HEINRICH BÖLL STIFTUNG
SOUTHEAST ASIA



CLIMATE CHANGE UNDER INDONESIA'S G20 PRESIDENCY 2022

OVERVIEW, CHALLENGES, AND WAYS FORWARD

Abstract

This paper addresses the extent to which the G20 pays serious attention to the climate change issue under the Indonesian presidency. It provides an overview of the priority agenda related to climate change and debatable issues during the negotiation process. This paper then highlights multifaceted challenges to build consensus on the climate actions in the G20 and commendable deliverables of the G20 in 2022. Based on the findings, the recommendations are proposed to strengthen the future negotiation on climate change issues in the G20.

Yulius Purwadi Hermawan
Stanislaus Risadi Apresian
Evi Fitriani
Gracia Paramitha

CLIMATE CHANGE UNDER INDONESIA'S G20 PRESIDENCY 2022

OVERVIEW, CHALLENGES, AND WAYS FORWARD

IMPRINT

Imprint © 2022, Heinrich Böll Stiftung,

This publication is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License

HEINRICH BÖLL STIFTUNG
SOUTHEAST ASIA

The Heinrich Böll Stiftung (hbs), headquartered in Berlin is the German Green Political Foundation, which is affiliated with the "Alliance '90 / The Greens".

hbs conducts and supports civic educational activities worldwide. The Regional Office in Bangkok is part of a worldwide network of international offices and is in charge of the Southeast Asia/ASEAN program.

Responsible: Lea Goelnitz, Fransiskus Tarmedi

Authors: Yulius Purwadi Hermawan, Evi Fitriani, Stanislaus Risadi Apresian, Gracia Paramitha

Editor: Yulius Purwadi Hermawan

Design and Layout: Christopher CBH

The views expressed in this publication are not necessarily those of Heinrich Böll Stiftung.

Place of publication: www.th.boell.org

Release Date: November 2022

Commercial use of all media published by Heinrich Böll Stiftung (hbs) is not permitted without the written consent of the hbs.

Published by Heinrich Böll Stiftung
Southeast Asia Regional Office
32/4 Sukhumvit 53
(Thong Lo 1 Alley)
Khlong Tan Neua, Watthana
Bangkok 10110 Thailand
https://th.boell.org/
@boell_sea

KEY FACTS AND FINDINGS

1. **The G20 has paid attention to climate change since its first Leaders' Summit** in Washington on 15 November 2008. Greater attention has particularly been given since the Paris Agreement was adopted in 2015 where climate change and energy transition were elevated as a priority agenda by G20 presidencies. Several deliverables have been agreed to in the G20.

2. **Under Indonesia's presidency, the issue of climate change is discussed intensively in three working groups,** namely:
   A. Sustainable Finance Working Group (SFWG)
   B. Environment Deputies Meeting and Climate Sustainability Working Group (EDM-CSWG)
   C. Energy Transition Working Group (ETWG).

   Each has focused on specific priorities relevant to their main areas of responsibilities.

3. During the negotiation on climate change-related issues, G20 members were in sharp differing views on the wordings on the geopolitical tension, the target ambition, climate financing, shipping and carbon levies, and the reduction of the methane emission.

4. Despite difficult challenges, particularly regarding the geopolitical tension, under Indonesia's presidency the G20 managed to deliver some important outcomes that can become references for future climate actions, as well as the basis for further negotiations in following G20 presidencies.

KEY RECOMMENDATIONS

1. Under the subsequent presidencies, the G20 shall maintain progress of the negotiation on the target ambition by referring to commitments that were reached in Indonesia and previous G20 presidencies as well as United Nations Climate Conferences, to avoid a setback in negotiating debatable issues such as the target ambition, climate financing and technology transfer.

2. There shall be concrete initiatives for securing access to sustainable climate financing and filling the climate finance gap to support climate actions in developing countries. The next G20 presidencies shall keep the Roadmap on track and encourage more members to voluntarily share their progress in mobilizing climate finance through the online dashboard platform.

3. The G20 shall create solid pathways to energy transition with a workable roadmap and plan of concrete actions. Voluntary exchanges of information on the progress shall be encouraged in the following G20 presidencies.

4. The G20 shall enhance more concrete collaboration in improving the use of clean technology, including through research and development (R&D), international development cooperation, and collaboration between foreign investors and local enterprises.

5. The G20 shall continue its leading role in safeguarding multilateralism with effective and trustable leadership, particularly in the context where G20 members tend to adopt unilateral approaches to secure their pivotal interests.

6. The G20 shall maintain focus on climate commitments to reach compromises, despite geopolitical tensions that can sharply divide G20 members and corrode solidarity.

Table of Contents

5 Introduction

6 Reflecting on the G20 commitments since the adoption of the Paris Agreement

9 Overview: climate change under the Indonesia's G20 presidency

12 Challenges for Bringing up Climate Change-Related Agenda in the G20

17 The G20's Achievements Under Indonesia's Presidency

20 Debatable issues on climate change in the G20

24 Ways Forward

Climate Change under Indonesia's G20 Presidency (2022)
Overview, Challenges, and Ways Forward

01 Introduction

Climate change has drawn serious attention from the G20 leaders since the first G20 Summit was held in Washington on 15 November 2008. Commitment to tackle the threat of climate change has always been on the Leaders' declarations (Kirton et.al., 2022). In 2008, leaders shared their views that climate change constitutes one of many critical challenges besides energy security, food security, rule of law, terrorism, poverty and disease (Declaration of the Summit On Financial Markets And The World Economy, 15 November 2008). The G20 leaders also declared their support for the United Nations Climate Conference organized every year by the United Nations Framework Convention on Climate Change (UNFCCC). At the London Summit (April 2009), G20 leaders supported the upcoming Copenhagen Summit organized by the UNFCCC (December 2009) to strengthening global efforts for tackling climate change (London Summit Leaders' Statement, 2 April 2009). After the Paris Agreement was adopted in 2015, climate change has been put on top of the G20 priority agenda in every G20 presidency. Commitment to the Paris Agreement and its implementation is always highlighted in the G20 leaders' declaration.

High hopes were paid to the G20 Italian presidency when Italy elevated "Planet" as one of the three main pillars of its presidency. The Rome Summit, held a few days prior to the United Nations Climate Conference (Conference of the Parties) COP26 in Glasgow, had a higher significance. Unfortunately, the G20 Rome Summit did not fully satisfy many global leaders who hoped that the Summit would make clear-cut reference to achieving net zero by 2050. G20 leaders declared their commitment to tackle the critical and urgent threat of climate change and reaffirmed their commitment to the full and effective implementation of the UNFCCC and of the Paris Agreement, taking action across mitigation, adaptation and finance during this critical decade. Yet critics suggest that the declaration lacked concrete measures to limit global warming with meaningful and effective actions. The General Secretary of the United Nations expressed his disappointment through his tweet: "While I welcome the G20's recommitment to global solutions, I leave Rome with my hopes unfulfilled – but at least they are not buried. Onwards to COP26 in Glasgow to keep the goal of 1.5 degrees alive and to implement promises on finance and adaptation for people & planet."

This paper addresses the extent to which Indonesia's G20 presidency paid serious attention to the climate change issue. It provides an overview of Indonesia's presidency particularly on climate change, and then highlights both common and unprecedented challenges to build consensus on climate actions in general and in the G20. Recommendations are proposed at the end of the paper.



02

Reflecting on the G20 commitments since the adoption of the Paris Agreement

There is strong reason to argue that the G20 shall take a leading role in addressing the climate change issue. The G20 economies collectively make up 75–80% of global greenhouse gas (GHG) emissions including energy and land use change and forestry (Climate Transparency Report, 2021; OECD, 2021). Nine out of ten top GHG emission emitters are G20 members, including China, the United States, the European Union (27), India, Russia, Japan, Brazil, Indonesia, and Canada (Friedrich and Ge, 2020). Energy-related CO2 emissions contribute around 80% of total G20 GHC emissions (OECD, 2021). Climate Transparency Report (2021) suggests "that the G20 represents 99% of historical CO2 emissions (excluding land use) from 1850–2013."

