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Review of the implementation of the 2030 Agenda for Sustainable Development in Asia and the Pacific and issues pertinent to the subsidiary structure of the

Commission: energy

Accelerating the just energy transition to make progress in achieving net-zero-emissions targets in Asia and the Pacific

Note by the secretariat

Summary

In the present document, a series of concrete opportunities are identified for member States, in partnership with other stakeholders, to accelerate the energy transition in line with national commitments. The Third Asian and Pacific Energy Forum, scheduled to be held in October 2023, will be an opportunity to review progress and discuss the possible implications of the energy transition for the region. The present document also contains recommendations for policy options to accelerate the just energy transition in line with the 2030 Agenda for Sustainable Development and the Paris Agreement, consistent with national policy objectives, including net-zero-emissions targets where relevant.

The Economic and Social Commission for Asia and the Pacific may wish to review the findings and recommendations contained in the present document and provide guidance on the future work of the secretariat.

* ESCAP/79/1/Rev.2.

I. Introduction

1. The global energy system is undergoing a transition from a carbon-intensive model dominated by fossil fuels to a low-emission system integrating renewable energy, low-carbon fuels and enhanced energy efficiency. The transition is being driven by concerns over climate change and is being enabled by the emergence of new technologies and business models. The transition is critical for the achievement both of Sustainable Development Goal 7 (Affordable and clean energy) in the medium term and of net-zero emissions by mid-century, with the overall aim being to avoid the worst effects of climate change.

2. Despite record-breaking investments in renewable energy and other low-carbon technologies, neither the world as a whole nor the Asia-Pacific region is on track to meet targets under Goal 7 or to achieve emissions reductions in line with the Paris Agreement. The number of member States in the region making carbon neutrality pledges rose to 39 by August 2022. However, under existing climate policies, regional greenhouse gas emissions were projected to rise from 27 gigatons of carbon dioxide equivalent in 2020 to 35 gigatons in 2030 and 52 gigatons in 2060, which is nearly double the figure from 2020.¹

3. Declining costs for clean energy technologies combined with high and volatile fossil fuel prices strengthen the economic case for the energy transition. Getting the Asia-Pacific region fully on track will require increasing the level of ambition and accelerating the implementation of effective and appropriate policies to further unlock investments aimed at scaling up renewable energy and improving energy efficiency.

4. The energy transition pathways adopted by member States must also embody the concept of the “just energy transition” by considering socioeconomic priorities and mitigating the impacts of shifts in energy production and consumption on vulnerable groups and specific geographical regions that are adversely affected.

5. Increasing power system connectivity is an important tool for achieving not only Sustainable Development Goal 7, but all the Goals. Power system connectivity is a means of facilitating the efficient integration of renewable energy resources while also increasing energy security for many countries in the Asia-Pacific region. However, power system connectivity efforts in the region are generally limited either to proposals and studies or to bilateral initiatives. More concerted efforts are necessary to advance power system connectivity in the region.

6. At the same time, as major producers and consumers of critical raw materials that underpin the energy transition, the countries in the region will also need to consider the upstream impact of accelerating the deployment of modern renewable energy resources and other technologies. The present document contains the principal challenges in sustainably accelerating the just energy transition in the region, together with recommendations for policy options.

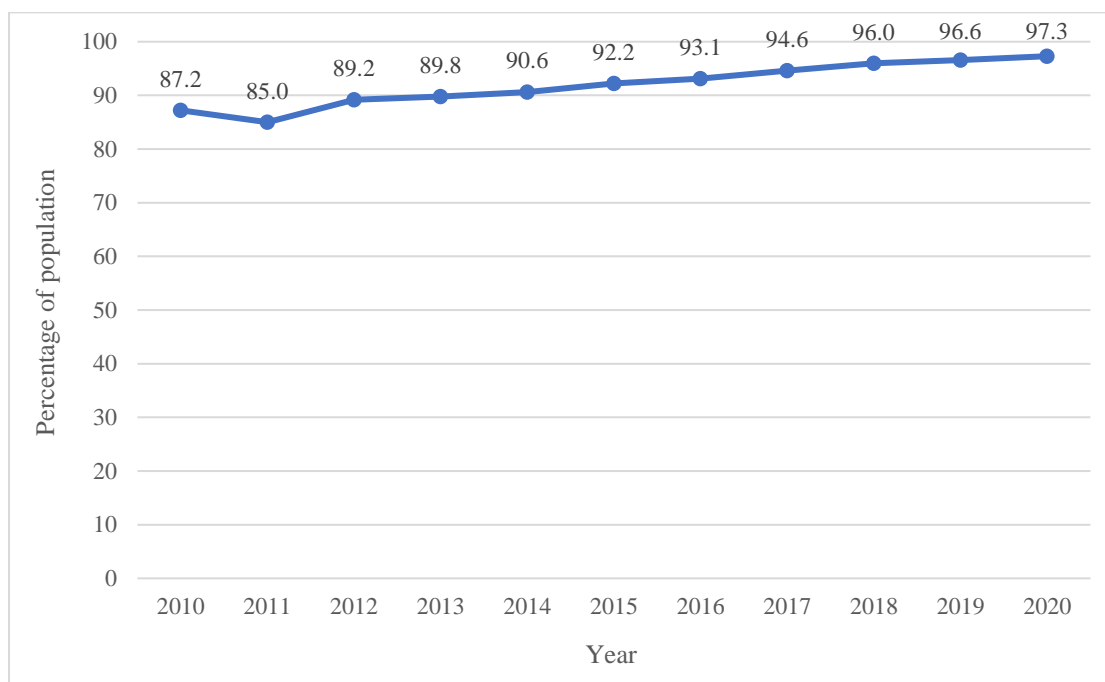
¹ 2022 *Review of Climate Ambition in Asia and the Pacific: Raising NDC Targets with Enhanced Nature-based Solutions* (ST/ESCAP/3053).

