed capacity of solar PV in the first half of 2023 was 78 GW, accounting for around 45% of all newly installed capacity globally. Solar and wind power development in China is transitioning into a new market-driven period with less focus on policy incentives. The development of solar PV and wind power will keep accelerating, which should lead to a reduction of coal use in China. However, with rapid development of solar PV and wind, a new regime to get larger amounts of renewable electricity in is strongly needed.



China should regulate the green electricity market and implement flexible end user's price regimes

One way to make more use of renewable energy is to increase the availability to the end user, and an electricity market is an efficient way to do so. China is making progress to build an electricity market now, but it is still in its early stages. There is large potential for solar and wind power in North-West China, North China, and North-East China. An electricity market with full country coverage is crucial to utilise more renewable energy soon. The implementation is realistic by 2025.



China should learn from best practices in a renewable energy market in the EU and Australia

Knowledge sharing from the EU and Australia, where there are already electricity markets in place, would help support China's efforts to facilitate new electricity market regime building. Workshops as well as trips that involve direct observation of market behaviour could be planned to understand in detail the various steps that need to be taken for electricity regulation and implementation.



EUROPEAN UNION



The EU should commit to at least 50% renewable energy and a **firm coal phase-out in 2030**

The current target (42.5% renewable energy by 2030) is not enough for the EU to be aligned with the Paris Agreement. Ambition should be accelerated to at least 50% renewable energy in 2030, especially as an overwhelming majority of EU citizens (87%, according to Eurobarometer Summer 2022) support massive investments in solar and wind energy.

Most Member States have committed to a coal phase-out, albeit at too late a date. By sunseting coal at the same time as massively ramping up renewable energies, the EU could give credibility to its ambition.



The EU needs to vastly **improve the inter-connectivity** of all European electricity networks

The Trans-European Network for Energy (TEN-E) needs to pave the way for a fully integrated electricity market throughout the EU and bordering third countries, even if it comes at the cost of limiting the energy autonomy of EU Member States as embedded in Article 194 of the Treaty on the Functioning of the European Union (TFEU). It is in the strategic self-interest of the EU and all its Member States to create a robust electricity-based energy autonomy, in order to lessen dependence on energy imports and to create a level playing field for energy access throughout the EU.



The EU needs to ramp up its **Global Gateway Strategy** on cooperative efforts for a world-wide energy transition

The goals of the Paris Agreement can ultimately only be achieved if all countries in the world undergo a fast and fair transition to renewable energy generation. The EU needs to build up a network of partners for sustainable energy in the Global South through green investments as an international counterpart to the EU's Green Deal. The EU's Global Gateway has already paved the way for increased sustainable investments in Africa and Latin America. The investment sum of EUR 300 billion needs to be realised in full.



FRANCE



France needs to confirm its 2030 climate target

France is currently in the process of revising its 2030 GHG reduction target in accordance with the EU “Fit-for-55” strategy. The national target should reach at least 55% net emissions reductions between 1990 and 2030, in conjunction with the objective of achieving climate neutrality by 2050. In line with this ambition, the targets for the deployment of renewable energy (currently: reaching a 33% share in final energy consumption by 2030 compared to 19,3% in 2021) should also be increased.



France needs to accelerate the deployment of renewable energies in all sectors

France has been lagging behind its national renewable energy target for 2020, mostly in the heating sector. Achieving decarbonisation targets for 2030 requires a strong focus on electrification in all sectors (mostly transport, buildings and industry), based on an acceleration of deployment of renewables in the power sector. Some of it can be achieved with the simplification of administrative procedures and measures aimed at increasing local acceptance.



France should support reform of the international financial institutions

The Secretary-General of the UN called for ambitious reform of the international financial architecture to ensure it is structured to support the Sustainable Development Goals and human rights through more inclusive, representative and, ultimately, more effective global economic governance. The Summit for a “New Global Financing Pact” (June 23, Paris) proposed a roadmap for such a more inclusive international financial system. To complement this, France should support the African leadership emerging from the Africa Climate Summit 2023.



GERMANY



Germany must phase-out all coal by 2030

Germany should realise its plans laid out in the coalition agreement to push up the domestic coal phase-out date from 2038 to 2030, not only in the Rhenish area, but also in Lusatia. German subsidies for coal (approximately EUR 1 billion in direct budgetary transfer and EUR 2 billion in tax expenditures in 2021) must be redirected towards renewable energy.