The G20 thus shares great responsibility to mitigate climate change and support non-G20 members to make adaptations to the impacts of climate change. The G20 forum can perform as an appropriate arena to negotiate the climate finance agenda as almost half of its members are categorized as developed countries and listed in Annex II of the UNFCCC, including Australia, Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

To show its responsibility, the G20's priority agenda is aligned with the UN Climate Conference's agenda. For instance, when COP21 was preparing for the Paris Agreement in 2015, Turkey's presidency of the G20 focused on the promotion of collaboration, dialogue and harmony among climate funds, the developing countries' needs of climate financing, and the promotion of wider use of renewable energy. Leaders expressed their commitment to work together for a successful outcome of COP21 and agreed on several deliverables including the Toolkit to Enhance Access to Adaptation Finance for Developing Countries that are Vulnerable to the Adverse Effects of Climate Change Including LIDCs, Small Island Developing States and African States; the Climate Funds Inventory; Report on the G20 Energy Efficiency Action Plan: Voluntary Cooperation on Energy Efficiency (2015 Outcomes of Work Streams); and the G20 Energy Efficiency Action Plan: Update on Recent Progress in Reform of Inefficient Fossil Fuel Subsidies that Encourage Wasteful Consumption.

Since the adoption of the Paris Agreement in December 2015, the G20 presidencies have taken climate change as one of the priorities to be addressed in the G20 process throughout the years. G20 leaders declared their commitments to collaborate in tackling climate change and reaffirmed the commitments in the following G20 Summits. The G20 Summits also agreed to endorse some deliverables such as an action plan, work program, roadmap, toolkit, inventory and report.

Table 1 summarises the G20's climate change-related priorities and outcomes that demonstrate the G20 leaders' shared commitment to mitigate, and adapt to, the impacts of climate change. From 2015–2021, attention was paid to climate funding and financing, renewable energy and energy supply, energy transition, climate resilient infrastructure, technological innovation, and a circular carbon economy.

G20 Priorities on climate change and outcomes (2015-2021)

G20 PRESIDENCY	PRIORITIES RELATED TO CLIMATE CHANGE	OUTCOMES
China (2016)	1. Mobilizing climate finance (Finance Track/FT) 2. Developing green finance (FT) 3. Promoting accessible, affordable, and sustainable energy supply (Sherpa Track/ST)	1. Enhancing Energy Access in Asia and the Pacific: Key Challenges and G20 Voluntary Collaboration Action Plan 2. G20 Voluntary Action Plan on Renewable Energy and G20 Energy Efficiency Leading Programme 3. G20 Green Finance Synthesis Report 4. Climate Finance Study Group Report: Promoting Efficient and Transparent Provision and Mobilisation of Climate Finance to Enhance Ambition of Mitigation and Adaptation Actions 5. Climate Finance Study Group Outlook: Mainstreaming Climate Change Considerations into Development Assistance and Climate Finance Programs
Germany (2017)	Protecting the climate and advancing sustainable energy supply: to foster appropriate political frameworks, financing instruments, and economic incentives for investments in climate-resilient infrastructure and to boost technological innovations.	1. Leaders' commitment to mitigate greenhouse gas (GHG) emissions through, among others, increased innovation on sustainable and clean energies and energy efficiency, and work towards low GHG emission energy systems 2. Leaders' commitment to the Paris Agreement, moving swiftly towards its full implementation in accordance with the principle of common but differentiated responsibilities and respective capabilities, in light of different national circumstances G20 Hamburg Climate and Energy 3. Action Plan for Growth G20 Green Finance Synthesis 4. Report (Green Finance Study Group)
Argentina (2018)	1. Taking responsibility on climate action by promoting adaptation to climate change and extreme weather events with a focus on infrastructure, education, capacity building and job creation, as well as developing long-term low-GHG emission pathways	1. G20 Sustainable Finance Synthesis Report 2018 2. G20 Country Experiences on Climate and Energy

G20 PRESIDENCY	PRIORITIES RELATED TO CLIMATE CHANGE	OUTCOMES
	2. Transitioning towards cleaner, more flexible and transparent energy systems by an action-oriented approach to the most important issues on the global energy agenda	3. G20 Climate Sustainability Working Group Adaptation Work Program (2018–2019)
Japan (2019)	1. To accelerate "a virtuous cycle of environment and growth" and aim to create a paradigm shift which promotes business-led innovation by focusing a discussion on issues such as innovation, finance mobilization, and collaborating with non-state actors, together with addressing traditional major topics including mitigation, adaptation and climate finance. 2. To accelerate innovation such as hydrogen and carbon capture, utilization and storage (CCUS) as a major impetus for a virtuous cycle of environmental and growth, mobilizing private finance for innovation, and improving business environment for dissemination of innovative technologies	1. G20 Karuizawa Innovation Action Plan on Energy Transitions and Global Environment for Sustainable Growth
Saudi Arabia (2020)	Ensuring a sustainable future: environment, energy, climate	1. Leaders' commitment to safeguarding the planet and building a more environmentally sustainable and inclusive future for all people 2. Presidency Report: Adaptation in the Context of the Circular Carbon Economy (CCE) Platform 3. Presidency Report: Managing Emissions in the Context of the Circular Carbon Economy (CCE) Platform
Italy (2021)	Environment climate and energy.	1. Leaders' commitment to tackle the critical and urgent threat of climate change and to work collectively to achieve a successful UNFCCC COP26 in Glasgow 2. G20 Sustainable Finance Roadmap 3. 2021 Synthesis Report prepared by the G20 Sustainable Finance Working Group



03

Overview: Climate Change Under Indonesia's G20 Presidency

The Indonesia presidency of the G20 shares the same interest on the importance of climate change with previous G20 presidencies. In his speech delivered at the G20 Rome Summit, President Joko Widodo demonstrated his commitment to continue the legacy of the previous presidency. He further suggested that the G20 shall play its role as a catalyst for green recovery by setting an example and leading the world "in cooperation on handling climate change and managing the environment in a sustainable manner by performing concrete actions" (Cabinet Secretariat of Indonesia, 2021).

Under Indonesia's presidency, the issue of climate change is discussed intensively in three working groups, namely the: 1) Sustainable Finance Working Group (SFWG), 2) Environment Deputies Meeting and Climate Sustainability Working Group (EDM-CSWG), and 3) Energy Transition Working Group (ETWG). Other working groups such as the Trade, Investment and Industry Working Group (TIIWG) also share concerns on climate change by noting it as a cross-cutting issue and highlighting this whenever relevant with their main priority.

A. Sustainable Finance Working Group (SFWG)

The Sustainable Finance Working Group (SFWG) has a mandate to scale up sustainable finance that supports the goals of the 2030 Agenda and the Paris Agreement. Throughout 2022, the SFWG was committed to follow up the G20 Sustainable Finance Roadmap ('the Roadmap') that was endorsed by Finance Ministers and Central Bank Governors (FMCBG) in 2021. The Roadmap was aimed to help the G20, international organizations and other stakeholders in selecting and focusing key priorities of the sustainable finance agenda.

The SFWG focused on three main agendas: (1) Developing a framework for transition finance and improving the credibility of financial institution commitments; (2) Scaling up sustainable finance instruments, with a focus on accessibility and affordability; and (3) Discussing policy levers that incentivize financing and investment that support the transition. The target of deliverables was the 2022 G20 Sustainable Finance Report which included a summary of progress on the actions of the Roadmap agreed at the Rome Summit and recommendations for securing actions to sustainable finance (G20 Indonesia Sustainable Finance Working Group, 2022).

Under Indonesia's presidency, the SFWG address five priority areas, namely: (1) Market development and approaches to align investment to the United Nations Sustainable Development Goals (SDGs), (2) Consistent, comparable, and decision-useful information on sustainability risks, opportunities and impacts, (3) Assessment and management of climate and sustainability risks, (4) The role of international financial institutions (IFIs), public finance and incentives, and (5) Cross-cutting issues to support just, orderly and affordable transition by delivering concrete outcomes to achieve the SDGs and the Paris Agreement.

B. Environment Deputies Meeting and Climate Sustainability Working Group (EDM-CSWG)

The EDM-CSWG was committed to strengthen the agenda of mitigation and adaptation of climate change. The working group discussed three main priorities: (1) Supporting more sustainable recovery, (2) Enhancing land- and sea-based actions to support environment and climate objectives, and (3) Enhancing resource mobilization to support environment protection and climate objectives. The Environment Deputies Meeting particularly focused on three main issues: land degradation, sustainable consumption and resources efficiency, and sustainable finance and marine protection.