II. Progress towards Sustainable Development Goal 7 targets in the Asia-Pacific region

7. The Asia-Pacific region continues to undertake notable efforts on Goal 7 and its targets, in particular on access to electricity. Despite this, countries are falling short on achieving many other aspects of Goal 7. Greater momentum is required to close the gap in universal access to electricity and promote clean cooking fuels and technologies; accelerate the deployment of renewable energy and increase its share in the national energy mix; and scale up energy efficiency and electrification in end uses.

8. Economies in Asia and the Pacific have made significant progress in expanding universal access to electricity, with 97.3 per cent of the regional population enjoying access in 2020, up from 87.2 per cent in 2010 (figure I). That progress stems from the expansion and upgrade of national power grids and the roll-out of decentralized solutions in remote areas. Notable growth has been recorded in countries including Afghanistan, Bangladesh, Cambodia and Timor-Leste. However, in 2020, 125 million people still lacked access to electricity, most of whom were in rural areas and in lower-income countries. In absolute terms, the largest deficits were found in the Democratic People's Republic of Korea, India, Indonesia, Myanmar and Pakistan. As a share of the population, the lowest rates of access (starting with the lowest) were found in the Democratic People's Republic of Korea, Papua New Guinea, Vanuatu, Myanmar and Solomon Islands.

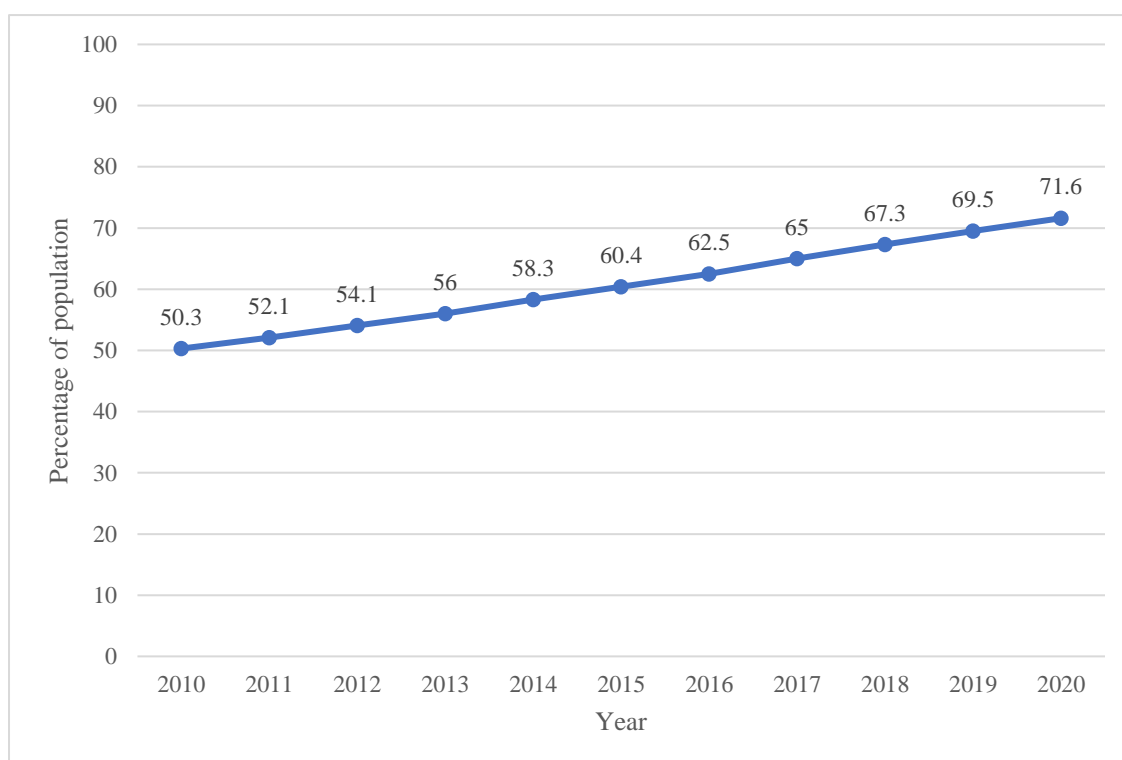
Figure I
Percentage of the population with access to electricity in Asia and the Pacific, 2010–2020



Source: Economic and Social Commission for Asia and the Pacific (ESCAP) calculations based on data from the World Bank Group. Available at <https://asiapacificenergy.org> (accessed on 13 February 2023).

