

Economic and Social Commission for Asia and the Pacific

Seventy-third session

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Item 3 (j) of the provisional agenda*

**Review of issues pertinent to the subsidiary structure
of the Commission, including the work of the regional
institutions: energy**

Status of the implementation of Sustainable Development Goal 7 in Asia and the Pacific

Note by the secretariat**

Summary

The General Assembly adopted resolution 70/1 in 2015, entitled “Transforming our world: the 2030 Agenda for Sustainable Development”, including 17 Sustainable Development Goals. Sustainable Development Goal 7 aims to ensure access to affordable, reliable, sustainable and modern energy for all with three targets: to ensure universal access to affordable, reliable and modern energy services (target 7.1), to increase substantially the share of renewable energy in the global energy mix (target 7.2) and to double the global rate of improvement in energy efficiency (target 7.3) by 2030.

As acknowledged by General Assembly resolution 70/1, work needs to be undertaken to establish baseline data where these are not yet available. The list of indicators for Sustainable Development Goal 7 that was agreed upon by the Statistical Commission in March 2016 will be subject to refinement and improvement as methods and data availability improve.

This document was originally presented to the Committee on Energy at its first session (Bangkok, 17-19 January 2017). The current version was developed with updated analysis based on selected indicators for Sustainable Development Goal 7 with the latest available data to highlight some critical gaps and challenges in the Asia-Pacific region. It provides information related to the progress of member States in pursuing the three targets and identifies some common challenges in aligning national policies with efforts to attain Sustainable Development Goal 7 at the regional and global level.

I. Introduction

1. In its resolution 70/1, entitled “Transforming our world: the 2030 Agenda for Sustainable Development”, which was adopted at the United Nations summit for the adoption of the post-2015 development agenda on 25 September 2015, the General Assembly declared 17 Sustainable Development Goals, including a stand-alone goal directly related to energy, Goal 7 (Ensure access to affordable, reliable, sustainable and modern energy for all). The targets of Goal 7 – by 2030, to ensure universal access to

* E/ESCAP/73/L.1.

** The present report is being issued without formal editing.

affordable, reliable and modern energy services (target 7.1), to increase substantially the share of renewable energy in the global energy mix (target 7.2) and to double the global rate of improvement in energy efficiency (target 7.3) – are in line with targets of the Secretary-General’s Sustainable Energy for All initiative, launched in 2011, and are direct successors to that initiative.

2. In its resolution 70/1, the General Assembly requested that the Goals and targets be followed up and reviewed using a set of global indicators. The global indicator framework was developed by the Statistical Commission’s Inter-Agency and Expert Group on Sustainable Development Goal Indicators and agreed to as a practical starting point by the Statistical Commission at its forty-seventh session, in March 2016. The Statistical Commission emphasized that the list of indicators would be subject to refinement and improvement as methods and data availability improve. A complete list of the indicators for Goal 7 is given in the annex to the present note.

3. Member States committed to providing for systematic follow-up and review of the implementation of the 2030 Agenda at the national, regional and global levels, and agreed that the global indicators would be complemented by indicators at the regional and national levels to be developed by member States. Regional mechanisms, with the support of the regional commissions and other regional organizations, will play a significant role in facilitating this process, taking into account regional priorities and strengthening the link between the national and global levels.

4. While the 2030 Agenda targets are defined as aspirational and global, each country sets its own national targets guided by the global level of ambition but taking into account national circumstances. As acknowledged by member States,¹ work needs to be undertaken to establish baseline data where these are not yet available. In this context, one outcome of the Sustainable Energy for All initiative is the Global Tracking Framework,² established in 2012 in order to set baseline energy data and provide regular biannual updates on trends in energy access, renewable energy and energy efficiency.³ The Global Tracking Framework developed a series of indicators to measure the three objectives of the Sustainable Energy for All initiative, with which those proposed to measure the Sustainable Development Goal 7 targets are closely aligned. Two editions of the Global Tracking Framework report have been published so far. The third edition of the report was presented at the Sustainable Energy for All Forum on 3 April 2017 in New York, it was prepared with active involvement of the United Nations Regional Commissions.

5. The present note provides information related to the progress of member States in pursuing the Sustainable Development Goal 7 targets and identifies some common challenges in aligning national policies with efforts

¹ General Assembly resolution 70/1, para. 57.

² A consortium of agencies, co-led by the World Bank, the International Energy Agency and the Energy Sector Management Assistance Programme, the Global Tracking Framework is a global data platform and monitoring system designed to allow rigorous and transparent monitoring of progress towards the three major objectives of the Sustainable Energy for All initiative by 2030. As of 2016, the consortium also includes the five regional commissions (the Economic Commission for Latin America and the Caribbean, the Economic and Social Commission for Asia and the Pacific, the Economic and Social Commission for Western Asia, the Economic Commission for Africa and the Economic Commission for Europe).

³ A/71/220, para. 2.

