

Annex to G20 Leaders Declaration

G20 Hamburg Climate and Energy Action Plan for Growth

A. Preamble¹

Economic growth, sustainable development and prosperity are at the heart of G20 cooperation. They rely on universal access to affordable, reliable, sustainable energy sources and clean technologies. The leaders of G20 members will continually develop their economies and energy systems to better reflect the evolution of the global energy and environmental landscape. To facilitate the implementation of UNFCCC, the Paris Agreement² and the 2030 Agenda for Sustainable Development, we will strive to move forward in a coherent and mutually supportive manner that will provide us with significant opportunities for modernising our economies, enhancing competitiveness, stimulating employment and growth and ensuring socio-economic benefits of increased energy access. In addition, and in view of the increasing impacts of climate change, we will strive to increase the resilience of our communities and economies.

Our action will be guided by the Sustainable Development Goals (SDGs) and the Paris Agreement's aim to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels; by increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience; and by making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development. Our actions pursuant to the implementation of the Paris Agreement will reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

¹ The United States is currently in the process of reviewing many of its policies related to climate change and continues to reserve its position on this document and its contents.

² Still subject to ratification for some G20 members.

We emphasise the urgency and priority of accelerating the implementation of pre-2020 commitments and actions, in particular, for parties to the Kyoto Protocol, the ratification of the Doha Amendment.

We share the common understanding of the energy system as the backbone of our economies. Diverse energy systems rely on affordable, secure and sustainable energy sources and clean technologies such as energy efficiency, renewable energy, natural gas and nuclear power for those countries that opt to use it, and advanced and cleaner fossil fuel technologies, employed in a sustainable manner. Such energy systems can contribute greatly to achieving energy services for all at affordable prices and prosperity for future generations. We recognise that our actions contribute substantially to global greenhouse gas emission reductions, global energy developments and global prosperity, leaving no one behind.

In facilitating well-balanced and economically viable long-term strategies and signals for investments in order to continually transform and enhance our economies and energy systems, G20 members will collaborate closely and balance a number of important factors, including inter alia energy security, energy access, infrastructure, environmental protection, poverty reduction, good health, quality education and quality job creation.

Welcoming the progress made under prior G20 Presidencies, in particular our Leaders' commitment from Hangzhou to identify new and sustainable drivers of growth, we take note of the OECD's report "Investing in Climate, Investing in Growth", the IEA/IRENA report "Perspectives for the Energy Transition: Investment Needs for a Low Carbon Energy System", as well as the World Bank report "Sovereign Climate and Disaster Risk Pooling – Joining Forces to Manage Climate and Disaster Risks".

We intend to collaborate closely on climate and energy issues to successfully address the challenges of energy security and productivity, environmental protection, and to fully harvest the opportunities for innovation and economic growth.

We join our efforts in implementing this G20 Action Plan on Climate and Energy for Growth, whilst not duplicating other processes.

B. Nationally Determined Contributions

While the implementation of Nationally Determined Contributions (NDCs) will be different for every country, there is value in sharing experiences and good practices and providing for mutual learning. Acknowledging that the sum of our actions will make a difference at global scale, our actions will be guided by our commitments under the Paris Agreement. NDC preparation and implementation will be more effective if embedded in broader national growth and development strategies.

G20 Actions

- We move forward to implementing our current and future Nationally Determined Contributions (NDCs) in line with the Paris Agreement. We will increase cooperation among ourselves and with non-G20 countries to facilitate mutual learning, good practice sharing and capacity-building, including through existing fora, inter alia, such as the NDC Partnership.
- Those G20 countries who provide development assistance will strengthen their efforts to support partner countries in NDC implementation. They will further align their development cooperation activities with partner countries' NDCs as well as the goals of the Paris Agreement, without compromising support for other sustainable development goals.

C. Long-Term Low Greenhouse Gas Emission Development Strategies

Despite our different national circumstances, we consider long-term low greenhouse gas emission development strategies to be a unique opportunity for national, country-specific approaches, guiding short(er) term planning and policy making in relevant sectors, mainstreaming climate action with efforts to promote inclusive economic growth and the implementation of the 2030 Agenda. They can incentivise respective investment flows and technological innovation. They will be living documents; there will be no one-size-fits-all solution.