9. The share of the population using clean fuels and technologies for domestic cooking, heating and lighting in Asia and the Pacific grew from 50.3 per cent in 2010 to 71.6 per cent in 2020 (figure II). Despite this, 1.3 billion people in 2020 were still cooking with polluting fuels and technologies in the region. Accordingly, progress remains well short of achieving universal access by 2030. In recent years, the share of people using clean fuels and technologies for domestic cooking, heating and lighting has declined as households face financial and logistical challenges to adopting liquefied petroleum gas, biogas and electric cooking solutions. Even with efforts to better distribute clean cooking equipment, as observed in India, Indonesia and the Philippines, progress is not on track to close the remaining gap by 2030, with low rates of access in some countries, including Bangladesh, the Lao People's Democratic Republic, Papua New Guinea and Timor-Leste, as well as a number of Pacific island States.

Figure II
Percentage of the population with access to clean cooking fuels and technologies in Asia and the Pacific, 2010–2020

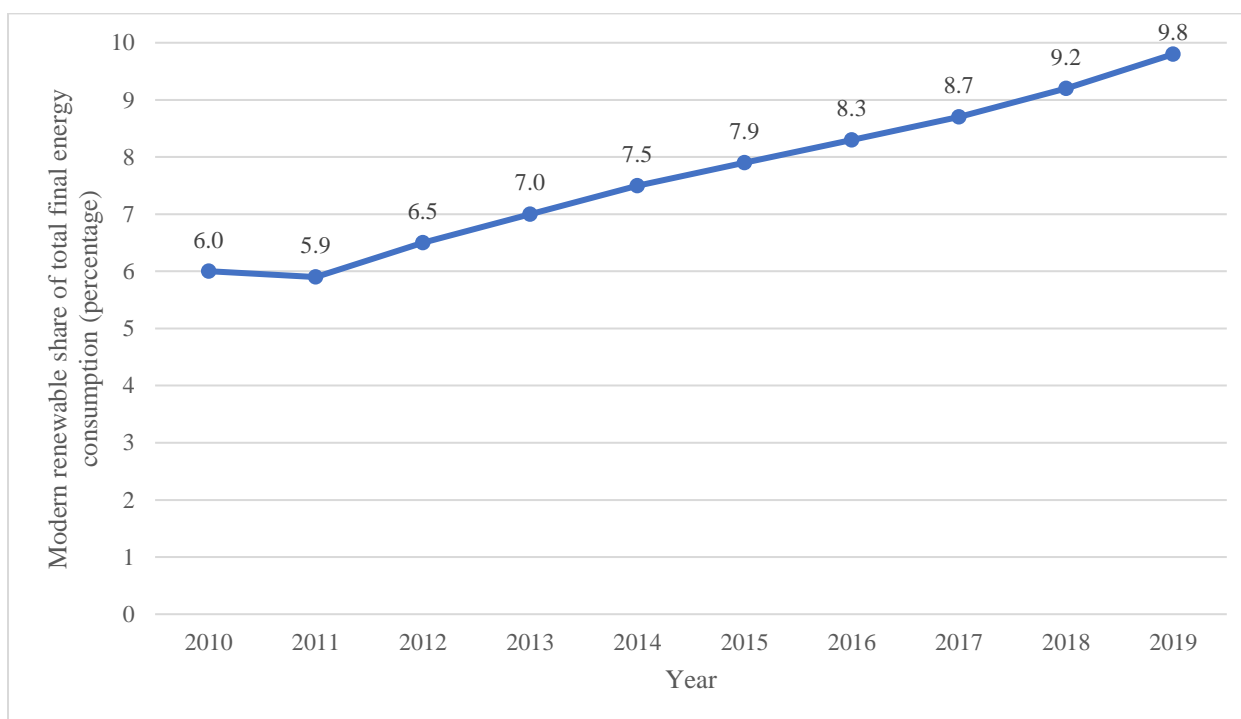


Source: ESCAP calculations based on data from the World Health Organization. Available at <https://asiapacificenergy.org> (accessed on 13 February 2023).

10. In recent years, growth in renewable electricity, in particular, hydropower, wind, solar photovoltaics and biomass, has increased rapidly. As a result, the share of modern renewables (which excludes the use of traditional biomass) in total final energy consumption rose to nearly 10 per cent in 2019, up from 6 per cent in 2010 (figure III). The overall share of total renewable energy, including traditional biomass, in the region's energy mix remained relatively static at around 15 per cent over the same period, reaching 15.4 per cent in 2019. Despite rapid growth in modern forms of renewable energy, a decline in the use of traditional biomass and a strong increase in the demand for energy prevented renewable energy from noticeably growing its share. As the economic situation in some countries has improved dramatically, the deployment of renewable electricity has surged, including in China, India

and Viet Nam. Nevertheless, and despite ambitious targets, many low-income countries have struggled to deploy renewable energy capacity, in part due to developer and financier perceptions of investment risks, as well as low technical capacity and a lack of favourable policy implementation, including with regard to remuneration schemes and grid connectivity.