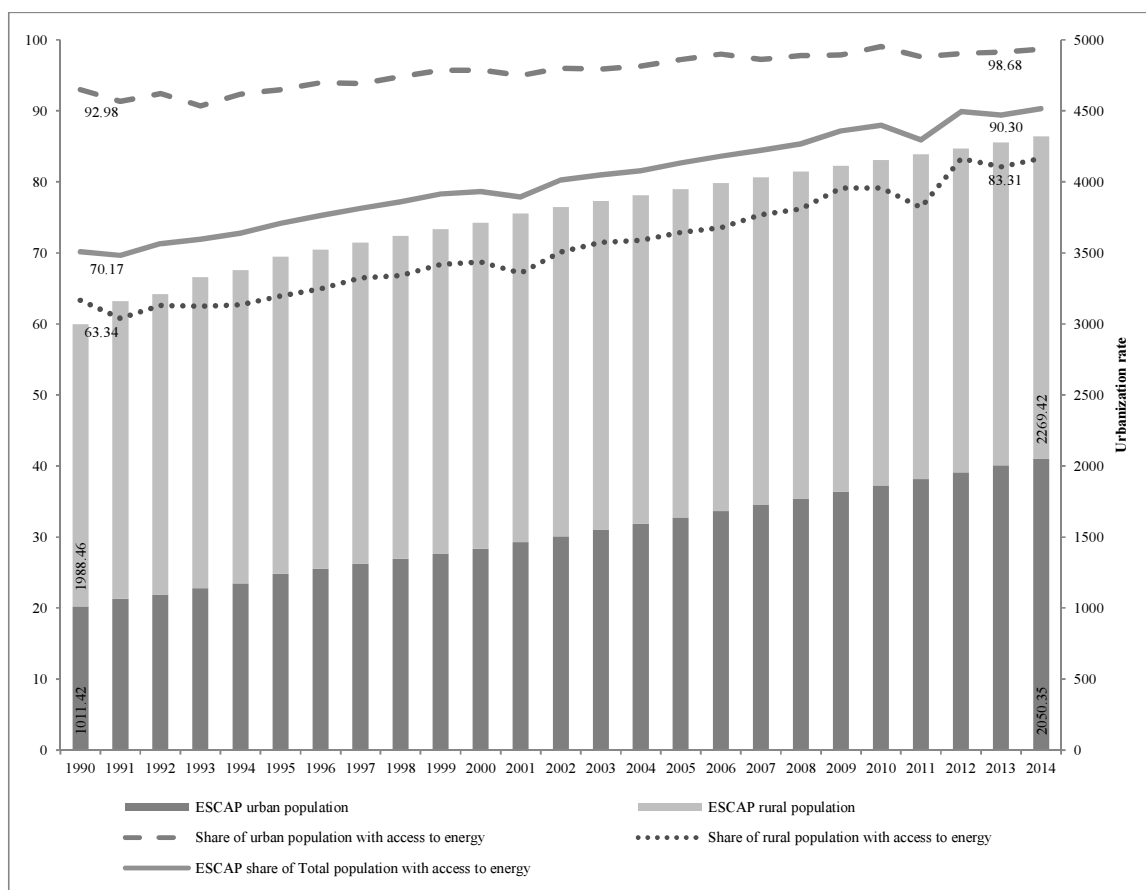
to attain Goal 7. This information is based on the latest available data as of March 2017 on selected indicators from the global Sustainable Development Goals indicator framework. The indicators presented are those for which there are sufficient data available to provide an overview at the regional and global levels.

II. Access to energy services is still a major challenge for many countries in Asia and the Pacific

6. Sustainable Development Goal target 7.1 is to ensure universal access to affordable, reliable and modern energy services by 2030. The rate of access can be assessed using the following descriptors: electrification rate, total population without access to electricity and percentage of total population relying on clean fuels.

7. In 2014, the average total electrification rate reached 90 per cent in the Asia-Pacific region, up from 75 per cent in 1990, as shown in figure I, along with decomposition of the rural and urban electrification rates in Asia-Pacific in 1990-2014.

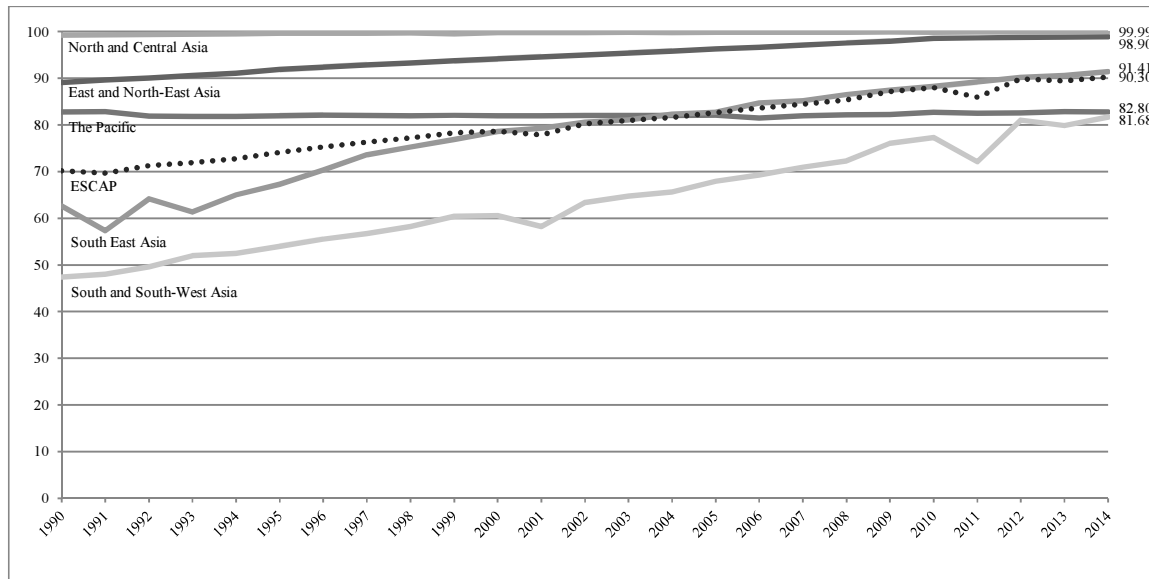
Figure I
Proportion of total, urban and rural population with access to energy in the Asia-Pacific region, population growth and urbanization rate, 1990-2014 (Percentage)



Source: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

8. Subregional trends in dynamics of population with access to energy services is shown in figure II.

Figure II
Change in the proportion of population with access to energy services by ESCAP subregions, 1990-2014, (Percentage)