G20 Actions

- Recognising different national circumstances and domestic procedures, capacities, needs, challenges and starting points, we recall the invitation to communicate, by 2020, mid-century, long-term low greenhouse gas emission development strategies.
- We welcome the submission of long-term strategies by some G20 countries and ongoing efforts by others. We will engage in good-practice sharing and cooperation, which would also benefit non-G20 countries, including through existing fora, inter alia, such as the 2050 Pathways Platform.
- We recognise that long-term low greenhouse gas emission development strategies may inform our investments, inter alia in infrastructure.

D. A Reliable and Secure Framework for the Energy Sector Transition

Energy security, access to affordable, reliable and sustainable energy for all, and environmentally-friendly energy systems support sustainable, inclusive economic growth and job creation. The G20 members should lead the transition to sustainable and low greenhouse gas emission energy systems, taking into account different national circumstances, needs, challenges and priorities, such as domestic energy resources, economic development, energy access and energy demand dynamics. We envisage a transition to sustainable and low greenhouse gas emission energy systems that is technically feasible and economically viable and will jointly tackle the challenges related to its implementation.

Robust, long-term energy sector development strategies and their timely implementation will increase investor certainty, attract necessary investments and help minimise the unexpected devaluation of assets in the energy sector. We stress the importance of increased investment in sustainable and clean energy technologies, energy efficiency, energy infrastructure and energy projects.

Energy transitions rely on a diversification of sustainable and clean energy technologies, but in particular energy efficiency will play an important role in all our future energy systems.

Recalling the G20 Principles on Energy Collaboration, we regard energy security as a guiding principle for the transformation of our energy systems, and we will continue to work on open, flexible and transparent markets for energy commodities and technologies as critical prerequisites for increased energy investments.

Innovation in sustainable and clean energy technologies is a top priority for G20 members. We seek to jointly strengthen G20 collaboration on research, development and demonstration (RD+D) for technological innovation, such as Mission Innovation and other initiatives, to accelerate development and deployment of sustainable and clean energy technologies.

Scientific analysis, optional regular monitoring and policy adjustment, as well as voluntary collaboration and best practice exchange within the G20, among international and national research institutes, and the private sector, can provide significant support to energy transition processes.

G20 Actions

- We jointly work to transform our energy systems into affordable, reliable, sustainable and low greenhouse gas emission energy systems as soon as feasible and consistent with the Paris Agreement, while taking into account national circumstances, needs, priorities and challenges as outlined in the NDCs.

- We encourage the exchange of best practices on national long-term low greenhouse gas emission energy sector strategies in the G20, including among national and international research institutes.
- We invite international organisations, such as IEA, IRENA and others where appropriate, to support our efforts in providing a regular update report with relation to the global transformation of the energy sector and further investment needs.

D.1. Promote Energy Efficiency

Energy savings and a strong increase of the energy productivity of our economies will be key for a successful transformation of our energy systems. Recognising SDG 7, which includes doubling the improvement rate of energy efficiency globally, we acknowledge cost-effective energy efficiency as one of the key options in reducing emissions, enhancing energy security, promoting economic growth and job creation, and strengthening industrial competitiveness. We highlight the importance of frameworks to encourage necessary additional investments in technological innovation in energy efficiency as a driver for economic growth.

We acknowledge the G20 Energy Efficiency Investment Toolkit, a set of voluntary options for participating countries to upscale energy efficiency in G20 economies, as an integrated approach to enhancing capital flows towards energy efficiency.

We stress the importance of strengthening and coordinating international collaboration in the field of energy efficiency and developing frameworks for new business models and policy options to ensure the necessary investments in energy efficiency measures in all sectors. We acknowledge the potential of all sectors, in particular the buildings sector, to significantly improve energy efficiency and take note of the Global Alliance for Buildings and Construction (GABC) as a voluntary initiative that has provided policy recommendations for all actors along the value chain for the development of national building strategies.

G20 Actions

- We seek to strengthen international collaboration on energy efficiency, avoid duplication of work streams among international organisations working on energy efficiency, and create opportunities for more efficient use of resources with greater impact of the collaboration. To accomplish this, we will explore how to create an Energy Efficiency Hub. A task force under the leadership of the G20 Presidency with participation of G20 members will be set up to consider next steps and to develop the Hub's terms of reference and to report back to the G20 ESWG under the Argentinean Presidency. The concept note developed by the German Presidency will serve as an input for the work of the task force.