C. Energy Transition Working Group (ETWG)

Indonesia's G20 presidency hoped that G20 members could agree on the global deal to accelerate energy transition which was required to tackle climate change. The ETWG focused on access to energy, technology and financing. On access to energy, the ETWG discussed affordable, sustainable, reliable and modern energy, particularly to support electrification and clean cooking. On technology, the focus of ETWG was the development of technology that could generate energy efficiently. The discussion also covered energy storage, low carbon energy system, clean industry development, the integration of renewable energy and energy efficiency. On financing, the ETWG addressed new investment and funding to support new energy projects.





WORKING GROUPS	PRIORITY AGENDA
Sustainable Finance Working Group (SFWG)	• Developing a framework for transition finance and improving the credibility of financial institution commitments • Scaling up sustainable finance instruments, with a focus on accessibility and affordability • Discussing policy levers that incentivize financing and investment that supports the transition
Environment Deputies Meeting and Climate Sustainability Working Group (EDM-CSWG)	• Supporting more sustainable recovery • Enhancing land- and sea-based actions to support environment protection and climate objectives • Enhancing resource mobilization to support environment protection and climate objectives

Energy Transition Working Group (ETWG)	• To strengthen global sustainable energy systems and just transitions by:
	  • expanding energy access focusing on clean cooking, electrification, and small island countries
	  • escalating viable clean technologies implementation intensifying energy transition financing

04

Challenges for Bringing Up Climate Change-Related Agenda in the G20

There are three issues that have become common debates among countries, including G20 members. The three common challenges are the climate target ambition, technology gaps, and climate financing and green investment. Under Indonesia's presidency, the G20 also faced the war between Russia and Ukraine that has not only affected negotiation to reach consensus, but also hindered cooperation for strengthening efforts to address climate change.

1 Raising the climate target ambition

Raising the climate target ambition of G20 members could be a game-changer in climate change mitigation. The climate target will be references for each country to set up its national plan of climate actions and roadmap which consists of necessary steps to be taken to achieve the target within a particular time frame.

The Paris regime has implemented a naming and shaming mechanism to push the Parties to increase their global ambition (Falkner, 2016). However, the framework does not work well to push the Parties to raise their emissions reduction target during COP26.
At COP26 in Glasgow, UNFCCC members reached agreement on the Glasgow Climate Pact, but fell short of providing ambitious action to limit temperature rise. The last-minute change of wording from "phasing out" to "phasing down" of the coal-fired power is an example of difficulties that global leaders face to reach a consensus on the highest target ambition for making concrete actions to limit the rise of global temperatures.

At home, it is not easy for individual countries to renew and strengthen their commitment in their nationally determined contributions (NDCs) as agreed at COP26. Two G20 members have not enhanced their commitment to increase their mitigation target for emissions reduction in their revised NDCs, while one member has not submitted its updated NDCs to the UNFCCC after COP26. Meanwhile, ten members do not make any enhancements of the adaptation target ambition in their updated NDCs.

G20 members uphold different net zero targets that shall be achieved by 2050 (Nascimento, et.al, 2022a; Nascimento, et.al. 2022b). Thirteen G20 members show their commitment to achieve the net-zero target by 2050, one member by 2053, four members by 2060, and one member by 2070. One country (Mexico) has not submitted their commitment to achieve a net-zero target (OECD, 2021). In addition, only a few G20 members have provided a comprehensive plan or roadmap to achieve the net-zero target (Climate Action Tracker, 2022). The G20 can play a role in supporting its members in having a comprehensive plan and roadmap to achieve the net-zero target by 2050 (Climate Action Tracker, 2022).
To limit the rise of the global temperature not to exceeding 2°C the G20 countries should halve their emissions by 2030. However, the commitment made by most G20 members in their updated first NDC do not include an ambition target to limit the rise of the temperature. Only the European Union and UK have presented their commitment to achieve the target by 2030 (Climate Watch, 2021).

G20 Net-zero target ambitions and comprehensiveness

G20 MEMBERS	2020	2030	2040	2050	2060	2070	COMPREHENSIVENSS RATED AS
Argentina							INCOMPLETE
Australia							POOR
Brazil							INCOMPLETE
Canada							AVERAGE
China							POOR
France							ACCEPTABLE
Germany							ACCEPTABLE
India							INCOMPLETE
Indonesia							INCOMPLETE
Italy							ACCEPTABLE
Japan							POOR
Republic of Korea							AVERAGE
Mexico							N/A
Russia							POOR
Saudi Arabia							INCOMPLETE
South Africa							INCOMPLETE
Turkiye							POOR
United Kingdom							ACCEPTABLE
United States							AVERAGE
European Union							ACCEPTABLE

Source: Climate Action Tracker, 2022





2 Overcoming the technology gaps

G20 members uphold different net zero targets that shall be achieved by 2050 (Nascimento, et.al, 2022a; Nascimento, et.al. 2022b). Thirteen G20 members show their commitment to achieve the net-zero target by 2050, one member by 2053, four members by 2060, and one member by 2070. One country (Mexico) has not submitted their commitment to achieve a net-zero target (OECD, 2021). In addition, only a few G20 members have provided a comprehensive plan or roadmap to achieve the net-zero target (Climate Action Tracker, 2022). The G20 can play a role in supporting its members in having a comprehensive plan and roadmap to achieve the net-zero target by 2050 (Climate Action Tracker, 2022).

To limit the rise of the global temperature not to exceeding 2°C the G20 countries should halve their emissions by 2030. However, the commitment made by most G20 members in their updated first NDC do not include an ambition target to limit the rise of the temperature. Only the European Union and UK have presented their commitment to achieve the target by 2030 (Climate Watch, 2021).

Many developing countries are still struggling to get affordable low-cost renewable energy for building electricity that meets the needs of their whole population. Some technology to generate renewable and clean energy like solar panels, wind turbines, and carbon capture storage need mega-investment in the beginning before the developing countries can optimize the use of clean and renewable energy. The use of technology requires skilled human resources. Where the total cost of using coal and other fossil fuels is still cheaper than producing electricity from renewable energy sources, it would be challenging for developing countries to shift from fossil fuel energy to renewable and clean energy.

Technology development and transfer are not enough to ensure sustainable energy transition occurring in the Global South. Technology absorption is the most crucial step to fulfilling technology diffusion. The main idea of this technology absorption is that developing and the least developed countries can understand, utilize, replicate, and adapt climate technology according to their local conditions (Olawuyi, 2018).

3 Securing Sustainable Finance

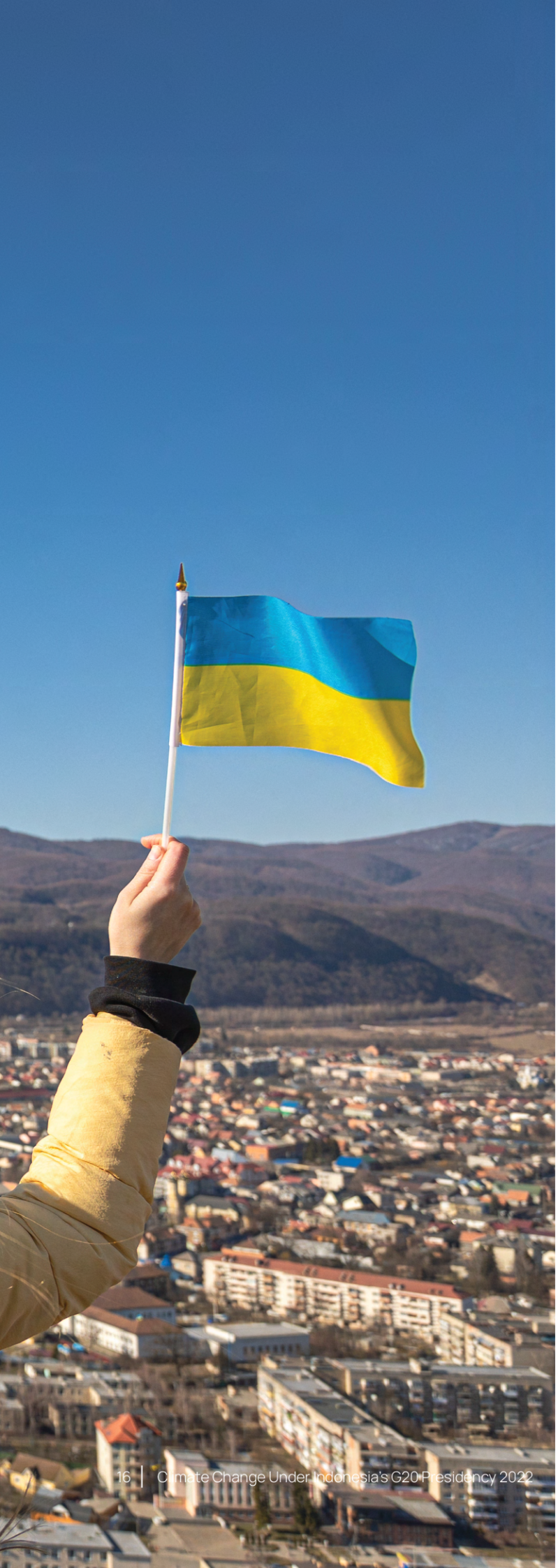
Climate finance is absolutely crucial for supporting mitigation and adaptation actions. The sources of climate financial flows include the public, private and alternative sources that can be used to finance actions to address climate change.

