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DECADE OF ACTIONS:

Bali Energy Transitions Roadmap



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1. INTRODUCTION

Under the Indonesia G20 Presidency 2022, the G20 has elevated the global clean energy transitions to a G20 Leader level priority.

Building on the three priorities of the G20 Energy Transitions Working Group (ETWG), the Indonesia G20 Presidency has developed a framework for accelerating clean, sustainable, just, affordable, and inclusive energy transitions. This Bali Energy Transitions Roadmap through 2030 (“the Bali Roadmap”) aims to provide a suggested way in the discussions and work of the G20 ETWG, climate, finance and related G20 tracks on clean energy transitions actions that will, naturally, reflect national circumstances, needs and priorities of G20 members in their low emission development pathways towards net zero emissions or carbon neutrality by or around mid-century as part of their announced 2030 pledges at the COP26 Glasgow Summit..

The Bali Roadmap builds on three components: a) the Bali Compact with principles for accelerating clean energy transitions; b) three key priorities of actions over the short to medium-term (through 2030); and c) a Presidency Troika action plan with milestones (see section 3).

The first important component of the Bali Roadmap, the **Bali Compact** offers an inclusive framework for G20 members and beyond to accelerate clean energy transitions that leave no one behind. Designed as a whole-of-government approach, it seeks to address social, environmental, and economic impacts and support just and inclusive energy transitions. The guiding principles of the Bali Compact include implementation and reviewing frameworks for improved decision-making; enhancing energy security and market stability and affordability; securing resilient and reliable energy supply infrastructure and system; boosting energy efficiency; diversifying energy systems and mixes; catalysing sustainable and inclusive investments at scale; collaborating on mobilizing all sources of finance; scaling up innovative affordable, smart, low and zero emission technologies; and building and strengthening innovation ecosystems to boost research, development, demonstration, dissemination, and deployment.

As the second important component of the Bali Roadmap, the Indonesia Presidency put forward three core priorities for the G20 ETWG to consider in accelerating energy transitions: 1) securing energy accessibility, 2) scaling up smart and clean energy technologies; and 3) advancing clean energy financing. Actions along these core priorities of the G20 Presidency form the basis to work towards **broad G20 action plan for accelerating clean energy transitions, and might be considered as a work programme of the G20 Presidency Troika** in the G20 ETWG and related G20 working groups (climate, finance, infrastructure, development and trade tracks of the G20) with priorities and collaborative actions to promote the achievement of these priorities in the G20 through 2030.

Third, an annual Bali Energy Transitions stocktake is encouraged to follow up on the priorities and actions set out in the Bali Roadmap. This stocktake would be based on member self-review and reporting along the priorities and actions of the Bali Roadmap and a progress report by involved international organisations and initiatives. This will provide an opportunity to review progress in all focus areas and actions with a view to adjust and add new priorities and additional actions through 2030.

2. THE CORE PRIORITIES OF THE BALI ROADMAP

The Bali Roadmap intends to focus on a set of core priorities, milestones as well as voluntary and desired collaborative actions that will, naturally, reflect national circumstances, needs and priorities. (see Annex).

- Priority #1: Securing energy accessibility
- Priority #2: Scaling up smart and clean energy technologies
- Priority #3: Advancing clean energy financing

2.1. Priority #1: Securing energy accessibility

With slightly more than seven years left to achieve the 2030 Agenda for Sustainable Development, at the current rate for improving energy accessibility, there will still be an estimated 600 million people without access to electricity and 1.2 billion without access to clean cooking by 2030. In addition, the current energy crisis has highlighted the importance of re-focusing on populations at risk of energy poverty in all economies where affordable energy services have become inaccessible to many households, even in wealthy economies. The G20's focus on the following actions will move the energy accessibility forward for vulnerable populations that need to be addressed to achieve SDG7.

Action #1: Focus on a modern energy minimum requirement and the concept of affordable, reliable, modern, and sustainable energy services. The energy sector has an important bearing on the development of other sectors. Thus, in order to reap these gains, the G20 recognizes the importance of looking beyond basic energy access. Adopting a modern energy minimum in developing countries will help shift our collective efforts beyond basic energy access and to a volume that will be useful for household, community, and local economic needs.