- We will continue the implementation of the G20 Energy Efficiency Leading Programme (EELP) and encourage international organisations to share sectoral policy options, continue exchange on best practices, and call on other countries to join our efforts.

D.2. Scaling up Renewable Energy and other Sustainable Energy Sources

Renewable and other clean energy technologies play a significant role in the transition to sustainable and low greenhouse gas emission energy systems in G20 economies, providing numerous co-benefits such as job creation, reduced air pollution and enhanced energy security.

While costs for renewable energy technologies have decreased significantly in recent years, we need to continue to mobilise private sector investments and tackle the challenge of integrating rising shares of variable renewable energy into our energy systems while effectively enhancing energy security and ensuring a cost-efficient energy sector transition. Flexibility options such as interconnection and transmission capacities, smart grid technology, energy storage, flexible power plants, demand side management, and regional cross-border cooperation are important elements of delivering reliable, affordable and resilient energy. Depending on national circumstances and preferences, baseload generation remains an important element of energy security.

The energy transition needs to span the power generation and the end-use sectors alike, including enhanced renewables deployment in the heating and cooling, transport, and industry sectors. This includes all renewable energy sources, such as bioenergy, including second generation and other advanced biofuels, solar, wind, hydro, geothermal and ocean.

We recognise that, depending on national circumstances, natural gas can play an important role in the energy transition, moving towards a low greenhouse gas emission energy future, including for providing increased flexibility for the integration of variable renewable energy. A secure supply of natural gas depends on timely investments, diversification of sources, suppliers, and routes. G20 economies will endeavour to improve the functioning, transparency and competitiveness of gas markets, with a strategic view of the gas supply chain, including LNG at the global level. Gas storage can also provide a contribution to energy security.

In those countries that opt to use nuclear energy, it contributes to the reduction of greenhouse gas emissions and to baseload. We call upon those countries to uphold the highest standards of nuclear safety, security and non-proliferation.

We affirm the importance of using the best available technologies and practices in order to address the environmental impacts, including greenhouse gas emissions, of the production, transport and consumption of fossil fuels. We encourage countries that opt to use carbon capture, use and storage (CCUS) to continue to undertake RD&D and to collaborate on large-scale demonstration projects.

G20 Actions

- We welcome the progress achieved with the Voluntary Action Plan on Renewable Energy adopted under the Chinese Presidency and the G20 Toolkit of Voluntary Options on Renewable Energy Deployment adopted under the Turkish Presidency, and we will continue implementing both, including risk mitigation instruments, in order to mobilise private sector investments.

D.3. Realising Access to Modern and Sustainable Energy Services for All

We reaffirm that access to affordable, reliable, sustainable, and modern energy is a key enabler of the Sustainable Development Goals, including poverty eradication, productive economic activity, environmental protection, socio-economic benefits, health, education, and gender empowerment. With this in mind, we recognise the ambition of Sustainable Development Goal 7 and the role of Sustainable Energy for All to provide data on the implementation.

G20 Actions

- We will encourage accelerating access to affordable, reliable, sustainable, and modern energy in Africa and the Asia Pacific and other regions to address energy poverty through national, bilateral and multilateral actions and initiatives. We will work to mobilise financial resources from private investors, development finance institutions, and multilateral development banks and hence improving investments in energy for productive use, transport, clean cooking, and heating and cooling.
- We will continue the implementation of the energy access action plans for Sub-Sahara Africa and the Asia-Pacific region, including reporting on progress at the Energy Sustainability Working Group Meeting, while exploring the potential to expand the geographic scope to other regions such as Latin America.
- We recognise the opportunity for voluntary support for the objectives of the African-led Renewable Energy Initiative (AREI), which aims at accelerating access to renewable energy in Africa and reducing energy poverty to enable an energy sector transition.