During the Copenhagen Summit in 2009, the Annex I Parties of the UNFCCC agreed on an ambitious pledge to channel USD 100 billion in climate finance by 2020. The commitment that was made by industrialized countries was considered a significant pledge that could help vulnerable communities in developing countries to access climate finance for mitigation and adaptation actions. This number is still below the number that developing countries need to address climate change impacts. The estimation suggests that the world needs USD 4.5–5 trillion by 2030 for climate mitigation and adaptation actions (Buchner et al., 2021).

The Paris Agreement highlights that the financial flows shall be consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. Transparency and predictability of financial support are highly emphasised by the Paris Agreement.
Many reports and analysis yet suggest that the contribution of developed countries is still below their pledges declared at COP21 (Bos, Gonzalez, and Thwaites, 2021; Timperley, 2021). Twenty-three rich nations should contribute at least 0.22% of their gross national income (GNI) to meet the USD 100 billion target (Bos, Gonzalez, and Thwaites, 2021).

A report submitted to the UN in 2020 shows that the USD 100 billion target was unattainable (Timperley, 2021). The negotiation process in COP26 about the USD 100 billion target did not bring a clear consensus on the date to be accomplished (Mitchell, 2021). Nine G20 members made new commitments during COP26 (UK Government, 2021). However, those commitments do not give enough reassurance that the developed countries will attain the USD 100-billion pledge (Mitchell, 2021). Based on the latest climate finance commitments published by the UK Government, only nine countries will channel around USD 181.8 billion over 2021–2025 (UK Government, 2021). This amount means that those nine G20 members will contribute USD 36.4 billion annually. According to the World Resource Institute report, the United States itself should contribute 40–47% of the USD 100-billion pledge (Bos and Thwaites, 2021).

Besides mitigation and adaptation finance, developing countries also demand for loss and damage compensation to be included in the climate negotiations. This initiative is important to avoid greater threat to economic growth and well-being. There was yet a disagreement between developed and developing countries on the issue of the loss and damage compensation during the UN climate negotiations (McGrath and Bernauer, 2022). The absence of action to reduce emissions can lead to further damage between 2050 and 2100. The upper estimation of the GDP costs without climate action ranges between 10–12% annually on a global scale by 2100.
In the context of the COVID-19 pandemic, many countries have reduced budget allocation for financing climate mitigation and adaptation actions. There is an urgent call for a green recovery to anticipate the rapid rise of GHG emissions as economic activities begin to recover.



4 Managing Geopolitical Crisis And Its Impact On The G20 Energy Transition

The war in Ukraine that broke out in February 2022 shows that competition among major powers continues despite the prolonged pandemic, the economic recession and worsening climate change. The geopolitical crisis has taken the central stage of international relations in 2022 and significantly affected Indonesia's G20 presidency. The G20 has never been so polarized as today and previous G20 presidencies did not have to face such complex and difficult circumstances to push for agreements and cooperation among the most powerful economies. In addition, the war has squandered opportunities for cooperation in the G20 and hampered consensus building needed to tackle the multiple crises. Moreover, the major powers among G20 members seem to prefer unilateral approaches rather than to strengthen multilateralism.

Because of Russia's and Ukraine's central positions in the global supply chains of energy and food, the war between the two countries has resulted in energy and food crisis that eventually threatens the mitigation of climate impacts. The World Bank (2022) warns that the current increase in energy price is the worst since the 1970s and "transition to cleaner energy could be delayed."

The geopolitical crisis has undermined already-difficult global efforts to phase out fossil fuel. As there was no sign of the end of the war, the energy crisis makes the prospects of energy transition in developed and developing countries even more difficult. The current soaring price of energy in the global market has put tremendous pressure on European governments to anticipate the worst impacts of the winter of 2022–23 and overcome energy shortages. Global gas prices are increasing, due primarily to the resurgence of demand for fossil fuels following the COVID-19 pandemic and the measures to contain the spread of the virus, depleted storage and the impacts of Russia's decision to constrain gas supplies to Europe that has highly depended on Russian natural gas (Harvey, 2022).



05 The G20's Achievements Under Indonesia's Presidency

Despite difficult challenges, particularly regarding the geopolitical tensions that created serious obstacles in building consensus among G20 members, the G20 has managed to deliver some important outcomes that can become references for the negotiations on climate issues in the G20 under following presidencies.

Deliverables in the priority agenda for sustainable finance

Two important deliverables relevant to sustainable finance is the establishment of an online dashboard and repository of relevant works to implement the Roadmap and the G20 Sustainable Finance Report. The online dashboard and repository of relevant work provides illustration of the ongoing and future progress made by G20 members and other relevant organizations in accordance with the Roadmap. The 2022 G20 Sustainable Finance Report highlights practical and voluntary recommendations for jurisdictions and relevant stakeholders in developing transition finance framework, improving the credibility of financial institutions' net zero commitments and scaling up sustainable finance instruments, with a focus on improving accessibility and affordability (2022 Sustainable Finance Report). The G20 also encourages members to scale up sustainability financing by taking concrete efforts to advance the Roadmap's recommendations (G20 Chair's Summary Fourth G20 Finance Ministers and Central Bank Governors Meeting, Washington DC, 12–13 October 2022).

Renewal of commitments were also declared at the Fourth G20 Finance Ministers and Central Bank Governors Meeting. The G20 urged the developed countries to fulfil their commitment to jointly mobilize USD 100 billion in climate finance per year by 2020 and annually through to 2025 to support mitigation actions in developing countries. The G20 members also renewed commitment to support the orderly, just and affordable transitions to achieve the SDGs in line with the UNFCCC, the Paris Agreement and the Convention on Biological Diversity.

Deliverables in the priority agenda for environment and climate sustainability

The G20 Joint Environment and Climate Ministers' meeting agreed to issuing a Chair's Summary which highlights renewals of several commitments on environment and climate sustainability. Thirty-seven paragraphs address the commitment on the environment, while thirty-two paragraphs highlight commitments on climate sustainability (G20 Chair's Summary Joint Environment and Climate Ministers' Meeting, 31 August 2022). Some important commitments are highlighted as follows.

The G20 members renewed the commitment and objectives of the UNFCCC to tackle climate change by strengthening the full and effective implementation of the Paris Agreement in holding the increase in the global average temperature to well below 2°C above preindustrial levels and pursuing efforts to limit the temperature increase to 1.5°C above preindustrial levels. The G20 members would implement the relevant outcomes of previous COPs and CMAs including COP26 and CMA3 (Conference of the Parties serving as the meeting of the Parties to the Paris Agreement). They expressed full support to Egypt's presidency of COP27 and would work constructively to pave the way for a successful, ambitious and balanced set of outcomes to be adopted in Sharm el-Sheikh.

Indonesia's presidency also demonstrated its initiative in commissioning the G20 Studies under the Climate Sustainability Working Group. The focus of the studies includes: the Stocktaking of Economic, Social, and Environmental Impacts of Sustainable Recovery, including Impacts on NDC Implementation; the role of mitigation-adaptation co-benefits for creating a more resilient future for all; Strengthening Actions and Partnership for Sustainable Ocean Initiatives, Accelerating NDC Implementation and Sustainable Transition Towards Low GHG Emissions and Climate Resilience Future through Utilizing Economic Value of Carbon (Annex 2 G20 Chair's Summary Joint Environment and Climate Ministers' Meeting, 31 August 2022).