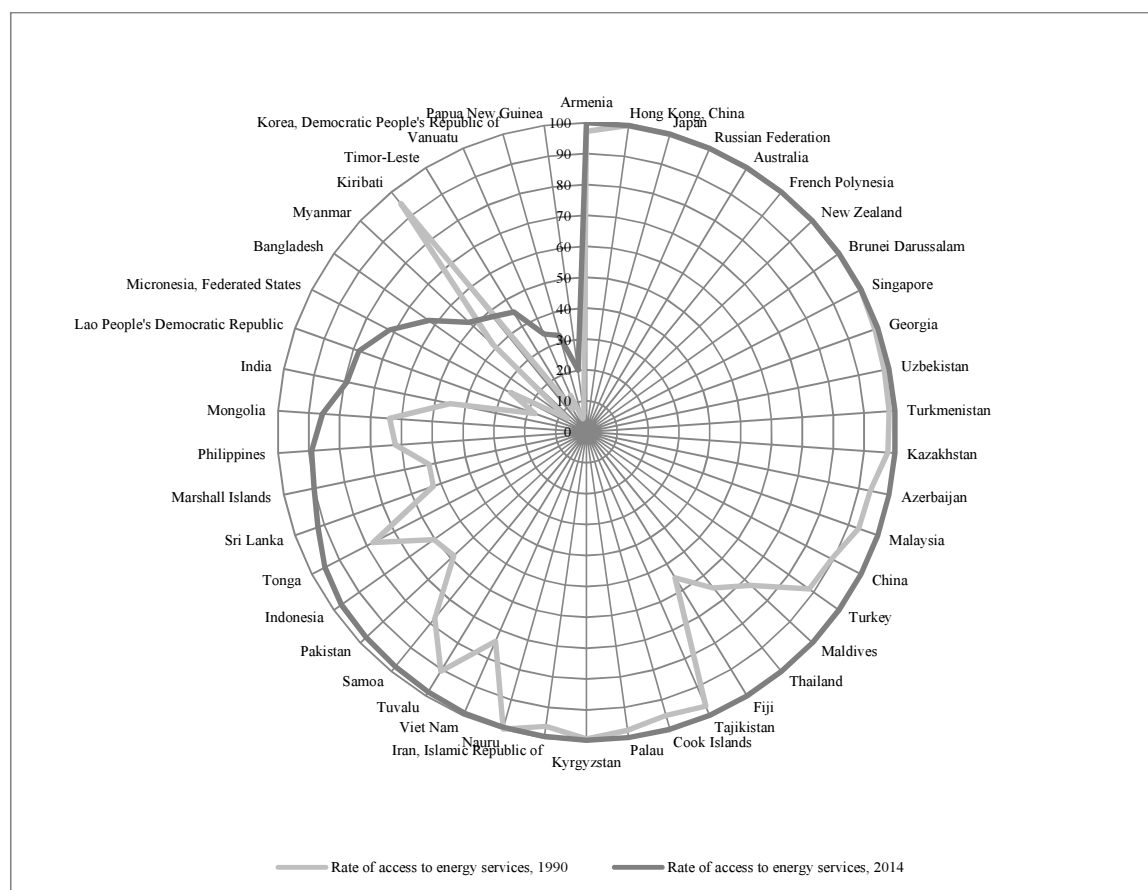


Source: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

9. Since 1990, a number of positive trends towards achievement of Sustainable Development Goal target 7.1 can be underscored in each of the subregions. Despite significant sustained growth of total population (from 3,173 million in 1990 to 4,345 million in 2014) the share of population with access to electricity grew from 70.2 per cent to 90.3 per cent, respectively.

10. Yet 421.4 million people in the region remain without access to electricity, of which the majority lives in India (269.8 million); Bangladesh (59.8 million); Myanmar (25.7 million); Democratic People's Republic of Korea (16.9 million); and the Philippines (10.8 million). The 1990/2014 by-country dynamics of proportion of population with access to electricity is presented in figure III.

Figure III
Proportion of population with access to electricity (percentage), 1990 and 2014, by country



Source: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

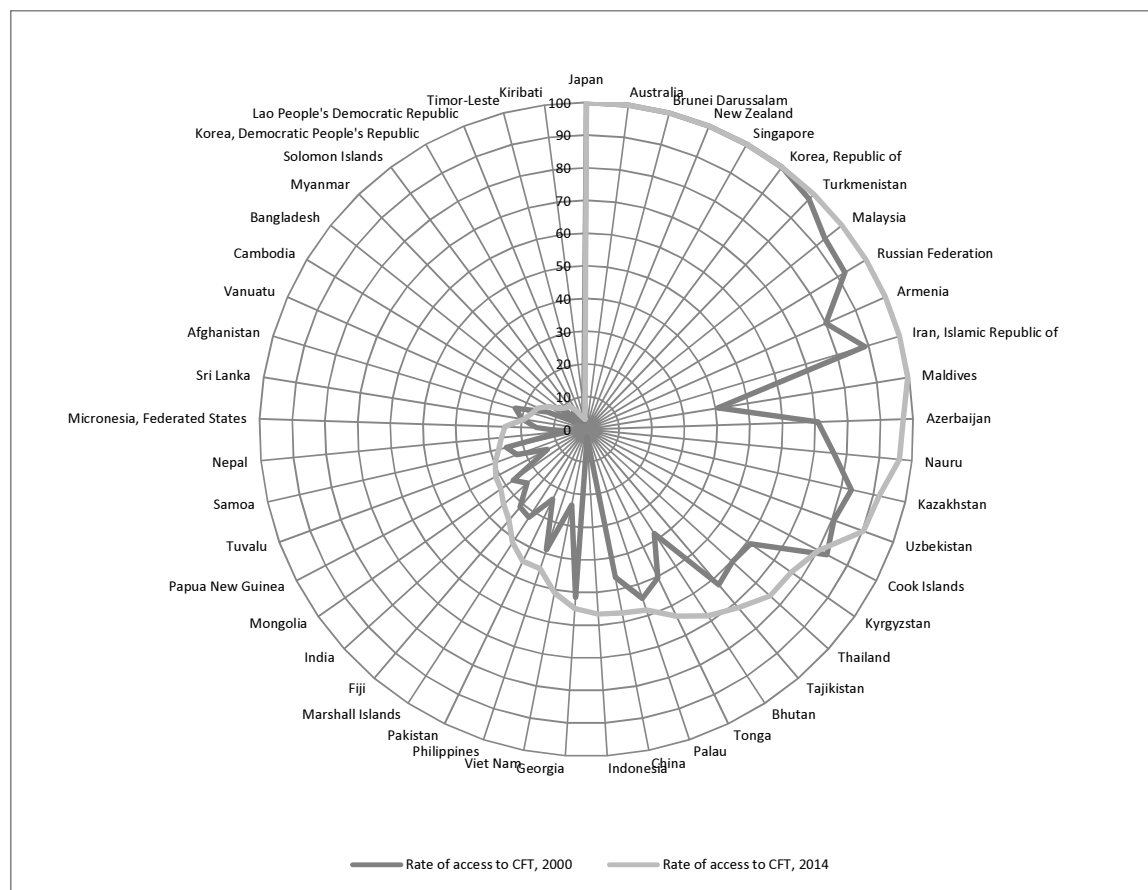
Note: No data for American Samoa. No 1990 data for New Caledonia; Korea, Republic of; and Macao, China (as of 2014, universal access to electricity is provided). No 1990 data for Afghanistan (as of 2014, 10% of population (3.32 million) do not have access to electricity); Nepal (as of 2014, 15% (4.25 million) do not have access to electricity); Cambodia (as of 2014, 44% (6.73 million) do not have access to electricity); and Solomon Islands (as of 2014, 65% (0.37 million) do not have access to electricity).