Figure III
Modern renewable share of total final energy consumption in Asia and the Pacific, 2010–2019



Source: ESCAP calculations based on data from the International Energy Agency (IEA), the United Nations Statistics Division and the International Renewable Energy Agency. Available at <https://asiapacificenergy.org> (accessed on 13 February 2023).

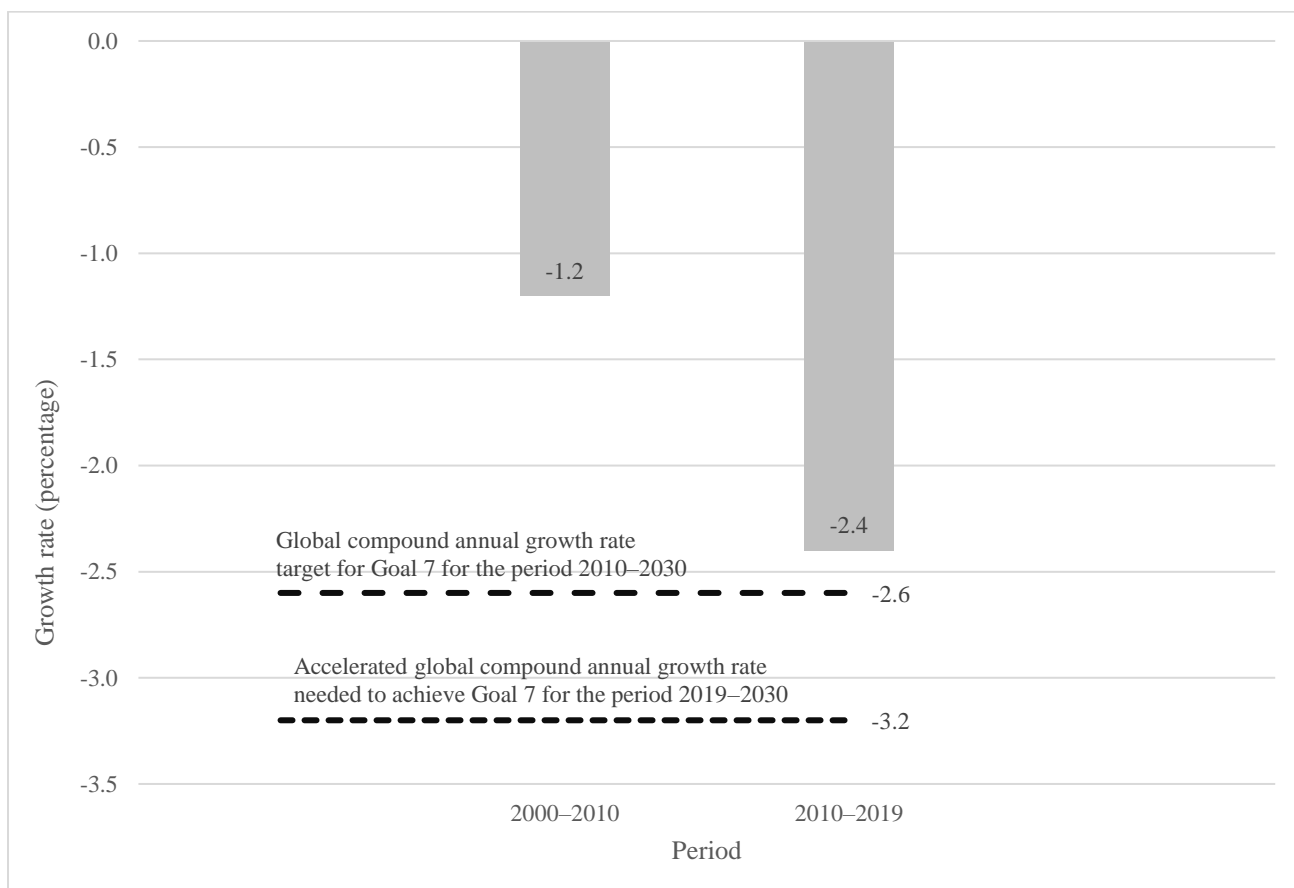
11. Progress in increasing the share of renewables in heating and transport remains insufficient and requires policy attention. Momentum in the indirect uptake of renewables is seen through the electrification of end uses, notably transport. Several countries, including China, India, Indonesia and Malaysia, are moving to increase the use of electric vehicles. These efforts include the rollout of charging infrastructure and the manufacture of electric vehicles, including motorcycles.

12. Ensuring energy efficiency is a key strategy for managing the growth in demand, meeting climate targets and increasing economic efficiency. However, the Asia-Pacific region has not harnessed the full potential of energy efficiency. The region is lagging behind in reaching the target to double the rate of improvement of annual global energy efficiency, measured in terms of energy intensity, which is defined as energy supplied to the economy per unit value of economic output. Given that global progress to date has fallen behind the level needed to reach the Goal 7 target, reaching it will require an average annual accelerated growth rate of 3.2 per cent until 2030.² Energy efficiency in the Asia-Pacific region has been improving, as demonstrated by a decrease in energy intensity; however, the annual rate of improvement in the period

² *The Sustainable Development Goals Report 2022* (United Nations publication, 2022).