Deliverables in the priority agenda for energy transition

One important legacy of Indonesia's presidency is the Bali COMPACT (Common Principles in Accelerating Clean Energy Transition) which was prepared by the Energy Transition Working Group (ETWG). The document was endorsed by the Energy Transition Ministers Meeting on 2 September 2022. The document constitutes a G20 framework that sets out nine voluntary principles for energy transitions and highlights that no one be left behind. The objective is to advance the G20 works on the energy sector, that no one be left behind. The objective is to advance the G20 works on the energy sector, building upon the building upon the previous G20 presidencies' outcomes. The G20 members are encouraged to speed up energy transitions in line with the UNFCCC and the Paris Agreement. The transitions include a wide range of options towards low emissions development to achieve net-zero GHG emissions or carbon neutrality.

BALI COMPACT	
NINE PRINCIPLES FOR ENERGY TRANSITION	
1.	Strengthening confidence and clarity in national planning, implementation and review
2.	Enhancing energy security, markets stability and affordability
3.	Securing resilient, sustainable and reliable energy supply, infrastructure, and systems
4.	Boosting energy efficiency measures to realize its potential as a first fuel to drive cost effectiveness across sectors
5.	Diversifying energy systems and mixes as well as lowering emissions from all energy sources
6.	Catalyzing sustainable inclusive investments at scale for moving towards low or net-zero emissions energy systems
7.	Collaborating on mobilizing all sources of finance to help achieve the goals of the 2030 Agenda for Sustainable Development and the Paris Agreement
8.	Scaling up innovative, affordable, smart, low and net-zero emissions technologies
9.	Building and strengthening innovation ecosystems to boost research, development, demonstration, dissemination, and deployment

Indonesia's G20 presidency also put forward Decade of Actions: The Bali Energy Transitions Roadmap as a suggested way to provide continuity in the global agenda to tackle climate change. This roadmap sets out voluntary multi-year actions to get on track to achieve the Sustainable Development Goals (SDGs) and lays pathways towards net-zero emissions or carbon neutrality according to national circumstances. The Roadmap consist of three elements: 1) the Bali Compact; 2) three key priorities of actions over the short term to medium-term through 2030; and 3) a Presidency Troika Action plan with milestones (Decade of Actions: The Bali Energy Transitions Roadmap, 2022).

The Energy Ministers also share their commitment to take part in bringing solutions to achieve market stability and affordability, strengthen energy security, enhance energy sustainability and accelerate energy transitions. They took note of the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, and agree to highlight the nexus between energy and climate.

Other agreements include commitments on the access to energy by striving to close the gaps in energy access as well as to eradicate energy poverty through improving access to affordable, reliable, sustainable, and modern energy. On the area of smart and clean technologies scaling-up, G20 members are committed to promote and invest in clean, safe, sustainable technologies and approaches including through energy efficiency measures and different types of renewables, other zero and low emission technologies. They are also committed to help developing countries enhance the resilience of clean energy technologies and mitigate the related risks including digital security concerns. On the subject of energy financing, G20 members share the importance of boosting clean energy investments and financial flows, particularly for developing countries in accelerating energy transitions and streamlining approvals (G20 Indonesia Energy Transition Working Group, 2022).



06

Debatable Issues On Climate Change In The G20

The language of the geopolitical tension became an unresolvable issue in both the working groups and ministerial meetings which carried strategic mandates to address climate change issues. At the Environment Deputies Meeting and Climate Sustainability Working Group (EDM-CSWG) and the Joint Environment and Climate Minister Meetings, members also had differing views on the wordings of the target ambition, climate financing, shipping and carbon levies, and the reduction of methane emissions (see Chair's Summary Joint Environment and Climate Ministers' Meeting, 31 August 2022; Lo, 2022; Lai, 2022; Lamb and Budiman, 2022; Reuters, 2022).

The impacts of the geopolitical tension on climate change and energy transition

At the Joint Environment and Climate Ministers' Meeting, many members openly condemned the Russian invasion of Ukraine and highlighted its impacts on the energy crisis and food shortage, demonstrated by soaring energy prices and the global economic downturn. They wanted the joint statement to include language that reflected the unjustifiable and unprovoked Russian war of aggression against Ukraine, and highlighted that the war exacerbated existing challenges to climate change and biodiversity loss. Russia opposed the proposed language of the geopolitical tension suggesting its reason to initiate military operation in Ukraine. Russia underscored that the US and European countries' sanctions on Russia was the primary cause of the energy and food crisis. Even though G20 members could not reach a consensus on the wording of the geopolitical tension, they accentuated the adverse impacts of the continuation of the geopolitical situation on food and energy security, climate change, environmental degradation, and the accomplishment of sustainable development goals.

At the Energy Transition Ministers' Meeting, G20 members were concerned with the adverse impacts of the geopolitical tension on the global efforts to accelerate energy transitions and secure energy access. Many members viewed firmly that the G20 should not use energy as tools of political coercion, while others called the G20 members not to adopt unilateral restrictions. The G20 members acknowledge the urgency of the transformation of energy system to be more secure, reliable, and resilient in this difficult context (G20 Indonesia Energy Transition Working Group, 2022).

The geopolitical issue also became a tough issue at the Fourth Finance Ministers and Central Bank Governors Meeting. Many members viewed Russia's illegal, unjustified and unprovoked aggression damaged global economic recovery. One G20 member highlighted the negative impact of the sanctions on the global economy. Most members agreed on the impacts of rising prices of fertilizer, food and energy on existing inflationary pressures. Many members also highlighted the importance of continued action on long-term structural challenges such as climate change. One member reminded the urgency of balanced and just energy transition policies in response to climate change (G20 Chair's Summary, Fourth G20 Finance Ministers and Central Bank Governors Meeting, Washington, 12–13 October 2022).



Addressing the target ambition gaps

It would be hard to expect the G20 members would have strong commitments to revisit and strengthen their 2030 climate targets by the end of 2022, as agreed at COP 26. The G20 members spent hours addressing the formulation of wordings of the limit of global warming and a proposal for putting the clear-cut deadline to submit the renewal of the pledge. In the negotiation process, one member was particularly concerned whether the target of below 1.5°C was scientifically feasible. In response, other members proposed "well below 2°C" as the most agreeable wordings, while others wanted to keep "1.5°C above preindustrial levels". Members eventually referred to the text as formulated in the Paris Agreement that limits global temperature rise to "well below 2°C" and recalled efforts to limit the rise to 1.5°C.

Another subject of debate was a proposal to set the clear-cut deadline for renewing the pledge, which immediately received opposition from several G20 members.

The G20 members acknowledged there was a target ambition gap and its alignment with the Paris Agreement temperature goals. However, they are in differing views on how they shall fill the gap. Some members recalled the request to Parties to revisit and strengthen the 2030 in their NDC targets that were made at COP26 in Glasgow. Yet other members were bound in seeing the urgency to pursue concrete implementation of necessary actions to meet their targets, including by adopting domestic measures as recommended by science-based reports.

The language of the reduction of methane emissions was also the subject of debate among G20 members as some members opposed the commitment to cut collective methane to 30% by 2030. The strong language on deforestation and land degradation received only limited support. No agreement was reached on the proposals to eliminate any unilateral and cross-border measures in the shipping industry. Some members questioned the EU's carbon levy on imported goods from countries with lower environmental standards.



The divide between the North and the South

The divide between the North and the South apparently dominated the negotiations on climate change issues. Members shared their views on the urgency of limiting the temperature increase to 1.5°C to maintain the resilience of climate development, considering the impacts of climate change at 1.5°C is much lower than at 2°C. However, some members underlined that developed countries shall play a leading role in cutting their GHG emissions significantly. Some emerging markets demands that developed countries show concrete actions in achieving their target ambitions (see paragraph 2, Chair's Summary, Joint Environment and Climate Ministers' Meeting, 31 August 2022).

The divide was also apparent when members addressed the question on support for developing countries. Some members upheld different standpoints on the level of support for developing countries to prepare, implement and monitor their National Adaptation Plans in a sustainable way.



The concrete actions to enhance the transfer of technology

The development of clean technology and transfer of innovation to build capacity in mitigation and adaptation are crucial for meeting collective climate ambition targets. Members shared their views towards the importance of enhanced international cooperation in research and development and deployment and technology transfer to developing countries to support low emissions technology development to reduce GHG emissions. Yet not all members are committed to take further actions to reduce non-carbon dioxide GHG emissions including methane by 2030.



The developed countries' pledges to provide climate finance

Some members appreciated the progress in mobilizing climate financial supports, but others expressed their criticism towards the failure of the developed countries to meet their pledges to jointly deliver USD 100 billion in climate finance to developing countries by 2020. Some members called for increase of the pledges to meet the gap in climate financing and highlighted the importance of transparency in the implementation of the pledges.