Germany must improve the implementation of grid expansion projects

In Germany there are promising trends in the deployment of wind and solar power. However, the insufficient grid infrastructure is a major bottleneck to accelerating renewables. Approval procedures for large-scale grid expansion projects have to improve, with fast-track assessments and special permits.



Germany must stop importing coal

In 2023, Germany is still spending billions on imported hard coal, especially from the USA, Australia and Colombia. This undermines Germany’s credibility to lead the way in the energy transition and sends the wrong signals to international partners. Instead, Germany should expand its climate and development partnerships and increase its international climate finance contributions.

“We commit to accelerating clean, sustainable, just, affordable and inclusive energy transitions following various pathways, as a means of enabling strong, sustainable, balanced and inclusive growth and achieve our climate objectives”

G20 New Delhi Leaders' Declaration, G20 Presidency India, 2023



INDIA



India must meet the growth in energy demand with non-fossil energy

India will see a continued growth in energy demand over the coming decades across sectors. With increasing electrification, the size of the power system is likely to increase by more than 100% between 2020 and 2030. Increasing the share of non-fossil energy in meeting this demand will be crucial for decoupling economic growth from emissions as well as avoiding stranded assets.



India must strategise to find synergies of renewable energy with other sectoral objectives

Aligning multiple sectoral objectives with the promotion of renewable energy will maximise effective utilisation of limited public finance. All the sectoral strategies, such as decarbonisation of hard-to-abate sectors, cooling action plans, increasing the share of agricultural land under irrigation, etc., must also prioritise the integration of renewable energy, channelling sectoral priorities and investments to exploit synergies.



India needs reduced cost of capital for green investments

Even the modest estimate of financing needs of India is more than USD 10 trillion, approximately three times its current GDP. Financing the transition with high cost of capital is not an attractive option as it may increase the debt burden on the economy. Partnerships through different mechanisms (multilateral, bilateral) and with different actors (financial institutions, philanthropy organisations) will help to create low-cost financing instruments (blended finance, risk guarantees) to facilitate adequate financial flows to India.



INDONESIA



Indonesia needs to increase the share of renewables to at least 45% by 2030

Indonesia's electricity plan (RUPTL 2021-2030) is not aligned with the 1.5°C target. Indonesia must increase its renewable energy share to 45% in the power sector by 2030 from the current 23% target by 2025. Along with other renewable energy sources, Indonesia needs to install 100 GW of solar PV in the next 10 years and take advantage of the country's solar energy generation potential and cost effectiveness.



Indonesia must strengthen its carbon pricing policy and mandate financial institutions to divest from coal

Indonesia urgently needs to establish stringent regulations mandating financial institutions to divest from coal and lay out a clear pathway for renewable energy financing. The carbon tax levy is set at USD 2/tCO₂e (suggested rates are USD 30-100 by the IMF and World Bank for developing countries), and the initial phase of carbon tax implementation applies only to coal-fired power plants. These are too weak to force significant carbon emission reductions. Carbon pricing with the suggested rate would not only drop GHG emissions by 16% but also generate revenues of 0.7% of GDP. Furthermore, the government should target all key emitting sectors.



Indonesia must unlock massive climate finance to incentivise investments in renewable energy

IEA estimates that Indonesia needs to mobilise extra USD 8 billion annually to triple its RE investments by 2030. Securing JETP commitment is a good sign of progress. More international cooperation and support to the JETP is essential for adding speed and scale to the energy transition in Indonesia. However, Indonesia must avoid future financial burden through unlocking grants, not loans. The government must prepare a sufficient ecosystem to welcome such funds.



ITALY



Italy should accelerate its ambition to fully decarbonise all sectors

As already agreed within the G7, Italy aims to generate net zero power in 2035 to achieve the 55% emissions reduction target. However, Italy should accelerate its ambition to fully decarbonise all sectors, not only the power sector, as close as possible to 2040. Italy's ambition on a coal phase-out is good, but the country needs higher renewables targets to allow for the decarbonisation of all sectors.



Italy must accelerate power system transition and stop inconsistent investments in fossil fuel infrastructure

Climate-friendly technologies to complement renewables, such as demand response, storages, efficiency, and energy communities are technically mature and economically viable, but still undermined by short-sighted policies that target gas as the only short-term security provider and coal as an unavoidable source in Sardinia. Policies need to catch up with climate emergency and technology, and the draft Italian National Energy and Climate Plan (NECP) needs to be amended accordingly. This means 2025's thermoelectric coal phase-out deadline must be met with no exceptions and such plants should not be allowed to switch to gas.