11. The following 31 ESCAP member States and associate members have already reached universal access to electricity: Armenia; Australia; Azerbaijan; Bhutan; Brunei Darussalam; China; Cook Islands; Fiji; French Polynesia; Georgia; Hong Kong, China; Iran (Islamic Republic of); Japan; Kazakhstan; Korea, Republic of; Kyrgyzstan; Macao, China; Malaysia; Maldives; Nauru; New Caledonia; New Zealand; Palau; the Russian Federation; Singapore; Tajikistan; Thailand; Turkey; Turkmenistan; Uzbekistan; and Viet Nam. In the other countries, to varying extents, either time is needed to finalize the electrification process, or the consequent steps need to be taken towards provision of universal access.

12. A similar trend is reported in the region for the indicator of access to clean fuels and technologies.⁴ In compliance with the new methodology, the 2000/2014 change of proportion of population with primary reliance on clean fuels and technologies is shown in figure IV.

Figure IV

Proportion of population with primary reliance on clean fuels and technologies (percentage), 2000 and 2014, by country



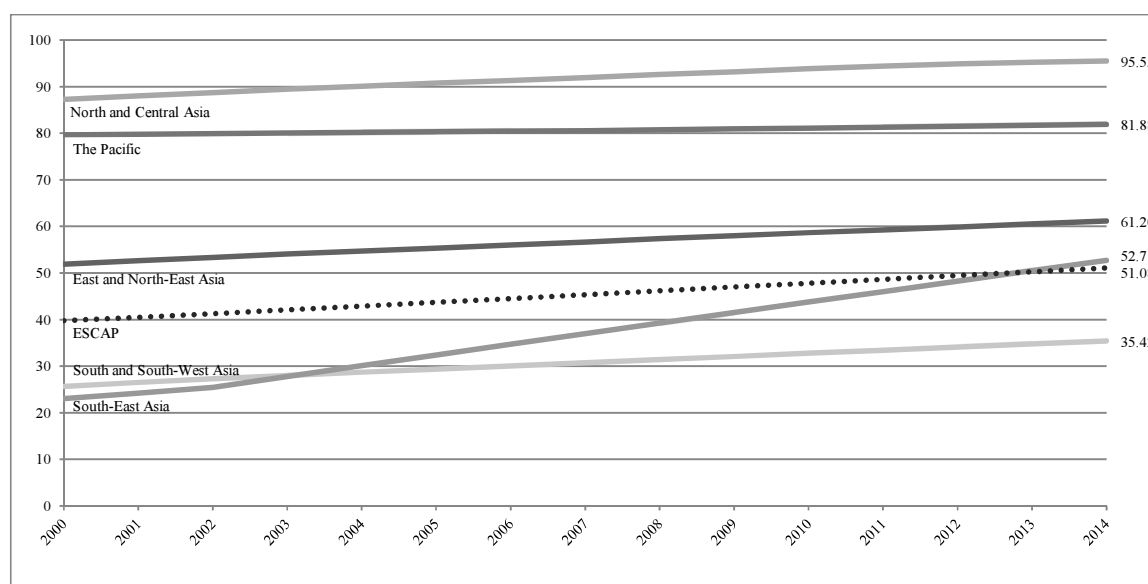
Sources: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

Note: No data for American Samoa; French Polynesia; Hong Kong, China; Macao, China; New Caledonia; and Turkey.

13. Subregional trend in dynamics of population with access to clean fuels and technologies is shown in figure V.

⁴ Agreement on transformation of indicator “access to non-solid fuels” to “reliance on clean fuels” (or “access to clean fuels and technologies”), which captures recommendations by the World Health Organization to ensure health benefits. See <http://unstats.un.org/sdgs/files/metadata-compilation/Metadata-Goal-7.pdf>.

Figure V
Change in the proportion of population with access to clean fuels and technologies by ESCAP subregions, 1990-2014, (Percentage)



Source: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

14. As of 2014, the situation with regard to reliance on clean fuels and technologies by ESCAP subregions, was as follows: North and Central Asia achieved 95.6%,⁵ the Pacific – 81.9%,⁶ East and North-East Asia – 61.2%,⁷ South-East Asia – 52.7%⁸ and South and South-West Asia – 35.4%.⁹ Yet significant variations among the countries within each of the subregions should be underscored. Population relying primarily on clean fuels and technologies in Asia and the Pacific was reported 51.2% in 2014, compared to 39.8% in 2000.

15. In the past, the global attention focused more on access to electricity rather than on clean cooking and heating energies. As a result, access to clean fuels and technologies is more problematic than access to electricity. There are more people in the Asia-Pacific region without access to cooking energy services than those without electricity services: as of 2014, total population without access to clean fuels and technologies accounted for 2,084 million.¹⁰

⁵ Armenia; Azerbaijan; Georgia; Kazakhstan; Kyrgyzstan; Russian Federation; Tajikistan; Turkmenistan; and Uzbekistan.

⁶ Australia; Fiji; Kiribati; Marshall Islands; Micronesia, Federated States; Nauru; New Zealand; Palau; Papua New Guinea; Samoa; Solomon Islands; Tonga; Tuvalu; and Vanuatu.

⁷ China; Korea, Democratic People's Republic; Japan; Mongolia; and Korea, Republic of.

⁸ Brunei Darussalam; Cambodia; Indonesia; Lao People's Democratic Republic; Malaysia; Myanmar; Philippines; Singapore; Thailand; Timor-Leste; and Viet Nam.

⁹ Afghanistan; Bangladesh; Bhutan; India; Iran, Islamic Republic of; Maldives; Nepal; Pakistan; Sri Lanka; and Turkey.

¹⁰ This value does not capture the following countries: American Samoa; French Polynesia; Hong Kong, China; Macao, China; New Caledonia; Turkey.