There were also differing views on the wording of loss and damage, to refer to damages caused by climate impacts that cannot be recovered or adapted to. Developed countries were in a different position with the emerging markets that called for financing loss and damage to be paid by nations most responsible for causing climate change (Lo, 2022).



07 Ways Forward

The negotiation on climate change issues under Indonesia's presidency of the G20 has provided many notable lessons that can become a reference for negotiations in following presidencies. When Indonesia first took the G20 presidency in early December 2021, the country had confidence to contribute to strengthening global climate governance. Indonesia's presidency elevated many crucial issues to be negotiated by G20 members with a great hope that members would strengthen their commitment to deliver concrete climate actions. However throughout 2022, negotiations on key commitments related to climate actions faced many differing views among the G20 members. Since geopolitical tensions over the Russian-Ukraine war occurred, negotiation between G20 members became tougher in all the working groups meetings and the ministerial meetings at both Sherpa and Finance Tracks. The failure to reach compromise on the language of the geopolitical tensions resulted in meetings without joint statements or communiques, even though there was consensus on many crucial issues.



Maintaining progress of the negotiation on the target ambition

A

Negotiations on the target ambition in the following G20 presidencies shall refer to the agreement that has been achieved in the Environment Deputy Meeting and Climate Sustainability Working Group and the Joint Environment and Climate Ministerial Meetings. In Bali, the G20 members have recognized that the impacts of a temperature increase at 1.5°C are much lower than 2°C. This wording on the target ambition shows the G20's shared concern with the findings of the IPCC special report on global warming of 1.5°C and the Sixth Assessment Report of the IPCC (AR6) as well as other scientific research on climate change. In Bali, G20 members also recognized that "climate resilient development may not even be possible in some regions if global warming exceeds 2°C" and thus agreed to the urgency to limit the temperature increase to 1.5°C (G20 Chair's Summary, Joint Environment and Climate Ministers' Meeting, 31 August 2022).

The negotiation in the following presidencies shall focus on the scientific solutions and mitigation scenarios to make the target achievable within the agreed timeframe. The G20 shall remind its members that the emissions must reach its peak level by 2025 after which concrete actions must be taken to halve emissions by 2030. The subsequent G20 presidencies shall lead the G20 to address both the concern on the emissions peak and the plan of concrete actions to reduce emissions by 2030 and beyond. The next presidency can encourage the voluntary exchange of information on the G20 members' roadmap, progress of implementation and best policy practices in reducing emissions, as well as the challenges they face to meet the target ambition. This initiative will encourage open and transparent discussion and trust among the G20 members and hopefully it will create peer group pressure that can make any deviance from ambitious emissions reduction targets more difficult.



Securing access to sustainable climate financing

B

G20 members recognize that climate finance strengthens each G20 member's capacity in ensuring the accomplishment of the emissions target, along with other ambitions. The establishment of the G20 Sustainable Finance Roadmap along with a timeline and the detailed list of actions up to 2025 has demonstrated an important progress under Indonesia's G20 presidency. The G20 shall encourage more members to share their progress on the online dashboard. In addition, the discussion shall also focus on the new innovative funding mechanism, including the blended finance initiatives. The role of the multilateral development banks and other financial climate-related institutions in mobilizing climate finance can be strengthened. The G20 can encourage the exchange of best practices in the establishment of an institutionalized national climate fund agency to enhance accessible, transparent, and accountable financial mechanisms that can strengthen national capacity to meet their climate target ambition within the timeframe.

The following G20 presidencies will not be able to avoid one long-lasting debate on the issue of the developed countries' pledges to provide USD 100 billion to support developing countries in financing their mitigation and adaptation actions. Considering the important role of the developed countries in taking a leading role in climate mitigation and adaptation, there shall be concrete initiatives demonstrated by developed countries for meeting their pledges. Similarly, the emerging economies must also demonstrate their commitment to strengthen their target ambition and take concrete actions including by mobilizing its domestic financial resources optimally.

Creating solid pathways to energy transition with workable roadmap and plan of concrete actions

C

Energy transition has been intensively discussed in the previous G20 presidencies. China's presidency in 2016 highlighted the importance of a voluntary action plan and energy efficiency leading program for accelerating the promotion of renewable energy. In Germany, leaders have shared a commitment to increase innovation on sustainable and clean energy and energy efficiency as strategies to mitigate GHG emission. The G20 Hamburg climate and energy action plan was endorsed in 2017. With Argentina in the presidency for 2018, G20 members focused their discussion on an action-oriented approach to promote the transition towards a cleaner, more flexible and transparent energy system. Indonesia's presidency in 2022 focused on energy transition as one of three pillars on the agenda and initiated an improved outcome through the

Energy Transition Roadmap which needs to be practically detailed in a thorough timeline, with further steps of each G20 member on phasing down coal. G20 members also endorsed the Bali COMPACT which consists of nine principles in promoting energy transition. India's upcoming presidency of the G20 may follow on the achievements of Indonesia's presidency and previous presidencies by inviting G20 members to exchange information about their concrete steps and policy practices in promoting energy transition in their countries.

Enhancing collaboration in improving the use of clean technology

D

The use of clean and innovative technology is key to meeting the target ambition. It is unfortunate that many developing countries have struggled in improving their technologies to be compatible with the required standards. Considering the importance of clean or green technology, the G20 presidency may encourage more discussions on the best practices of the collaboration in Research and Development between developed and developing countries. This collaboration includes technical cooperation between the developed countries' international agencies and beneficiary partners from the developing countries. Simultaneously, the G20 may also encourage the collaboration to enhance their focus on energy transition and climate mitigation and adaptation. The engagement of the private sectors in the collaboration shall also be strengthened through private-to-private partnerships. Cooperation between foreign investors and local enterprises may also be an effective strategy to introduce clean technology in the developing countries' local contexts. Another feasible initiative that can be further explored by the following presidency is the creation and optimization of the hubs of centres of clean modern technology that encompass national centres of technology in both developed and developing countries.

Safeguarding multilateralism with effective and trustworthy leadership

E

In times of hard crisis, there is a tendency that G20 members will advance their national interests first and thus will be likely to adopt a unilateral approach to secure their interests. The way they respond to the crisis can endanger global efforts to tackle climate change. The G20 members must keep their commitment to carry out the G20's mandate as the premier forum for global economic cooperation which brings developed countries and emerging markets on the same negotiation table for coordinating their efforts to advance global mitigation and adaptation actions. The G20 must remain at the forefront in advocating multilateralism. Diverse interests shall be respected by all members, but the common approach to manage common affairs shall be promoted above the national interests of individual countries. If the 20 members fail to compromise, it is hard to expect that 193 members of the UNFCCC will come out with consensus.

Maintaining focus on climate commitments despite geopolitical tension

F

The geopolitical tension has sharply divided the G20 members along two sides: one where members see the primary causes of the tension, and the other where members are seeking solutions to resolve the tension. Geopolitical tensions are likely to continue in the following years. Other forms of geopolitical tension may occur in the future, considering the potential resources of the tension between G20 members. Polarization within the G20 may deepen due to the increasing rivalries between members that want to exercise their influence to maintain their control over global politics and the economy for the sake of their national interests. In this context the subsequent presidencies shall be able to lead the G20 to remain focused on global urgent concerns such as climate change and energy transition. The tension shall not distract the collective efforts to tackle climate change. The improvement of green technology as well as the development of human resources who share concern with climate change mitigation and adaptation shall receive greater attention in the following years.

References

Declaration of the Summit on Financial Markets and the World Economy, 15 November 2008. 2008 G20 Washington Declaration (utoronto.ca)

London Summit Leaders' Statement, 2 April 2009, https://www.oecd.org/g20/summits/london/G20-Action-Plan-Recovery-Reform.pdf

G20 Indonesia Sustainable Finance Working Group. (2022). G20 Notes on Agenda Priorities Sustainable Finance Working Group 2022. Retrieved from https://g20sfwg.org/wp-content/uploads/2022/02/SFWG-Note-on-Agenda-Priorities-final-17jan.pdf

G20 Chair's Summary, Fourth G20 Finance Ministers and Central Bank Governors Meeting (2022). https://www.g20.org/wp-content/uploads/2022/10/G20-Chairs-Summary-4th-FMCBG-12-13-Oct-2022.pdf

G20 Indonesia Energy Transition Working Group. (2022). G20 Chair's Summary Energy Transitions Ministers Meeting 2022. Retrieved from: https://www.g20.org/etwg-documents/

G20 Indonesia Environment Deputy Meeting and Climate Sustainability Working Group (2022). The G20 Chair's Summary Joint Environment and Climate Ministers' Meeting 2022. https://g20.org/wp-content/uploads/2022/09/G20_JECMM_Chairs-Summary-2022.pdf

Bos, J., Gonzalez, L., and Thwaites, J. (2021). "Are Countries Providing Enough to the $100 billion Climate Finance Goal?" World Resource Institute, https://www.wri.org/insights/developed-countries-contributions-climate-finance-goal.