Italy should engage more with carbon-free businesses

The Italian Government appears to rely a lot on large companies, including the oil giant ENI, instead of engaging with more innovative companies who have succeeded in developing technologies. More openness to third party innovation would help Italy decarbonise (and grow).



JAPAN



Japan should set more ambitious and specific targets for scaling-up renewable energy

The 6th Strategic Energy Plan of 2021 stipulates that renewable energy should account for 36-38% of power supplies in 2030, almost doubling the current level. The Basic Policy for Green Transformation (GX) of 2023 also outlines roadmaps for mobilising public-private investment of JPY 150 trillion (USD 1 trillion) over the next 10 years, including JPY 20 trillion for renewable energy deployment, JPY 11 trillion for a next generation transmission network, and JPY 7 trillion for batteries. However, there is still room for utilising untapped potential for renewable energy, thereby setting more ambitious renewable energy targets for 2030 and 2035.



Japan should revise grid operation rules and reinforce power transmission lines, along with the acceleration of renewable energy project developments

It is essential to speed up the reinforcement of transmission lines as outlined by the Master Plan for Cross-Nation Transmission Networks, formulated in March 2023. Meanwhile, the grid operation rules, which currently favour the existing coal-fired power plants, should be revised to give priority to renewable energy. While solar PV has been rapidly deployed in Japan, mandatory requirements of rooftop solar PV for new residential and commercial buildings should be introduced for further acceleration. To promote onshore wind power projects, the government should expedite environmental assessment processes; promote dialogue processes with local stakeholders; and subsidise grid connection cost; support the establishment of domestic supply chains of equipment; formulate rules for developing wind farms in Japan's Exclusive Economic Zone (EEZ); and, reduce business risk through an effective "centralised" system (i.e. state-led).



Japan should cooperate with G20 members to seize the opportunities of JETPs and Energy Transition Mechanism (ETM)

The Japanese government supports zero emissions thermal power plants in Asian developing countries under the "Asia Energy Transition Initiative" with emphasis on ammonia co-firing technologies and CCS technologies. These technologies are expected to be fully deployed only after 2030, and their reliability is still uncertain. The Japanese government should cooperate even more than it currently already does in JETPs and the Asia Development Bank (ADB)'s ETM. Both JETPs and the ETM aim at accelerating the just transition from a coal-dominant power system toward a renewable energy-based power system.



MEXICO



Mexico must commit to **phase out coal by 2030** and increase renewable energy generation by 38% in line with a 1.5°C emissions pathway

In 2021, power generation heavily relied on fossil fuels (74%), while renewables (solar, wind, and geothermal) accounted for only 13%, with large hydro* contributing 10%. To meet its NDC targets, Mexico must phase out coal (5-10% of power generation) by 2030, as it contributes to 10-22% of power sector emissions. Setting ambitious energy policies prioritising renewables must also include a just energy transition pathway away from coal.



Mexico should design and implement a just energy transition pathway with gender equality, social inclusion, and local participation and away from coal power generation

Mexico's three coal plants (5,378 MW coal power installed capacity) should be decommissioned and replaced by renewables by 2030. A just energy transition pathway must be designed and executed, with public resources allocated. It must ensure the participation of all stakeholders, especially those impacted (e.g., workers, communities). The pathway must also assess and mitigate the current environmental and socio-economic impacts of the coal activities and the transition process.



Mexico should seize the opportunity offered by **cooperative financial mechanisms, like JETPs**

To phase out coal and transition to renewables, Mexico needs a transparent and just governance structure. A JETP can help by providing technical and financial support and collaboration with other G20 members. A JETP can ensure that the needs of the affected sectors and communities are addressed. Mexico can learn from South Africa, Indonesia, and Vietnam's experiences, which have launched JETPs to accelerate their just energy transitions.

* Large hydro is differentiated from other renewables due to its potential negative environmental and social impacts.



SOUTH AFRICA



South Africa should **enhance deployment targets** for new grids and renewables in updated power plan

The major challenge for South Africa is in building the institutions, developing policies and instruments, and deploying technology to meet the most ambitious 1.5°C-compatible NDC lower range for 2030. The updated Integrated Resource Plan should align new generation targets with the ambitious range of the NDC. Achieving the lower NDC rests on enhancement of the grid and deployment of new wind and solar plants – connecting the current installed capacity of variable renewable energy every year, as well as flexible dispatchable capacity.