Action #2: Maximise integrated approaches for joint clean cooking and electrification, notably in Sub-Saharan Africa and Asia through public funding/finance programmes and clean cooking technology deployments. Currently access to electricity has advanced faster than access to clean cooking fuels and technologies. By focusing attention through collaborative action on this population cohort, considerable progress can be made in reducing the universal challenge of access to clean cooking in developing countries.

Action #3: G20 action plan for Small Island Developing States (SIDS) and isolated communities. There has been continued dependence of the , archipelagic island states, remote and isolated communities on fuel imports (oil and diesel). The technology exists for these contexts and economies to transition to renewable energy sources which will contribute to the energy security of SIDS. The Indonesian G20 Presidency has the opportunity to focus securing clean energy access and accelerating energy transitions on these island economies and isolated communities which are found in all corners of the world, particularly in the Pacific. Renewable energy-based decentralised energy solutions could help facilitate regional cooperation to bridge the energy access gap globally.

Action #4: Address emerging energy poverty when energy becomes unaffordable and inaccessible to vulnerable households. The public policy challenge to eradicate energy poverty goes beyond ensuring basic access to electricity and clean cooking. Increasingly, household energy services for lighting, cooking, heating, cooling, and communication connectivity can become unaffordable and inaccessible to vulnerable households in every country. The G20 reaffirms its voluntary, non-binding definition of energy poverty that is inclusive of developed and developing country challenges as agreed under the Italian G20 Presidency. Furthermore, the G20 Energy Ministers in Karuizawa reaffirm their recognition

that natural gas plays a key role in many G20 countries, and its potential to expand significantly over the coming decades, supporting transitions towards lower emissions energy systems. G20 encourages efforts to address energy poverty challenges for vulnerable households through developing integrated policy solutions in line with national circumstances.

2.2 Priority #2: Clean energy technologies

Achieving progress in the global deployment of new and emerging clean energy technologies¹ by 2030 to accelerate clean energy transitions requires a programme of clean energy technology engagement by the G20. Such an engagement should identify best practices of national clean energy transitions frameworks; notably on just and inclusive transitions, support effective engagement of national, regional, and global clean energy technology partnerships in the G20, scale up global public and private funding through policy guidelines, including streamlining approvals and permitting and promote the resilience and sustainability of global clean energy supply chains.

Action #1: Strengthen whole-of-government approaches to national clean energy transitions through the exchange of best practices in the G20 on planning, implementation and tracking frameworks for energy policy decision making to address the social, environmental, and economic impacts, across several G20 tracks. This includes principles and guidelines for just and inclusive clean energy transitions.

Action #2: Support effective G20 engagement with global clean energy technology partnerships – including at a sectoral level of energy efficiency, electricity, industry, transport, electrification and energy systems – leveraging existing national, regional and global initiatives, such as Clean Energy Ministerial (CEM), Mission Innovation, the Breakthrough Agenda, the IEA Committee on Energy Research and Technology (CERT) and the IEA Technology Collaboration Programmes (TCPs), RD20 and similar platforms.

Action #3: Scale up global public and private funding of the development, demonstration and deployment of clean energy technologies by leveraging G20 tracks, relevant global fora and processes to ensure deep and sustained sharing of learning experiences between countries. This includes highlighting progress in global clean energy deployment, the identification of priority infrastructure needs, and the exchange of best practices for streamlining approvals and permitting.

Action #4: Promote the resilience and sustainability of clean energy supply chains. G20 can help foster an open, transparent and non-discriminatory trading environment for low emission energy products and equipment to facilitate the rapid deployment of clean energy technologies. G20 to support the formulation of global standards and frameworks for ESG. To enable a faster clean energy transition across sectors and regions, the G20 can work on common definitions and certification of clean energy technologies and materials, identify and lift barriers to diverse, responsible, sustainable and resilient supply chains for critical mineral production, processing, and recycling needed for clean energy technologies.

2.3 Priority #3: Clean energy finance and investments.

Achieving a Paris-aligned clean energy and climate resilient transitions will require trillions of investments from all sources of finance – public, private, domestic and international – to be mobilised. We urge developed countries to provide enhanced support, including through financial resources to assist developing countries, in continuation of their existing obligations

¹ With the involvement of finance and investment partners, G20 members and international organisations, the Indonesia Presidency organised a series of G20 side events on a broad range of technologies, including low emission hydrogen, ammonia, nuclear energy, biofuels, CCUS, direct air capture and energy efficiency.

under the UNFCCC, which can help to leverage the trillions required in clean energy investment. We ask relevant international organizations to continue-regularly tracking and reporting on the resources mobilized.