Bos,J and Thwaites, J. (2021). "A Breakdown of Developed Countries' Public Climate Finance Contributions towards the $100 Billion Goal." World Research Institute. https://www.researchgate.net/publication/355122563_A_Breakdown_of_Developed_Countries'_Public_Climate_Finance_Contributions_Towards_the_100_Billion_Goal

Buchner, B., Buchner, B., Baysa Naran, B., Fernandes, P., Rajashree Padmanabhi, R., Paul Rosane, P., Matthew Solomon, M., Sean Stout, S., Costanza Strinati, C., Tolentino, R., Wakaba, G., Zhu, Y., Meattle, C., Guzmán, S. (2021). Global Landscape of Climate Finance 2021. San Francisco, CA: Climate Policy Initiative. https://www.climatepolicyinitiative.org/wpcontent/uploads/2021/10/Full-report-Global-Landscape-of-Climate-Finance-2021.pdf

Cabinet Secretariat of the Republic of Indonesia. (2022). "President Jokowi: Indonesia Wants G20 to Set Example in Handling Climate Change. https://setkab.go.id/en/president-jokowi-indonesia-wants-g20-to-set-example-in-handling-climate-change/

Climate Action Tracker. (2022). "Countries." https://climateactiontracker.org/countries/

Climate Watch. (2022). "NDC Enhancement Tracker." https://www.climatewatchdata.org/2020-ndc-tracker

Climate Transparency Report. (2021). Comparing G20 Climate Action towards Net Zero. https://www.climate-transparency.org/wp-content/uploads/2021/10/CT2021-Highlights-Report.pdf

Falkner, R. (2016). "The Paris Agreement and the New Logic of International Climate Politics." International Affairs, 92(5): 1107-1125. https://onlinelibrary.wiley.com/doi/epdf/10.1111/1468-2346.12708?saml_referrer

Friedrich, J. and Ge, M. (2020). 4 Charts Explain Greenhouse Gas Emissions by Countries and Sectors.https://www.wri.org/blog/2020/02/greenhouse-gas-emissions-by-country-sector. Retrieved from [Google Scholar]

Harvey, F. (2022). "Is Putin's Ukraine invasion about fossil fuels?" The Guardian. Retrieved from https://www.theguardian.com/world/2022/feb/24/qa-could-putin-use-russian-gas-supplies-to-hurt-europe

Kirton, J., Warren, B., and Rapson, J. (2022). "Creating Compliance with G20 and G7 Climate Change Commitments through Global, Regional and Local Actors." http://www.g7.utoronto.ca/scholar/kirton-warren-rapson-isa-2021.pdf

Lai, Y. (2022). G-20 ministers at odds at Bali climate action meeting. The Jakarta Post. https://www.thejakartapost.com/paper/2022/08/31/g20-ministers-at-odds-at-bali-climate-action-meeting.html

Lamb, K. and Budiman, Y. (2022). "G20 climate talks in Indonesia fail to agree communique," https://www.reuters.com/business/environment/g20-host-indonesia-urges-cooperation-tackle-global-climate-issues-2022-08-31/

Lo, J. (2022). "Collapse of G20 talks in Bali spark fears of 'backtracking' on climate pledges." https://www.climatechangenews.com/2022/09/02/collapse-of-g20-talks-in-bali-spark-fears-of-backtracking-on-climate-pledges/

McGrath, L. and Bernauer, T. (2022). "How strong is public support for unilateral climate policy and what drives it?" WIREs Climate Change, Vol. 8: 1-17. https://wires.onlinelibrary.wiley.com/doi/full/10.1002/wcc.484

Mitchell, I. (2021). "Climate Finance is the Elephant in the Room at COP26." Chatham House, November 5. https://www.chathamhouse.org/2021/11/climate-finance-elephant-room-cop26.

Nascimento, L. , Kuramochi, T. and Höhne, N. (2022a). The G20 emission projections to 2030 improved since the Paris Agreement, but only slightly. Mitigation Adaption Strategy Global Change (2022) 27: 39 9 Vol.:(0123456789) https://doi.org/10.1007/s11027-022-10018-5

Nascimento, L., Kuramochi, T., Lacobuta, G., Den Elzen, M., Fekete, H., Weishaupt, M., Van Soest, H.L., Roelfsema, M., De Vivero-Serrano, G., Lui, S., Hans, F., de Villafranca Casas, M.J and & Höhne, N. (2022b). "Twenty years of climate policy: G20 coverage and gaps," Climate Policy, 22:2, 158-174, DOI: 10.1080/14693062.2021.1993776

OECD. (2021). The Annual Climate Action Monitor: Helping Countries Advance Towards Net Zero, OECD Publishing, Paris, https://doi.org/10.1787/5bcb405c-en

Olawuyi, D.S. (2018). "From technology transfer to technology absorption: addressing climate technology gaps in Africa." Journal of Energy & Natural Resources Law, 36(1). https://doi.org/10.1080/02646811.2017.1379667

Reuters. (2022). "Major economies accused of 'backsliding' on emissions as G20 climate meet ends in failure," https://edition.cnn.com/2022/09/01/world/g20-climate-communique-intl/index.html

The World Bank. (2022). "Food and Energy Price Shocks from Ukraine War Could Last for Years" Press Release, 26 April. https://www.worldbank.org/en/news/press-release/2022/04/26/food-and-energy-price-shocks-from-ukraine-war

The UK Government. (2021). "COP26 Presidency Compilation of 2021-2025 Climate Finance Commitments." UN Climate Change Conference UK 2021, November. https://ukcop26.org/wp-content/uploads/2021/11/Table-of-climate-finance-commitments-November-2021.pdf

Timperley, J. (2021). "The Broken $100-Billion Promise of Climate Finance — and How to Fix It." Nature, October 20. https://www.nature.com/articles/d41586-021-02846-3

United Nations. (2021). "COP26 Closes With 'Compromise' Deal on Climate, But It's Not Enough, Says UN Chief." UN News, November 13. https://news.un.org/en/story/2021/11/1105792

Weko, S. and Golthau, A. (2022). "Bridging the law carbon technology gap? Assessing energy initiatives for the Global South." Energy Policy, https://doi.org/10.1016/j.enpol.2022.113192

Appendix 1: NDC (Nationally Determined Contributions) enhancement by G20 members

G20 MEMBERS	MITIGATION	ADAPTATION
Argentina	Yes, enhancement in the revised submission	No, no enhancement in the revised submission
Australia	Yes, enhancement in the revised submission	Yes, enhancement in the revised submission
Brazil	No, no enhancement in the revised submission	Yes, enhancement in the revised submission
Canada	Yes, enhancement in the revised submission	Yes, enhancement in the revised submission
China	Yes, enhancement in the revised submission	Yes, enhancement in the revised submission
France	Yes, enhancement in the revised submission	No, no enhancement in the revised submission
Germany	Yes, enhancement in the revised submission	No, no enhancement in the revised submission
India	Yes, enhancement in the revised submission	No, no enhancement in the revised submission
Indonesia	Yes, enhancement in the revised submission	Yes, enhancement in the revised submission
Italy	Yes, enhancement in the revised submission	No, no enhancement in the revised submission
Japan	Yes, enhancement in the revised submission	No, no enhancement in the revised submission
Republic of Korea	Yes, enhancement in the revised submission	Yes, enhancement in the revised submission
Mexico	No, no enhancement in the revised submission	Yes, enhancement in the revised submission
Russia	Yes, enhancement in the revised submission	Yes, enhancement in the revised submission
Saudi Arabia	Yes, enhancement in the revised submission	Yes, enhancement in the revised submission
South Africa	Yes, enhancement in the revised submission	Yes, enhancement in the revised submission
Turkiye	No previous submission available	No previous submission available
United Kingdom	Yes, enhancement in the revised submission	No, no enhancement in the revised submission
United States	Yes, enhancement in the revised submission	No, no enhancement in the revised submission
European Union	Yes, enhancement in the revised submission	No, no enhancement in the revised submission