2010–2019 was only 2.4 per cent, which is below the existing accelerated Goal 7 target rate (figure IV). Only China, Indonesia and Japan have improved energy efficiency at a rate exceeding the global target. Despite the cost-effectiveness of efficiency applications, the rollout of supportive policy and regulatory frameworks with regard to performance standards, labelling, energy service companies and bulk procurement remains inconsistent, especially in areas where there is rapid growth in demand, such as cooling services and industrial production.

Figure IV
Compound annual growth rates of energy intensity in Asia and the Pacific, 2000–2010 and 2010–2019



Source: ESCAP calculations based on data from IEA and the United Nations Statistics Division. Available at <https://asiapacificenergy.org> (accessed on 13 February 2023).

13. The existing global energy crisis exposes the vulnerability of Asia-Pacific economies to energy price shocks and threatens the welfare of populations. The call for greater momentum in the deployment and availability of sustainable energy comes at a time of increased economic stress among Asia-Pacific economies, including rebounding demand and growing affordability concerns within more limited fiscal spaces. Achieving the Sustainable Development Goals, including Goal 7, requires better regional and global cooperation and support.

III. Key transformations needed to realize Sustainable Development Goal 7 and the transition to net-zero emissions

14. The transition to more resilient and sustainable growth models is critical to helping Asia-Pacific economies to grapple with the challenges of securely and affordably meeting the demand for energy. Meeting ambitious sustainability goals will require a dramatic transformation of energy systems, with efforts across the value chain of clean energy development, including the policy and regulatory enabling environment, public-private engagement, investment and finance, as well as the extraction and use of critical minerals.

A. Improving enabling environments for clean energy development

15. Accelerated clean energy development hinges on the capacity of Governments to signal their long-term commitment to transformation through ambitious energy goals and targets. With regard to nationally determined contributions from the region, renewable energy generation is the most frequently mentioned energy-related climate mitigation measure, followed by multisectoral energy efficiency; efficiency in transport and of buildings; the electrification of transport; and the shift to low- or zero-carbon fuels. Most countries have not publicly put forward viable pathways that align with ambitious decarbonization goals, including limiting global temperature rise to 1.5°C above pre-industrial levels, and meet national development objectives.

16. Comprehensive national planning that includes the power sector, the electrification of end uses, alternative fuels and demand-side measures is needed. Integrating higher shares of renewables requires larger, more responsive and flexible grid systems. Significant investments are needed in the modernization and expansion of national power grids, as well as in complementary technologies such as smart grids and storage systems. Holistic planning that considers the potential demand for and production and transmission of hydrogen can help to optimize energy system development, increase sector coupling and support the decarbonization of hard-to-abate end uses.

17. The economic playing field is often tilted against clean energy investments, due to inadequate pricing of externalities and inefficient fossil fuel subsidies. In addition to rebalancing the energy playing field, the implementation of carbon pricing and the removal of fossil fuel subsidies can have additional benefits in terms of promoting innovation and improving public finances. However, in order to reap those benefits, it is necessary to improve and harmonize regulations across countries and improve the capacities of Governments to implement carbon pricing policies. The harmonization of national carbon markets is a promising way forward in developing effective carbon pricing policies.

18. Governments can make it easier to develop clean energy projects by improving the processes for issuing licences and permits and for land acquisition. Lengthy decision-making processes throughout the clean-energy development cycle increase project costs. Red tape, lack of coordination and slow decision-making processes are harmful to project development, including to the speed at which work can be completed, the cost of the development itself and the cost of financing it. The creation of one-stop shops for services related to project development has helped to accelerate the deployment of clean energy in several markets.

19. Underpinning all these areas, Governments must ensure policy coherence and predictability in order to attract investment. Good governance, especially with regard to political stability, rule of law and the effectiveness of governing bodies, has a substantial impact on risk perceptions and investment protection. Governments in the Asia-Pacific region often face capacity constraints in designing and implementing complex energy system transformations. Engagement within regional and international bodies is essential to enhancing knowledge and domestic capacity for policymaking.

B. Increasing private sector engagement

20. In meeting Goal 7 targets, the private sector is likely to play a major role in project development and provide the majority of investments. In emerging and developing economies, the International Energy Agency (IEA) estimates that, in order to meet ambitious decarbonization goals, private capital would account for nearly 60 per cent of clean energy investment by 2030.³ Governments should reform market structures and ownership rules in a way that enhances private participation and increases competition.

21. Private participation can be greatly enhanced through the design of effective regulatory frameworks to support public-private partnerships in infrastructure development. Examples include the rollout of competitive auctions for renewable power procurement and new ownership and operating models for the development of transmission grids.