Lessons learned in developing national project pipelines that can attract financing at the scale needed to support clean energy transitions should be shared across countries. Private sector partners, both project developers and commercial finance providers should be involved in the design and implementation of solutions. These solutions will facilitate faster energy transitions by scaling up deployment of a wide range of clean energy technologies. Public sources of finance should focus on de-risking to crowd in higher multiples of commercial finance; including, for example through leveraging blended finance instruments for clean energy technologies.

Action #1: Strengthen clean energy finance and investment analysis across all sources of public and private finance to meet energy access and transition goals and **identify avenues for potential disbursement** that would bring down the costs of technology adoption. The immediate focus should be on both rapid upscaling of emerging technologies and large-scale roll-out of critical technologies.

Action #2: Develop sustainable and inclusive financing solutions at scale through collaboration among international organizations and relevant partners, and facilitate energy investment forums in showcasing investment opportunities that will enhance engagement with the private sector. Innovation is also needed to enhance collaboration on clean energy deployment in a way that accounts for different national circumstances.

Action #3: Highlight progress of clean energy transitions finance. G20 to encourage relevant international organisations and financial institutions to regularly monitor, track and report on progress on private and public clean energy finance flows in developing countries. G20 members to increase dialogue on investment opportunities in scaling up critical energy transition technologies, supportive policy measures, including discussions on public spending and related flows.

Action # 4: Develop closer links between the G20 Energy Transition Working Group and the G20 Sustainable Finance Working Group and to share outcomes that can benefit the scaling up of the clean energy transition. Support G20 Sustainable Finance Roadmap Action # 18, promote the development of sustainable finance alignment approaches and enhance collaboration and coordination on clean energy definitions, technical thresholds and pathways that support a just energy transition considering different national circumstances.

3. Priorities and actions of the Bali Roadmap

Priority	Milestones for 2030	Key actions and G20 deliverables	Organisations, initiatives and G20 Groups conducting relevant work ²
Priority Focus #1: Energy Accessibility			
Universal access to energy	SGD7.1.1. (Access to electricity)	Action #1: Introduce a modern energy minimum for electricity access approaches and the concept of affordable and accessible modern energy services	G20 energy track, MDBs, IEA, IRENA, SEforALL, UN, Rockefeller Foundation, GEAPP, Energy for Growth Hub.
	SGD7.1.2 (access to clean cooking fuels and technologies)	Action #2: Maximise integrated approaches for joint clean cooking and electrification , notably in Sub-Saharan Africa and Asia in public funding/finance programmes	G20 energy track, IRENA, Modern Energy Cooking Services (MECS), OPEC Fund, Clean Cooking Alliance, SEforALL.
	Regional focus	Action #3: G20 action plan for Small Island Developing States (SIDS) and isolated communities.	G20 energy track, Pacific Community (SPC), UN ESCAP, IRENA, Commonwealth Secretariat, International Solar Alliance, Sydney Energy Forum (SEF)
	All G20 economies	Action #4: Address emerging energy poverty when energy costs become unaffordable and inaccessible to vulnerable households.	G20 energy track, EU Energy Poverty Observatory, UN Bodies

² The list is non-exhaustive and includes references to related work streams of G20 tracks and work of relevant international organisations and initiatives in the area.

Priority Focus #2: Clean Energy Technologies

	Whole-of-government national clean energy transitions	<p>Action #1: Strengthen whole-of-government national clean energy transitions with exchange of best practices on frameworks for the planning, implementation and tracking of energy policy decision making to address the social, environmental, and economic impacts</p>	G20 energy, climate, finance and development tracks
		<p>G20 to adopt key principles and guidelines for just and inclusive energy transitions with a view to identify priority actions for the G20 on the following priority areas:</p> <ol style="list-style-type: none"> 1. Employment and jobs, social and economic development and engaging the people in the transitions 2. Gender equality and behavioural aspects and quality of life 3. Eliminating energy poverty and integrating younger generations in decision making. 	G20 energy, finance and development tracks, Global Commission on People-Centred Clean Energy Transitions, CEM Equality in Energy Transitions Initiative, CEM Empowering People Initiative.
	Energy technology partnerships for enhanced international cooperation	<p>Action #2: Support effective G20 engagement with global clean energy technology partnerships by strengthening and prioritising international collaboration, complementing domestic action of G20 members and partners. This includes co-hosting the G20 Energy Ministerial with CEM/MI.</p>	G20, IRENA, IEA CERT and TCPs, CEM/MI, Breakthroughs Agenda, RD20 platform
	Sectoral partnerships	<p>Increase energy efficiency of the global economy</p> <p>G20 to identify priority measures to scale up actions by sector, notably through strengthened energy</p>	G20, IEA, SEforALL, CEM/MI, Mission Efficiency