III. Share of renewables in the energy mix is declining against continued increase in energy production and consumption

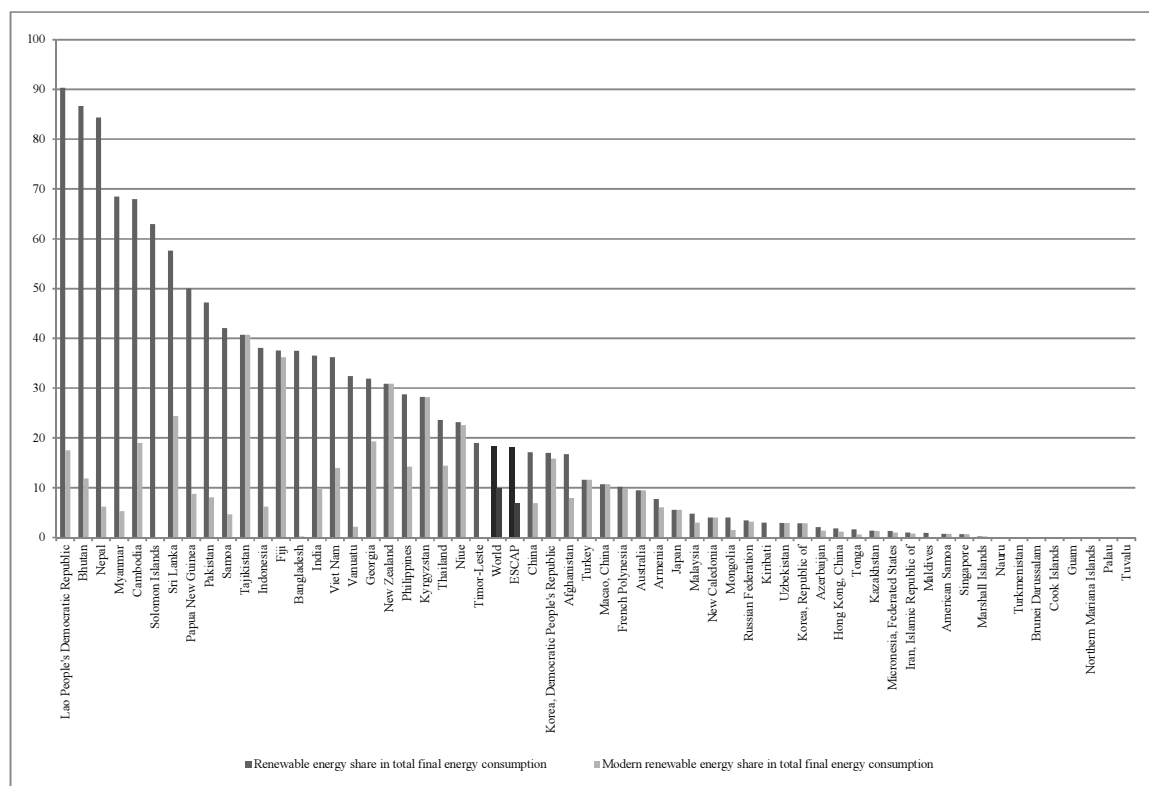
16. Sustainable Development Goal target 7.2 is, by 2030, to increase substantially the share of renewable energy in the global energy mix. Developments in this direction can be monitored by evaluating changes in the share of renewable energy in countries' total final energy consumption.

17. The Asia-Pacific region is characterized by a long-term stable growth in energy consumption that is mostly driven by developing economies.

18. The countries of the region vary substantially in terms of renewable energy use, for example in the Lao People's Democratic Republic renewables have a share of 90.3% in total final energy consumption. In Brunei Darussalam; Cook Islands; Guam; Northern Mariana Islands; Palau; Turkmenistan; and Tuvalu with a marginal share in the total final energy consumption. As of 2014, only American Samoa; Brunei Darussalam; French Polynesia; Kazakhstan; Kyrgyzstan; Macao, China; Marshall Islands; Nauru; New Caledonia; Niue; Tajikistan; and Uzbekistan had the share of renewables, which are almost completely of modern nature. At the same time, in terms of renewables Bangladesh; Cambodia; Indonesia; Kiribati; Maldives; Myanmar; Nepal; Solomon Islands; and Timor-Leste either mostly or entirely relied on traditional solid biofuels. As of 2014, the shares of total renewables and modern renewables (those excluding traditional biomass) in total final energy consumption were as shown in Figure VI.

Figure VI

Renewable energy share and modern renewable energy share in member States and associate members (Percentage)



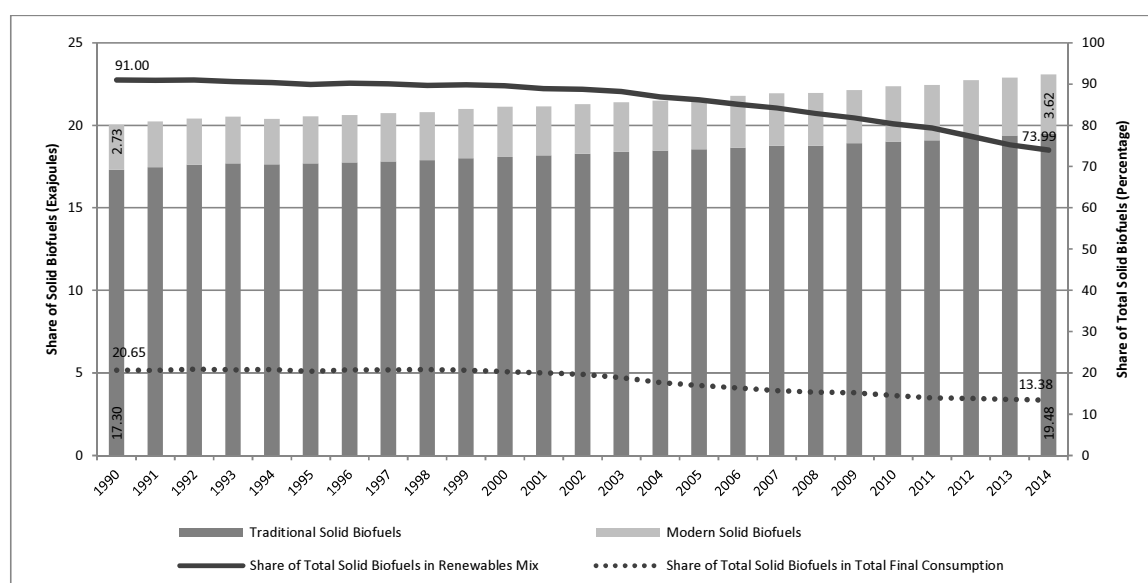
Source: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

19. Several countries remain heavily reliant on particular sources of energy in their renewable energy mix. In particular, in the following countries renewable energy mix is dominated (74-100 per cent) by solid biofuels: Bangladesh; Bhutan; Cambodia; Fiji; India; Indonesia; Kiribati; Lao People's Democratic Republic; Maldives; Micronesia, Federated States of; Myanmar; Nepal; Pakistan; Papua New Guinea; Philippines; Samoa; Solomon Islands; Sri Lanka; Thailand; Timor-Leste; Turkmenistan; Vanuatu; and Viet Nam. Hydropower is a major part of renewables (75-100 per cent) in Armenia; French Polynesia; Kazakhstan; Kyrgyzstan; New Caledonia; the Russian Federation; Tajikistan; and Uzbekistan. Solar energy is the only renewable energy source (almost 100 percent in the renewable energy mix) in American Samoa; Brunei Darussalam; Marshall Islands; Nauru; and Niue. While several countries have a relatively diversified overall energy portfolio, others are limited to use of a particular single source of energy that is abundantly available in their localities.