22. Technology development and sectoral decarbonization pathways would benefit greatly from increased joint ventures and partnerships between public and private players around research, development and demonstration, especially in areas such as battery storage, low-carbon fuels and the abatement of emission-intensive sectors. Such engagement has the potential to lead to innovation spillover effects and the development of new industries, which can simultaneously support efforts to achieve Goal 7 and national industrial strategies.

C. Mobilizing investment and finance

23. Mobilizing much higher levels of clean energy investment by the private sector hinges on creating pipelines of bankable clean energy projects, diversifying sources of finance and reducing the cost of capital.

24. The development of well-designed commercial arrangements and remuneration schemes, with appropriate risk allocation between public and private actors, is critical to creating profitable clean energy investment opportunities that provide investors with an adequate and reasonable return on capital. The rollout of competitive auction mechanisms with these features has supported utility-scale renewable power investments at a reduced cost in diverse markets including those of Cambodia, India and Kazakhstan. Funding investments at stages in which capital is in particularly short supply, such as early-stage project development, is critical to spurring deployment.

25. As part of risk allocation and management, Governments should make efforts to put State-owned enterprises on a firmer financial footing, especially in cases where they must act as creditworthy purchasers of power or fuels, such as for State-owned utilities or large industrial players.

³ IEA, *World Energy Outlook 2022* (2022).

26. Considering the amount of manufactured goods that are exported from the Asia-Pacific region and the level of the region's investment in its manufacturing industries, making trade and investment more climate-smart is a key approach to decarbonizing industry in the region. There is significant potential to harness foreign direct investment for cleaner products and processes, which to date has been unevenly distributed across the region.

27. Governments can play an important catalytic role and lead by example by directing the investment bodies under their control to reorient their funds towards investment in low-carbon businesses. Catalysing investment also requires a stronger role for international development finance institutions in enhancing project bankability and in helping to manage complex financial transitions, such as the phasing out of coal, and transformations at early stages of technological readiness, such as industrial decarbonization. While much greater capital flows are needed, progress in deploying blended finance mechanisms in the Asia-Pacific region has only been incremental.

28. In many developing countries in the region, there are constraints on the availability of long-term debt and debt financed in the local currency, especially for small-scale investments in efficiency and distributed solutions. Improvements are required in the capacity of domestic banking sectors and financial regulators to evaluate clean energy opportunities and integrate sustainability standards within standard lending and investing practices and norms.

29. International capital markets represent potentially large pools of low-cost capital for clean energy projects. Sustainable funding instruments are attracting a great deal of attention from investors looking to green their portfolios, and sustainable debt issuance is now valued at well over \$1 trillion globally. However, the ability of many developing Asia-Pacific economies to tap into these sources remains limited. Improved domestic capacity and more robust and better harmonized frameworks for sustainable finance, including standards with regard to instruments and taxonomies to help guide capital allocation, are required.

30. Governments also need to consider enabling private investment to play a role in sectors that are traditionally dominated by public spending. An example is the financing of grids. In Asia and the Pacific, some countries have successfully deployed private finance to increase grid investment, but this has been the exception, not the rule. Understanding the various models for enabling the use of private finance in grid investment is key if Governments are to scale up the infrastructure investments required to successfully integrate larger shares of variable renewable energy resources.

31. Other sources of finance for grid build-out can also play a role. The Climate Compatible Growth initiative estimates that only 40 per cent of the required grid investments in emerging markets and developing economies are eligible for private finance. Climate finance, on the other hand, is entirely closed off to grid investments. Governments should work with the financial sector to develop and implement new and innovative methods of assessing the climate impact of grid investments, as that would provide an avenue to unlocking climate finance for grids.

D. Using connectivity as a tool for supporting the energy transition

32. Energy connectivity is a key tool for enabling the secure, affordable and sustainable development of power systems. Connectivity supports the integration of a variety of renewable energy resources and enables access to a more diverse and less costly set of resources. This strategy is widely recognized, including by member States, which in 2021 endorsed the Regional Road Map on Power System Connectivity: Promoting Cross-border Electricity Connectivity for Sustainable Development.

33. The opportunity for increased power system connectivity in the Asia-Pacific region is significant, and there are numerous examples across the region of efforts to increase cross-border power system connectivity. These include the Association of Southeast Asian Nations Power Grid, the South Asia Regional Energy Partnership and the North-East Asia Power System Interconnection project. These efforts, however, remain primarily in the development stage. Cross-border power system infrastructure continues to be developed on a purely bilateral basis. While there are some pilot projects to develop multilateral power trading, in Asia and the Pacific there are no regional power pools or other regional power market structures, in contrast to other parts of the world.

34. Cross-border connectivity efforts are complex endeavours that can take many years to fully develop, with even mature efforts outside the region continuing to evolve in response to technological and market changes. As a starting point, though, political support for connectivity initiatives is a fundamental prerequisite for driving collaboration and ensuring that sufficient resources can be brought to bear to develop regional power system master plans and supportive institutional arrangements. While cross-border power system connectivity initiatives can take many forms, successful efforts are generally developed in a stepwise process based on voluntary principles, which seek to harmonize rules and regulations, develop necessary infrastructure and enable cross-border power trade.