		efficiency standards and electrification, and enhanced financing frameworks	
		<p>Decarbonising the power sector</p> <p>G20 to review policies and financing frameworks necessary to deliver clean energy investment in the power sector, including for advancing the decarbonisation of generation, the expansion and modernisation of grids and the adoption of technologies to mitigate power sector emissions.</p>	G20, The Breakthrough Agenda and its partners, such as IEA, IRENA, Green Grids Initiative among others
		<p>Decarbonising the industry sector</p> <p>G20 to develop a toolbox with options for lowering GHG emissions for industry sector decarbonisation</p> <p>G20 to identify financing options and models for decarbonising heavy industries</p> <p>G20 to develop industry-specific recommendations (steel, cement, metals, among first priorities).</p>	G20 climate, finance and ETWG tracks, CEM Industrial Deep Decarbonisation Initiative (IDDI), OECD, The Breakthrough Agenda
		<p>Decarbonising the transport sector</p> <p>G20 to develop a policy toolbox with policy options for transport sector decarbonisation including road, aviation, maritime sectors and mobility.</p>	G20, IMO, IATA, ICAO, OECD, IEA, CEM, The Breakthrough Agenda
		<p>Electrifying demand</p> <p>G20 to develop a policy toolbox for the deployment of energy system/sector integration technologies</p>	G20, IRENA, IEA, ISGAN CEM.

		with priorities on digitalisation, smart grid technologies, energy storage among others	
	Scale up global funding of clean energy technologies	<p>Action #3: Scale up global public and private funding of the development, demonstration and deployment of clean energy technologies</p> <p>G20 to track and highlight progress in global clean energy deployment, the identification of priority infrastructure needs and support the exchange of best practices for streamlining approvals and permitting</p>	G20 energy, finance and infrastructure tracks.
	Resilient and sustainable global clean energy supply chains	<p>Action #4: Promote the resilience and sustainability of clean energy supply chains</p> <p>G20 to support the formulation of global standards and frameworks for ESG, common definitions and certification of clean energy technologies and materials and actions to support diverse, responsible, sustainable and resilient supply chains for critical mineral production, processing, and recycling.</p>	G20 energy track, Sydney Energy Forum (SEF), The Breakthrough Agenda
Priority Focus #3: Clean Energy Finance and Investment			
Clean energy finance and investment	Catalyze sustainable investment at scale and mobilize all sources of public and private finance	<p>Action #1: (i) Strengthen clean energy finance and investment analysis across all sources of public and private finance to meet energy transitions goals; and (ii) identify avenues for potential disbursement that would bring down the costs of technology adoption.</p>	G20 energy and finance tracks, OECD, IEA, CEM, IRENA, ERIA
		<p>Action #2: Develop sustainable and inclusive financing solutions at scale through collaboration among international organisations and relevant</p>	G20 energy, finance and development tracks, OECD, IRENA, GFANZ, MDBs

		partners, facilitate energy investment forums in showcasing investment opportunities, and providing platforms for enhanced engagement with private sector initiatives.	
	Measuring energy transitions finance	<p>Action #3: Monitor and track energy transitions finance</p> <p>G20 to encourage regular monitoring, tracking and reporting on public and private energy finance flows to developing countries.</p>	G20 energy, climate, finance and development tracks, OECD, IRENA
	Linkage with sustainable finance roadmap	<p>Action # 4: Develop closer links between the Energy Transitions Working Group and the Sustainable Finance Working Group to share outcomes for scaling up clean energy transitions efforts.</p> <p>Support G20 Sustainable Finance Roadmap Action #18 on promoting the development of sustainable finance alignment approaches and enhancing collaboration and coordination on clean energy definitions, technical thresholds, and pathways that support a just energy transition considering different national circumstances.</p>	G20 energy and finance tracks, OECD, IEA, UN