20. A change in the structure of solid biofuels (that consist of traditional and modern solid biofuels) in Asia and the Pacific region should be highlighted. Thus, traditional solid biofuels have been demonstrating a steady decrease within 1990-2014, while their shares in both renewables mix and total final consumption are also declining. These dynamics is shown in figure VII.

Figure VII

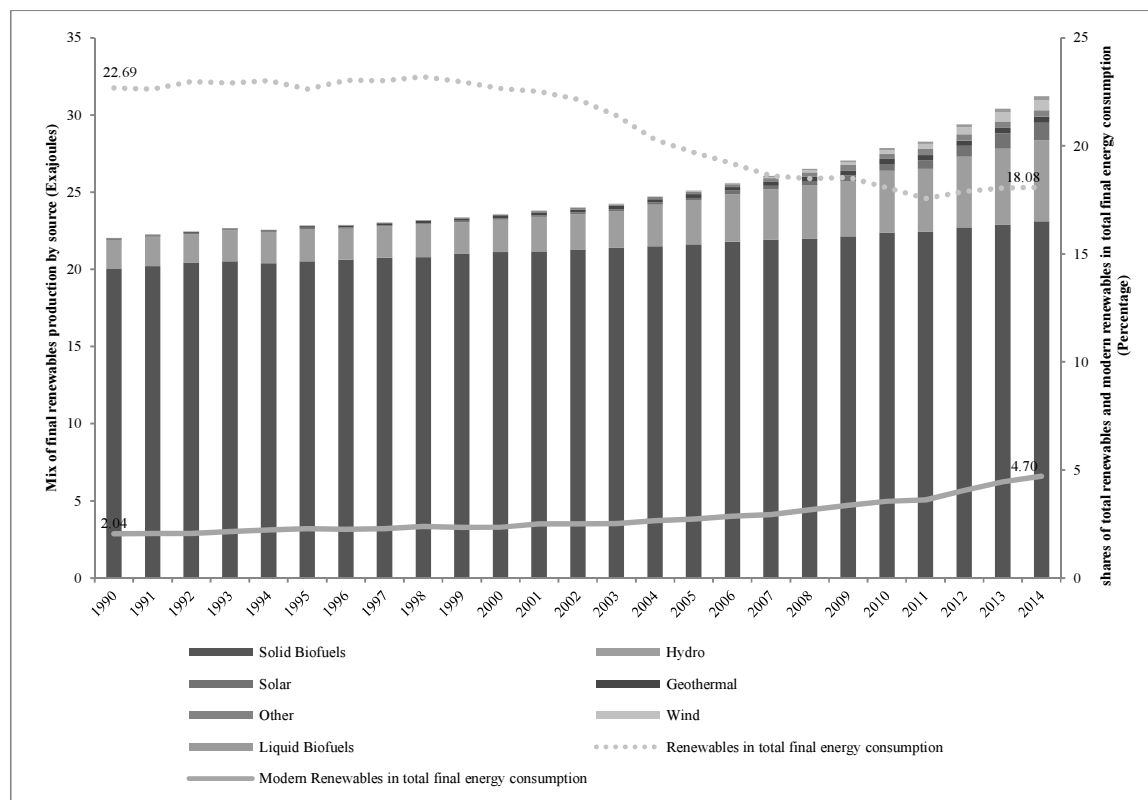
Change in the structure of solid biofuels, 1990-2014



Source: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

21. Notwithstanding 41.87 per cent growth in renewables in the region over the period 1990-2014 (9.22 exajoules in absolute terms), the total share of renewables of total final energy consumption is on a downward trajectory with a decrease from 22.69 per cent in 1990 to 18.08 per cent in 2014. A comparison of dynamics of renewable energy mix (left axis) and shares of total renewables and modern renewables in total final energy consumption (right axis) is shown in figure VIII.

Figure VIII
Mix of final renewables production by source and shares of total renewables and modern renewables in total final energy consumption, 1990-2014



Source: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

22. Asia and the Pacific region remains in line with global renewable energy development trends, with indicators of share of renewables in total final energy consumption in both ESCAP and the World equal to 18.3%. While using renewables, however, the region as a whole is 37.5 per cent reliant on modern renewable energy sources, which is almost 6.6% higher than the global average. The projected renewable energy capacities in hydropower, solar and wind indicate the scale for further regional renewable energy development potential. Nowadays, however, new renewable energy installations prove to be insufficient to sustain their growth to the extent of increase of their share in the regional energy mix, due to rapidly increasing energy demand.

23. The renewable energy resources potential in areas such as solar power and wind power in the countries of the region indicates the scale for further regional renewable energy development. Yet several countries in the region have already gone some way to maximizing the renewable energy potential in their energy mix. In particular, several countries strongly rely on hydropower resources: Tajikistan (99.6 per cent of total final energy consumption); Nepal (99.5 per cent); Kyrgyzstan (93.5 per cent); Georgia (74.5 per cent); Myanmar (72.4 per cent); and Korea, Democratic People's Republic (70.2 per cent). Several countries have attempted to implement renewables in order to diversify their energy portfolios. This group includes Armenia (3.2-fold increase in share of renewables in total final consumption during the period 1990-2012); Azerbaijan (2.3-fold); Kyrgyzstan (1.8-fold);

Singapore (1.7-fold); Tajikistan and Georgia (1.4-fold); and Korea, Democratic People's Republic (1.2-fold).

24. Significant potential exists for enhanced international energy cooperation and development of cross-border power infrastructure, which can transfer electricity surpluses originating from hydropower and other renewable resources. Countries are exploring options to engage in the process of unifying their energy systems in whole or in part and to participate as transit countries in regional interconnection concepts, such as the Central Asia South Asia Electricity Transmission and Trade Project (CASA-1000), the Asian Energy Super Ring, and the Association of Southeast Asian Nations Plan of Action for Energy Cooperation 2016-2025. Mostly originating in or complemented by hydropower-rich regions, these projects facilitate further development of renewable energy sources and bring confidence regarding an accelerated pace of progress with increasing the share of renewable energy in the regional energy mix.