South Africa should scale up technology deployment and socially ambitious programmes to deliver a just transition

Connecting new renewable capacity to ensure supply security, decarbonise power, and enable end-use electrification is critical for South Africa's development and achieving its NDC. Meeting the ambitious NDC range requires a ten-fold increase in deployment of wires, transformers, and new renewables. This deployment offers opportunities for new green jobs, ownership, and industry, but must be matched with just transition programmes that cover coal plant and mine closure and repurposing, economic diversification, and protect vulnerable groups in the coal region.



South Africa and its international partners should fully realise the JETP finance and mobilise further resources to deliver on the Just Energy Transition Investment Plan (JET IP)

South Africa released its JET IP under the JETP in 2022. The JETP, a first-of-its-kind USD 8.5 billion partnership, is a critical step in implementing South Africa's just transition and NDC ambitions. However, the total investment needed is considerably greater, with USD 98 billion identified for 2023-2027 for just transition, infrastructure (in the power, transport, green hydrogen sectors), municipalities, and skills. It is critical to scale up grant finance and concessional loans for the investment programmes.



SOUTH KOREA



South Korea should enhance its renewable energy target to 40% of total electricity generation by 2030, and announce a 2030 coal phase-out date

South Korea has one of the lowest renewable energy generation ratios among OECD countries, with solar and wind power constituting only 5% of total power generation. One reason renewable deployment is slow is the domination of the power system by a monolithic state-owned utility, which has direct interests in coal, gas and nuclear generation and is less competitive in solar and wind power. Further reasons are delays in the permitting, planning, and siting of renewable power projects.



South Korea should make its power system regulations climate-friendly and fair to renewables, and improve its siting, planning and permitting regulations for renewable energy

Making power system regulations fair in terms of pricing and grid access opportunities for solar, wind, and flexibility resources (such as battery systems or demand response) will be critical in decarbonising South Korea's power sector. Approximately 0.1% of the offshore wind capacity that has been sought through relevant permits and plans has been obtained. The South Korean Government should expedite renewable development by improving its planning, permitting, and siting policies.



The South Korean Government should show climate leadership by ending public financing of fossil fuel projects

At the 2022 UN Climate Change Conference (COP 26), 39 countries and public finance institutions signed the Glasgow Statement on International Public Support for the Clean Energy Transition. The South Korean Government, which heavily supports its shipbuilding industry's liquefied natural gas carrier construction, should also sign the Glasgow Statement and end public financing of oil and gas upstream projects.



TURKEY



Turkey should set a target date for peaking emissions in 2025

Turkey has a net zero target for 2053, later than the UNSG is calling for with the Acceleration Agenda. In the Updated NDC, Turkey intends to reduce its emissions relative to an increase in a business-as-usual scenario, and peak its emissions at the latest in the year 2038. This means that Turkey will increase its GHG emissions until 2038, probably up to approximately 800 MtCO₂eq and bring its emissions down to 80-100 MtCO₂eq (officially assumed as the country's net zero level) in only 15 years by a minimum 13% annual reduction rate. This does not seem likely. Turkey should update the peak year to 2025 and adopt an absolute emissions reduction target.



Turkey should introduce a coal phase-out strategy

Turkey should introduce a long-term, model-based and economy-wide implementation plan for its net zero in 2053 target. The National Energy Plan contains clean energy targets but does not include any coal phase-out perspective; instead, the fossil fuel (coal and gas) capacity is considered to be expanded. Turkey should make a declaration for no new coal power plants and set a coal phase-out date between 2030 and 2035.



Turkey needs to access more international climate finance

According to independent research (e.g., from Istanbul Policy Center and the World Bank), Turkey needs to mobilise USD 17-43 billion in climate finance annually until 2030 in order to triple its renewable energy investments and decarbonise its economy to help coal phase-out in the 2030s. Since Turkey is an Annex-I country, it needs to mobilise international climate finance outside the climate regime. A structured multilateral climate finance mechanism such as JETP may boost Turkey's renewable energy investments and help adopt a coal phase-out strategy. Also, close cooperation with the EU for a green deal partnership is necessary.