Source: Climate Watch (2022) https://www.climatewatchdata.org/2020-ndc-tracker accessed 17 November 2022

Appendix 2:
G20 Climate ambition target progress

G20 MEMBERS	SHARE OF GLOBAL EMISSIONS%	FIRST NDC (NATIONALLY DETERMINED CONTRIBUTIONS)	UPDATED FIRST NDC
Argentina	0.80	Not exceed a net emission of 483 (unconditional) million tCO2e by the year 2030; conditional measures, if jointly implemented could bring emissions to 369 million tCO2e for 2030.	Argentina commits to an economy-wide unconditional cap net emission of 349 million tCO2e in 2030.
Australia	1.22	26%-28% reduction in greenhouse gas (GHG) emissions by 2030 compared to 2005 levels.	Australia commits to reducing its GHG emissions 43% below 2005 levels by 2030.
Brazil	2.92	Reduce GHG emissions by 37% in 2025, and by 43% (indicative) in 2030 below 2005 levels.	Brazil commits to reduce emissions from 2005 levels by 37% in 2025, and by 50% in 2030.
Canada	1.56	30% reduction in GHG emissions by 2030 compared to 2005, representing a total economy-wide emission of 523 million tCO2e in 2030.	"At least a 40-45% reduction in GHG emissions compared to 2005 levels."
China	24.23	China "aims to have CO2 emissions peak before 2030 and achieve carbon neutrality before 2060." "China will lower its CO2 emissions per unit of gross domestic product (GDP) by over 65% from the 2005 levels."	Achieve the peaking of CO2 emissions around 2030 and making best efforts to peak early; 60–65% reduction of CO2 emissions per unit of GDP by 2030 compared to 2005 levels.
France	0.71	The European Union and its 28 member states submitted a joint NDC: at least 40% domestic reduction in GHG emissions by 2030 compared to 1990.	At least 55% reduction in GHG emissions by 2030 compared to 1990
Germany	1.45	The European Union and its 28 member states submitted a joint NDC: at least 40% domestic reduction in GHG emissions by 2030 compared to 1990.	At least 55% reduction in greenhouse gas emissions by 2030 compared to 1990.
India	6.76	33–35% reduction in the emissions intensity of its GDP by 2030 compared to 2005 levels.	India commits to reducing its emissions intensity by 45% by 2030 compared to 2005 levels.
Indonesia	3.94	29% (unconditional) and up to 41% (conditional) by 2030 compared to the business-as-usual scenario; 26% (unconditional) reduction in GHG emissions by 2020 compared to business-as-usual scenario.	Indonesia commits to reducing its emissions by 31.89% from business-as-usual by 2030 (unconditional), and by 43.2% from business-as-usual by 2030 (conditional).
Italy	0.76	The European Union and its 28 member states submitted a joint NDC: at least 40% domestic reduction in GHG emissions by 2030 compared to 1990.	At least 55% reduction in greenhouse gas emissions by 2030 compared to 1990.

Source: Climate Watch (2022) https://www.climatewatchdata.org/2020-ndc-tracker accessed 17 November 2022

G20 MEMBERS	SHARE OF GLOBAL EMISSIONS%	FIRST NDC (NATIONALLY DETERMINED CONTRIBUTIONS)	UPDATED FIRST NDC
Japan	2.28	26% reduction in GHG emissions by fiscal year (FY) 2030 compared to FY 2013, or 25.4% reduction compared to FY 2005, equivalent to approximately 1.042 billion tCO2e in 2030.	Japan commits to reduce GHG emissions by 46% by 2030 compared to 2013 levels.
Republic of Korea	1.31	37% reduction in GHG emissions by 2030 compared to the business-as-usual scenario (850.6 million tCO2e).	Republic of Korea commits to reduce GHG emissions by 40% by 2030 compared to 2018 levels (727.6 million tCO2e).
Mexico	1.35	25% (unconditional) reduction in GHG and short-lived-climate pollutants (SLCP) emissions for the year 2030 compared to business-as-usual scenario, equivalent to 22% reduction in GHG and 51% reduction in black carbon. With conditions, GHG reductions could increase up to 36%, and black carbon reductions to 70% in 2030.	Unconditionally, 22% reduction in GHG and 51% reduction in Black Carbon for the year 2030 compared to BAU scenario. With conditions, GHG reductions could increase up to 36%, and black carbon reductions to 70% in 2030.
Russia	3.87	Limit GHG emissions to 70-75% of 1990 levels by 2030.	"A target for limiting greenhouse gas emissions, which provides for a reduction in greenhouse gas emissions by 2030 to 70% relative to the 1990 level."
Saudi Arabia	1.45	Not applicable.	Not applicable.
South Africa	1.13	South Africa's emissions by 2025 and 2030 will be in a range between 398 and 614 million tCO2e.	South Africa commits to reducing its GHG emissions to 398-510 million tCO2e by 2025, and to 350-420 million tCO2e by 2030.
Turkey	-	Up to 21% reduction in GHG emissions by 2030 compared to the business-as-usual level.	No comparable data
United Kingdom	0.86	The European Union and its 28 Member States submitted a joint NDC: at least 40% domestic reduction in GHG emissions by 2030 compared to 1990.	The UK commits to reducing its emissions by at least 68% by 2030 compared to 1990 levels.
United States	11.6	26-28% reduction in GHG emission by 2025 compared to 2005 and to make best efforts to reduce its emissions by 28%.	"Economy-wide target of reducing net greenhouse gas emissions by 50-52% below 2005 levels in 2030."
European Union	6.33	The European Union and its 28 member states submitted a joint NDC: at least 40% domestic reduction in GHG emissions by 2030 compared to 1990.	At least 55% reduction in GHG emissions by 2030 compared to 1990

Source: Climate Watch (2022) https://www.climatewatchdata.org/2020-ndc-tracker accessed 17 November 2022

Researchers



Yulius P Hermawan is a lecturer in the Department of International Relations of Parahyangan Catholic University in Bandung, Indonesia. His research interests include the G20 and global governance, the Sustainable Development Goals (particularly SDG 17) and Indonesia's membership in international institutions. In addition to his teaching and research, he works with some ministries and international development agencies as an expert on international development cooperation and foreign policy.



Evi Fitriani is Professor of International Relations at the Faculty of Social and Political Sciences, Universitas Indonesia. She is the Indonesian Country Coordinator of the Network of East Asia Think-tanks (NEAT) and Co-founder of the ASEAN Study Centre of Universitas Indonesia in which she was involved in policy recommendations for the Indonesian government, ASEAN, ASEAN Plus Three (APT), and the Asia-Europe Meeting (ASEM). She has published books, book chapters, and journal articles on Indonesian foreign policy, ASEAN, Asia-Europe relations, and Indonesia-Australia relations.



Gracia Paramitha has currently supported the G20 Indonesia 2022 presidency through collaboration among engagement groups of the G20. She became a lecturer at the London School of Public Relations (LSPR) Institute of Communication and Business, Jakarta. Additionally she is also a research consultant on climate economy at the Centre for Strategic and International Studies (CSIS) Indonesia. She completed a PhD in Politics at the University of York, United Kingdom, with a thesis on bilateral climate change governance in Indonesia. She is interested in researching the G20, climate governance, sustainable development goals (SDGs), youth, climate change politics, and environmental policy.



Stanislaus Risadi Apresian is a PhD candidate in politics and international studies (POLIS) at the University of Leeds. His PhD project topic is the Political Economy of Climate Change Adaptation: Indonesia in the post-Paris Agreement. His study is funded by an LPDP (Indonesia Endowment Fund for Education) scholarship. He is a lecturer at the International Relations Department, Parahyangan Catholic University, focusing on global environmental politics and international political economy. He also teaches the environmental politics and policy module and is a researcher at Priestley International Centre for Climate at the University of Leeds. He graduated from the International Relations Department at Gadjah Mada University with Bachelor and Master degrees.



HEINRICH BÖLL STIFTUNG
SOUTHEAST ASIA

CLIMATE CHANGE UNDER INDONESIA'S G20 PRESIDENCY 2022

OVERVIEW, CHALLENGES, AND WAYS FORWARD