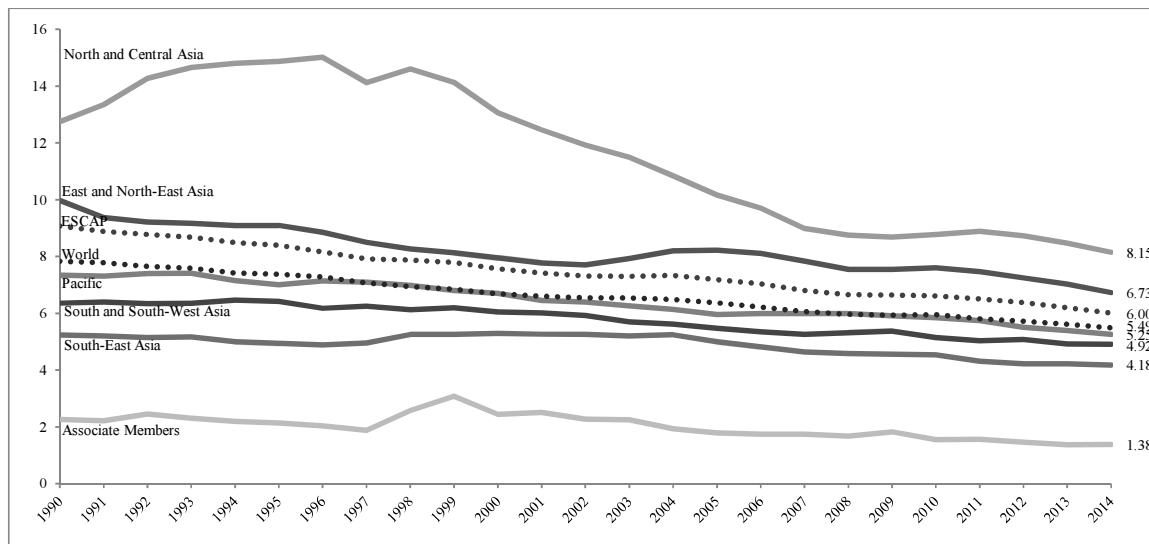
IV. Improvement of energy efficiency brings benefits to the countries, but progress is uneven

25. Since the methodology to directly evaluate energy efficiency at the national or regional level does not exist, its reciprocal value – energy intensity – might be used as a proxy indicator in order to assess the countries' progress towards attaining Sustainable Development Goal target 7.3 (By 2030, double the global rate of improvement in energy efficiency).

26. Yet the degree of energy efficiency uptake cannot be properly evaluated using this particular indicator, as its dynamics may be subject to structural changes in national economies. Thus, it requires analysis of by-sector energy intensity, for which the reliable data is not available.

27. Energy intensity continues to exhibit a steady decrease in the region, having improved by 3.1 megajoules per dollar of gross domestic product at 2011 purchasing power parity, with average pace of 1.7% per year from 1990 to 2014, compared to 1.4% per year globally for the same period. As of 2004, world average energy intensity was reported 5.5 megajoules per dollar of gross domestic product at 2011 purchasing power parity, while in Asia and the Pacific it reached the level of 6.0, with regional energy intensity gradually converging at a median value of 5.3 (figure IX).

Figure IX
Convergence of energy intensity indicator by subregion, 1990-2014
 (Megajoules per dollar of gross domestic product at 2011 purchasing power parity)

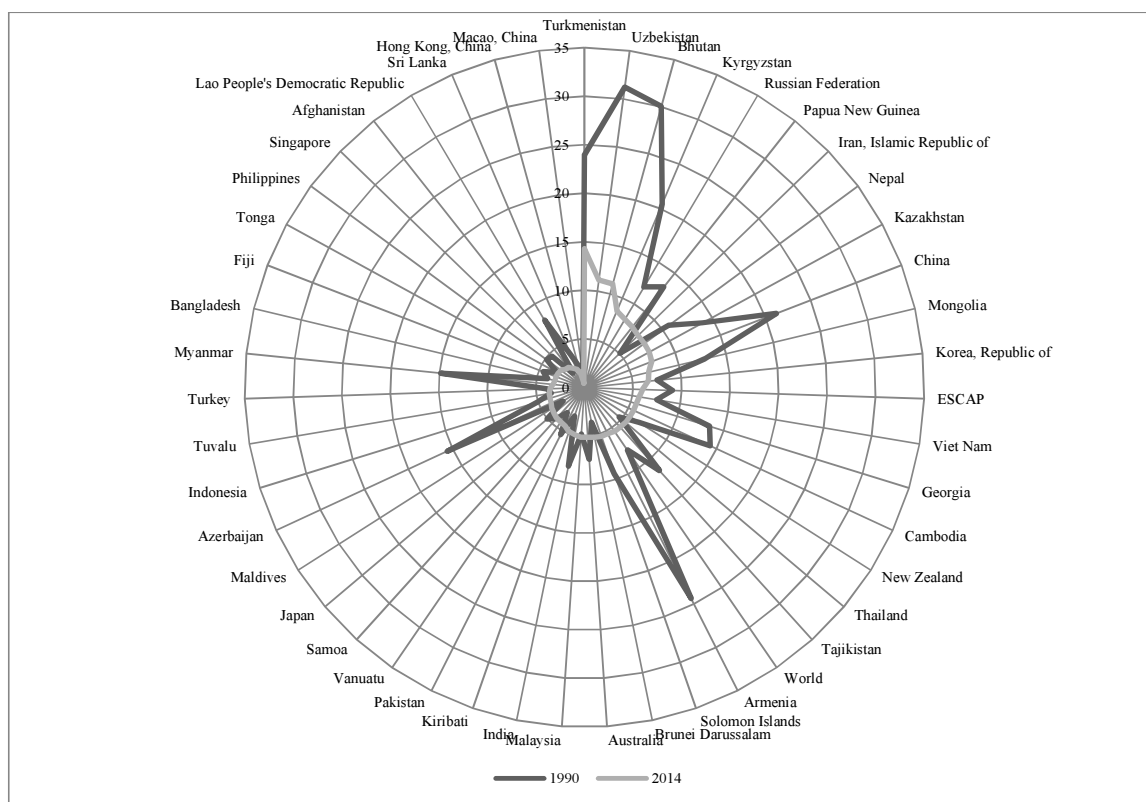


Sources: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

28. Notwithstanding a broad implementation of energy efficiency measures on national levels – such as setting priorities, targets, action plans, standards (including those for appliances, lighting and mechanical systems), labeling, energy service companies support measures, energy efficiency promotion, public awareness, and international cooperation – their impact is still insufficient to address this issue, and primary energy intensity varies substantially across the ESCAP subregions and member States. Energy intensity of ESCAP member States is shown in figure X.