E. Enhancing Climate Resilience and Adaptation Efforts

The G20 will promote adaptation efforts and cooperation on climate resilience within the G20 and beyond. The impacts of climate change such as changes in temperature, precipitation, sea level rise and the frequency and intensity of extreme weather events are already noticeably

impacting global ecosystems, economies, and societies. This puts at risk past and future progress towards the 2030 Agenda, including the goals of ending poverty and hunger. Whilst these impacts will be felt by all countries, poor and vulnerable people will be disproportionately affected. Faster and more effective responses for affected poor and vulnerable people, in particular women and children, are required. Therefore, taking appropriate steps to enhance adaptive capacity, including through support to adaptation planning, is becoming increasingly pressing.

The G20 can build on important work and initiatives, such as the Sendai Framework for Disaster Risk Reduction, to enhance adaptation efforts and scale up the resilience of people, sectors and regions. Appropriate risk finance and insurance solutions such as regional sovereign disaster risk pools, including the African Risk Capacity (ARC), the Caribbean Catastrophe Risk Insurance Facility (CCRIF) and the Pacific Catastrophe Risk Insurance Company (PCRAFI), need to be integrated into broader financial protection and comprehensive risk management strategies.

Despite these efforts, significant protection gaps remain, particularly in Asia, Africa and other vulnerable regions.

G20 Actions

- We stress our support for national adaptation action and recognise efforts promoted by the National Adaptation Plan Global Network, the Global Centre of Excellence on Climate Adaptation, and the Adaptation Fund, among others. We encourage multilateral institutions to scale up financing for adaptation efforts of, and to improve access to adaptation finance for developing countries. We welcome the arrangements developed by the Green Climate Fund to aim for a balance between mitigation and adaptation action over time.
- Aiming to close the protection gap, we welcome the creation of a “Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions”, inviting relevant partners from G20 and other countries, international organisations and, as appropriate, civil society and private sector to engage according to their respective capacities. The Global Partnership builds on the work of existing platforms, such as InsuResilience, and voluntary engagement of its partners, taking into account the key lessons of ongoing work by the World Bank on “Sovereign Climate and Disaster Risk Pooling”. The Global Partnership will develop synergies with other related initiatives, such as Climate Risks Early Warning Systems and the Global Facility for Disaster Reduction and Recovery. We encourage multilateral institutions to develop options for innovative climate and disaster risk finance solutions.
- We will develop, starting in 2017, a Work Program with the aim of sharing best-practices and of promoting enhanced efforts for adaptation and resilience-building at home and in our cooperation with partner countries. For this purpose, the G20 invites the World Bank, MDBs, and other international organisations to assist in identifying potential areas of further cooperation in 2018.

F. Aligning Finance Flows

Significant investments will be required in the upcoming 15 years for establishing and modernising infrastructure. In light of different national circumstances, this can constitute significant opportunities for stimulating employment, poverty eradication and growth through the transformation towards sustainable, low greenhouse gas emission and climate resilient infrastructure. We recall the objective to align finance flows with the goals of the Paris Agreement. Mobilising climate finance from private sources will be key to addressing significant investment needs for both adaptation and mitigation. Public finance will continue to play a significant role. We have different roles and responsibilities in this regard.

G20 Actions

- As spurring investments in low-emission and climate resilient development is key, we as G20 governments will strive to create an enabling environment that is conducive to making public and private investments consistent with the goals of the Paris Agreement as well as with the national sustainable development priorities and economic growth. We recognise those private actors that have already started to better align their portfolios with the Paris Agreement as well as related Sustainable Development Goals and encourage similar initiatives.
- We reemphasise the commitment by developed countries to the goal of mobilising jointly USD 100 billion per year by 2020, and their intention to continue this through 2025, in the context of meaningful mitigation actions and transparency on implementation, from public and private sources, for mitigation and adaptation in developing countries, taking into account their needs and priorities. We recognise multilateral climate finance institutions such as the Green Climate Fund and the Global Environment Facility as important in supporting the global response to climate change.
- We invite the OECD, UNEP and the World Bank to compile ongoing public and private activities within the G20 for making finance flows consistent with the Paris goals and, building on this, to analyse potential opportunities for strengthening these efforts and present this analysis in 2018.
- The G20 Green Finance Study Group has completed environmental risk analysis in the financial sector. The Group' 2017 Synthesis Report includes voluntary options for encouraging environmental risk analysis and for improving the availability and relevance of publicly available environmental data for financial analysis, taking into account country circumstances.
- The industry-led Task Force on Climate-related Financial Disclosures has also completed work, which includes recommendations on voluntary disclosures of climate-related financial risks by corporates, reflecting the principle of materiality.