UNITED KINGDOM



The UK must **meet its commitment to decarbonise the power sector by 2035**

The UK committed in 2021 to decarbonising the power sector by 2035, but the Climate Change Committee (CCC) found in 2023 that there is no strategy to meet this commitment. In fact, the UK government has recently approved both a new coal mine and new licences for oil and gas in the North Sea. While these will primarily be used for export, they still are not consistent with the power sector commitment and certainly are not consistent with net zero by 2050.



The UK should follow the detailed strategy proposed by the Climate Change Committee to **decarbonise the power sector**

This means the government should take a lead role in redesigning the overall power system; reforming planning processes and grid-level connections to enable the necessary capacity to be built in time, and to be consistent with climate-resilient targets; and urgently reforming incentives for the necessary investments. At the same time, the government should revoke its approval of the new coal mine in Cumbria and cancel the licensing round for new oil and gas.



The UK government must **reverse the backsliding on its climate (finance) commitments**

It is unacceptable that the UK will likely miss its GBP 11.6 billion by 2026 climate finance commitments. The UK has also given additional allowances to polluting industries so that the UK ETS trades at a 40% discount compared to the EU ETS. The Prime Minister has not only confirmed the new licences for oil and gas, but also intends to 'max out' UK reserves in the North Sea. This damages the UK's credibility as a climate leader, makes UK calls for global emissions reduction hypocritical, and undermines its peer countries in the G20.



USA



The USA must **accelerate the retirement of existing coal-powered plants, which accounted for nearly 20% of USA electricity generation in 2022**

Though its market share is decreasing, coal remains a significant force in the USA. The USA Inflation Reduction Act (IRA) contains USD 4 billion for just transition in coal communities. However, the IRA also increases the value of a tax credit from USD 35 to USD 60 per tonne for carbon capture, which is less cost effective than wind or solar. It is critical to prioritise mitigation over carbon capture to advance the SDGs.



The USA must invest in grid improvements for clean energy to meet its target of **80% renewable energy by 2030**

In 2022, USA electricity from renewables exceeded electricity from coal for the first time, accounting for 21.5% of total production. Meeting the 2030 renewables target will require significant investment in grid improvements. The IRA provides USD 370 billion of funding for energy transition (up from USD 141 billion invested in 2022); but more investment is required. Private investments can bridge the gap and incentivise clean energy investment in rural communities.



The USA must **follow initial financial commitments to JETPs with tangible engagement rooted in a coherent domestic renewable energy industry and policy landscape**

The USA is a key member of a coalition that launched the first JETP for South Africa at COP26, followed with robust commitments in Indonesia and Vietnam (including a recent wind-power agreement for Indonesia). Yet, this commitment has not extended to the most recent JETP in Senegal, where household electricity access stands at 65% against a target for universal access by 2025. A wider African commitment could also set the stage for forthcoming JETPs in Latin America and Small Island Developing States.



Climate Transparency is a global partnership with a shared mission to stimulate a “race to the top” in climate action in G20 members through enhanced transparency.



For Country Profiles for all G20 members, please see the Climate Transparency Report 2022 on www.climate-transparency.org



Published: 20 September 2023

Coordinating authors:

Sebastian Wegner with Julia Horn and Florian Mersmann (Berlin Governance Platform)

Country experts and other contributing authors:

William Wills (Centro Brasil no Clima), Thomas Houlie (Climate Analytics), Jesse Burton (E3G), Michele Governatori (ECCO), Geoffrey Radigois (Enerdata), Jazmin Rocco Predassi, Victoria Rocío Laguzzi and Camila Agustina Mercure (La Fundación Ambiente y Recursos Naturales), Jan Burck (Germanwatch), Andreas Rüdinger and Lola Vallejo (IDDRI), Rafael Fonseca, Mariana Gutierrez and Jorge Villarreal (Iniciativa Climática de Mexico), Delima Ramadhani (Institute for Essential Services Reform), Ipek Gencsu and Archie Gilmour (ODI), Ümit Şahin (Istanbul Policy Center – Sabanci University), Kentaro Tamura (Institute for Global Environmental Strategies), Karl Peet (Renew/Evolve), Joojin Kim (Solutions for Our Climate), Manish Kumar Shrivastava (The Energy and Resources Institute), Jiang Kejun (University of Beijing)

Design: Design for development (www.d4d.co.za)

Editor: Chapel Lane Editing Services: Tanya Goodman

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