35. Governments should take steps to increase regional cooperation on connectivity initiatives by creating harmonized regulations and operational policies that allow for the integration of power systems. To that end, Governments should ensure that there are appropriate subregional and regional institutions to support the development and harmonization of regulatory frameworks and that regulators have mandates to participate in regional initiatives.

36. Governments should support efforts to create subregional and regional grid development plans, as these will act as a guiding principle for national and regional grid development efforts. In order to establish coordinated grid planning, it is imperative that Governments support efforts to enable data sharing and transparency, as planning activities must be based on credible and timely national data. Access to these data can also improve cross-border power trade and help countries align connectivity initiatives with domestic policy goals.

E. Managing access to critical minerals to enable the energy transition

37. Many clean energy technologies that underpin the low-carbon energy transition, such as renewable energy generation, electric vehicles and energy storage systems, require considerably more minerals than fossil fuel-based technologies. For example, solar photovoltaics and wind power require up to 40 times more copper and 14 times more iron per unit of generation than fossil

fuel generation on a life-cycle basis.⁴ As a result, as the transition towards a clean energy future deepens, the energy sector is transitioning from a fossil-intensive to a mineral-intensive sector. Critical minerals will therefore be indispensable for global development in the coming decades.

38. There is no single definition for which minerals and other materials qualify as critical raw materials, but broadly speaking they include any raw materials considered to have a high level of economic importance and the potential for supply risks. The dramatic increase in the demand for critical raw materials raises concerns regarding security of supply that are similar to those the extractive industries have experienced in the past. Material intensity is expected to only increase with the level of decarbonization. Significant investments are needed to ensure a sufficient supply of critical minerals that can reduce energy security concerns and lower prices.

39. Asia and the Pacific will play an important role in providing the critical minerals required for facilitating the transition, which will pose both opportunities and challenges. The region is well placed to meet the increased demand for critical raw materials, boasting around one fourth of the world's total reserves of mineral resources. These critical minerals, however, are more concentrated in the areas of production and processing, and have less transparent markets than fossil fuels. As no country possesses sufficient quantities of all the critical raw materials required for the energy transition, and given that countries occupy different positions in the clean energy supply chain, trade is necessary. Ensuring the supply of critical minerals and the resilience of the supply chain is essential to the economic prosperity of countries in the Asia-Pacific region.

40. Although developing critical raw materials creates significant economic opportunities, their extraction and processing – as for other extractive industry products – may lead to additional environmental, social and governance challenges. It is necessary to adopt a holistic, whole life-cycle approach, including resource revenue management, transparent value chains and circularity, to align the extraction of critical minerals with sustainable development, and to prevent resource wealth from undermining economic stability. Through effective resource management, Governments can align critical mineral extraction with economic development by investing in long-term savings, infrastructure and economic diversification efforts.

41. Governments should support efforts to improve legal and regulatory practices, establish inclusive social management practices and strengthen regional coordination. IEA estimates that the expected supply from existing mines and projects under construction can meet only 50 per cent of the projected lithium and cobalt requirements and 80 per cent of copper needs by 2030.⁵ In order to meet growing demand, therefore, new mines will need to be developed. It is imperative that overarching frameworks guiding resource management be established, and that capacity among Governments be improved to ensure these frameworks can be implemented and enforced.

⁴ E.G. Hertwich and others, “Integrated life-cycle assessment of electricity-supply scenarios confirms global environmental benefit of low-carbon technologies”, *Proceedings of the National Academy of Sciences*, vol. 112, No. 20 (2015).

⁵ IEA, *The Role of Critical Minerals in Clean Energy Transitions* (2021).

42. Increased research and development efforts in technological innovation, both on the demand and production sides, can lead to a more efficient use of materials, allow for material substitution and unlock significant new supplies. Although key to the development of new low-carbon technology, the critical mineral extractive industries must also undergo a deep transformation to mitigate emissions and promote circularity.

43. Three priority actions can help align the efforts of the diverse range of stakeholders in this sector with sustainable development: establish common operational rules for markets, green finance and standards; share knowledge and experiences among regions and countries; and create regional and international coordination mechanisms and institutions.

IV. Ensuring a just energy transition

44. In order for the Asia-Pacific region to get on track to meet Goal 7 targets and net-zero goals, emissions need to be reduced by 45 per cent from 2010 levels by 2030. However, under existing climate policies, regional emissions are projected to be 60 per cent higher in 2030.⁶ As discussed above, achieving these reductions depends on the widespread transformation of energy systems.

45. At the same time, as nations scale up their use of clean energy, they must consider the steps needed to phase out existing fossil fuel infrastructure. In moving away from fossil fuels, efforts are required to ensure transitions are just and people-centred, with coordinated, long-term engagement for affected workers and communities, both within and across countries and regions.

46. A growing divide exists between poorer and richer countries in terms of per capita installed clean energy capacity. While high- and upper-middle-income countries in the Asia-Pacific region have collectively seen installed renewable power capacity more than triple since 2010, the rate of growth in low- and lower-middle-income countries has made virtually no progress on a per capita basis.