- We recognise that domestic mitigation and adaptation policies, including domestic economic and market-based instruments - if carefully designed and preserving environmental integrity -, can promote innovation and stimulate investments. Recognising different national preferences and circumstances, we encourage to initiate sharing good practices and experiences on domestic mitigation and adaptation policies, including domestic economic and market-based instruments as well as emission to value approaches.

F.1. Role of the Multilateral Development Banks (MDBs)

We take note of the mobilisation of climate finance by MDBs and recognise their efforts to support climate action, including the joint statement by MDBs at COP21.³ MDBs' ability to provide large-scale financing, their potential to leverage private climate finance, and their presence around the globe place them in a good position to contribute to the transition to an increased adaptive capacity and a low greenhouse gas emission and climate-resilient development, including the achievement of related SDGs. Enhanced MDB climate actions will facilitate an effective response to client countries' demands, including by cooperating with national and regional institutions and fostering the mainstreaming of climate dimensions into development.

G20 Actions

- We call on all MDBs to identify opportunities for cooperation and enhanced action to address, inter alia, ambitious adaptation and mitigation finance, including coordinated support for country driven long-term strategies for low greenhouse gas emissions and respective technologies for climate-resilient development, as well as client countries' efforts for NDC implementation and enabling environments, the development of risk-pooling and the enhancement of harmonised reporting of all MDBs' climate finance.
- Building on the Principles and Ambitions for crowding in private finance elaborated in the G20 International Financial Architecture Working Group, we call on MDBs to illustrate how private sector finance can be further mobilised to meet the objectives of the 2030 Agenda and the Paris Agreement.

³ African Development Bank, Asian Development Bank, European Bank of Reconstruction and Development, European Investment Bank, Inter-American Development Bank, World Bank Group (2015). Joint Statement by the Multilateral Development Banks at Paris COP21 - Delivering Climate-Change Action at Scale: Our Commitment to Implementation.

F.2. Inefficient Fossil Fuel Subsidies that Encourage Wasteful Consumption

Inefficient fossil fuel subsidies (IFFS) that encourage wasteful consumption distort energy markets, impede investment in clean energy sources, place a strain on public budgets, and incentivise unsustainable infrastructure investments. Providing those in need with essential energy services, including the use of targeted cash transfers and other appropriate mechanisms, however, is still important. The US-Chinese peer review on IFFS was concluded, the German-Mexican peer review is ongoing and Indonesia and Italy have announced the continuation of their respective voluntary processes.

G20 Actions

- We reaffirm our commitment to rationalise and phase out, over the medium-term, inefficient fossil fuel subsidies that encourage wasteful consumption, recognising the need to support the poor and we will endeavour to make further progress in moving forward this commitment.
- We encourage all G20 members that have not yet done so to initiate a peer review of inefficient fossil fuel subsidies that encourage wasteful consumption as soon as feasible.
- We take note the OECD/IEA progress report and its options on how to further develop and improve the G20 peer review process based on recent experience and how to facilitate the phase out of inefficient fossil fuel subsidies that encourage wasteful consumption.

G. Global Action and Transformation in Other Fora and Processes

Striving to keep up the political momentum for global climate action, while respecting countries' different levels of engagement and national procedures, and without any intention to duplicate processes, we recognise the potential to generate synergies through countries' engagement in various other fora.

G20 Actions

- We welcome the Marrakech Partnership for Global Climate Action and encourage the further engagement of cities, regions, companies, investors and a multitude of non-state actors to support parties in implementing the Paris Agreement. We further encourage these actors to register their actions through the UNFCCC NAZCA platform.

- We encourage G20 members to proceed with their respective domestic procedures for joining the Kigali Amendment to the Montreal Protocol to phase down hydrofluorocarbons.

H. Way Forward

The G20 Sustainability Working Group presents this G20 Action Plan on Climate and Energy for Growth to the Sherpas.

Welcoming the contributions by the G20 Engagement Groups to the German G20 Presidency, we look forward to continuing dialogue with civil society stakeholders from the public and business sectors, NGOs, academia and think tanks.