47. Unchecked climate change exacerbates that divide, with impacts set to disproportionately affect the most vulnerable parts of society. Based on existing trajectories, countries in the region face heightened risks in the decades ahead, including food and water insecurity, urban infrastructure and settlement damage from flooding, biodiversity loss and declines in coastal fisheries.⁷

48. In contrast, investing in climate-resilient infrastructure and clean energy supply chains can improve livelihoods, create more job opportunities and support more sustainable growth models. For example, the International Renewable Energy Agency projected that, by using a more ambitious decarbonization pathway with the aim of limiting global warming to 1.5°C above pre-industrial levels, the global gross domestic product would increase

⁶ *2022 Review of Climate Ambition in Asia and the Pacific*.

⁷ Intergovernmental Panel on Climate Change, *Climate Change 2022: Impacts, Adaptation and Vulnerability – Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, H.-O. Pörtner and others, eds. (Cambridge, United Kingdom of Great Britain and Northern Ireland, Cambridge University Press, 2022), p. 17.

by up to 2.3 per cent more than it would under the energy plans prevailing in 2020.⁸

49. Major financing deals such as the Just Energy Transition Partnership have the potential to ramp up renewable energy deployment and energy efficiency while phasing out coal power plants, many before the end of their useful life. In some countries, including Indonesia and Viet Nam, recently announced deals under the Partnership offer the prospect of catalysing transitions by using international blended finance to address the multifaceted nature of the phaseout of coal, including reinforced support for vulnerable groups.

A. Making transitions affordable for all

50. As countries scale up clean energy, it is important to ensure the affordability of energy transitions in terms of household energy bills and income. However, the surge in fossil fuel and electricity prices experienced across the region in 2022 has placed pressure on consumer finances. According to IEA, households around the world typically spend about 7 per cent of their incomes on energy; however, that figure is often higher for poorer households, even as they consume less energy than wealthier ones.⁹

51. Expanding energy generation from renewables offers the most affordable option for new power generation capacity in many contexts. Deployment of cost-effective measures for energy efficiency and electrification can further help to keep energy bills manageable and shield consumers from energy price shocks.

52. Synergies between various Sustainable Development Goals should also be taken into account in planning and policy development. As grids are expanded and modernized to accommodate higher shares of renewables, socioeconomic benefits for businesses and households can be realized through greater power supply availability and reliability. As opportunities to transition away from traditional fuels to electric cooking and heating increase, they will contribute to improving indoor air quality and reducing adverse health impacts.

B. Harnessing the employment benefits of shifting to clean energy

53. Actions taken by Asia-Pacific countries to transform their energy systems generate multiple benefits, including the creation of new industries and new jobs in the field of clean energy. For example, analysis by the International Renewable Energy Agency demonstrates that South-East Asian countries are becoming major solar photovoltaic manufacturing hubs and biofuel producers. Under a net-zero emissions pathway, IEA projects that almost 40 million new jobs in clean energy supply chains would be created globally by 2030, far exceeding job losses in fossil fuel-related industries.¹⁰

54. Expanding jobs along the value chain of clean energy, from technology manufacturing to project development, requires a comprehensive approach to the deployment and integration of clean energy technologies; industrial

⁸ International Renewable Energy Agency, *World Energy Transition Outlook 2022: 1.5°C Pathway* (Abu Dhabi, 2022).

⁹ IEA, *World Energy Outlook 2022*, p. 195.

¹⁰ *Ibid.*, p. 122.

policies, education and skills training; and community and regional economic development measures.

C. Supporting workers and communities affected by transitions

55. Clean energy transitions are marked by a structural change in which jobs in legacy industries are replaced by those in new sectors. In several Asia-Pacific countries, fossil fuel-related industries have emerged as major sources of employment. Some communities have developed exclusively around those industries, such as coal mining. Policies are required to facilitate the transition while cushioning the impact on vulnerable groups to ensure a just transition.

56. Governments can support fossil fuel workers and communities affected by clean energy transitions through the provision of reskilling and retraining; planning and activities for local economic development and diversification; and measures for environmental rehabilitation of closed mines and infrastructure to make them fit for other purposes. Such support is most effective as part of long-term, integrated strategies to help regions and communities with legacy economies to transition.

V. Issues for consideration by the Commission

57. The present document contains several priority areas for Governments to consider in accelerating the energy transition in line with climate ambitions and the other Sustainable Development Goals.

58. Concerted efforts are needed across almost all targets of Goal 7 if they are to be achieved by 2030. At the same time, the risks posed by the enormous demand for the critical raw materials necessary to underpin the energy transition must be recognized. Measures must be taken by governments to mitigate these risks by securing supplies, accessing new resources, substituting materials and adopting circularity in material use.

59. The Third Asian and Pacific Energy Forum, to be held from 18 to 20 October 2023, will provide an opportunity to review the progress made towards Goal 7. It will also provide a platform for member States to engage in high-level deliberations on how to guide the energy transition in the region, while further developing the regional energy agenda.

60. The Economic and Social Commission for Asia and the Pacific may wish to review the findings and recommendations contained in the present document and provide guidance on the future work of the secretariat.