29. Energy efficiency improvements should be evaluated on an individual, country-by-country basis. Both positive and negative values may be subject to either low or high baseline year indicators, structural differences between the economies, insufficient governmental incentives or overcomplicated regulatory framework, or other factors. In addition, a rebound effect should be noted in several countries. This is where increased efficiency stemming from technological progress results in specific behavioural responses to increase the demand for energy, offsetting the effect of energy efficiency measures.

Figure X
Energy intensity in selected Asia-Pacific economies, 1990 and 2014
 (Megajoules per dollar of gross domestic product at 2011 purchasing power parity)

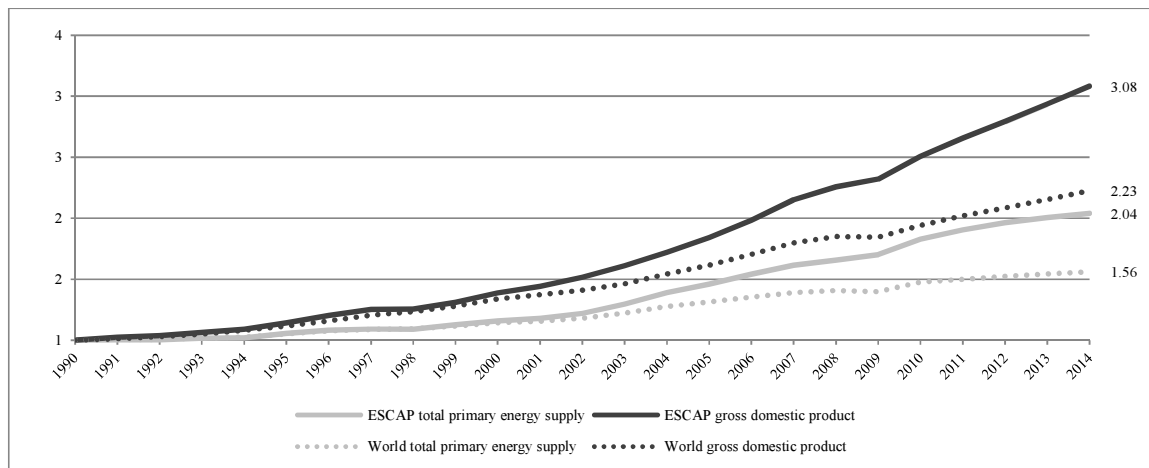


Source: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

Note: No data for American Samoa; Cook Islands; French Polynesia; Guam; Korea, Democratic People's Republic; Nauru; New Caledonia; Niue; and Northern Mariana Islands. Dynamics for Marshall Islands; Micronesia, Federated States; Palau; and Timor-Leste can not be correctly presented in the graph due to lack of 1990 data (however, by 2014, these countries achieved the level of 7.45, 6.84, 12.99, and 3.00 megajoules per dollar of gross domestic product at 2011 purchasing power parity, respectively).

30. An overall decoupling of total primary energy supply and gross domestic product growth – the indicator referring to the ability of economies to grow without a corresponding increase in energy consumption – can be observed in Asia-Pacific as a result of multiple factors (including a switch to service industries), and energy efficiency improvements. Thus, while total gross domestic product of Asia and the Pacific increased 3.1-fold through the period under consideration (from approximately \$15.9 billion in 1990 to \$47.3 billion in 2014), the increase in energy consumption has only almost doubled (from approximately 139.1 exajoules in 1990 to 283.8 exajoules in 2014). The dynamics of this decoupling as relative change (with year 1990 as baseline) is shown in Figure XI.

Figure XI
Relative changes in total primary energy supply and gross domestic product growth in ESCAP and World, 1990-2014 (1990=100)
 (Times increase)



Source: ESCAP calculations, based on data from World Bank, *Global Tracking Framework Report 2017*. Available from <http://gtf.esmap.org/>. Accessed 7 March 2017.

31. A rebound effect should also be noted in several countries. This is where increased efficiency stemming from technological progress results in specific behavioral responses to increase the demand for energy, offsetting the effect of energy efficiency measures. Meanwhile, an overall decoupling of total primary energy supply and gross domestic product growth – the indicator referring to the ability of economies to grow without a corresponding increase in energy consumption – can be observed in Asia-Pacific as a result of multiple factors (including a switch to service industries), and energy efficiency improvements.

V. Means of implementation of Sustainable Development Goal 7

A. International energy cooperation (Sustainable Development Goal means of implementation 7.a)

32. Achieving Sustainable Development Goal 7 will require technological foresight, adequate economic incentives and strategic energy policy planning at the national and regional levels. Attainment of Goal 7 will also require a tracking framework, allowing evaluation of the impact of implemented policies. Despite significant technological innovation in many industries, international energy cooperation efforts to deploy innovative technologies are limited owing to the lack of a coherent approach among the member States. However, global market drivers may lead to a certain degree of regional energy cooperation, in addition to the impetus given by the Sustainable Development Goals.

33. At the national level, member States have expressed, in their national energy policies, a willingness to align with the targets of Goal 7 and related Goals but their overall effect in achieving the intended goals may be limited. There is room to generate greater trust among the countries in region-wide energy planning issues, improve the regional awareness of both potential investors and countries, and improve the long-term stability of policy frameworks to provide investor confidence. Compounding these challenges, the lack of harmonized standards often leads to economic inefficiency of investments and high transaction costs.

34. In response to Commission resolution 67/2, which was adopted in 2011, the first Asian and Pacific Energy Forum was organized in May 2013 in Vladivostok, Russian Federation, with the support of the host Government. The Asian and Pacific Energy Forum is the first ministerial conference convened by the United Nations to focus on energy. Its purpose is to promote regional cooperation for enhanced energy security and the sustainable use of energy. Following the senior officials segment and the Business Forum side event, the 34 delegations adopted the Ministerial Declaration on Regional Cooperation for Enhanced Energy Security and the Sustainable Use of Energy in Asia and the Pacific: Shaping the Future of Sustainable Energy in Asia and the Pacific and the Plan of Action on Regional Cooperation for Enhanced Energy Security and the Sustainable Use of Energy in Asia and the Pacific, 2014-2018, which are aligned with the goals of the Sustainable Energy for All initiative and, consequently, the targets of Sustainable Development Goal 7.

35. The detailed Plan of Action identifies 15 regional areas for action, as well as areas of subregional action, towards a vision to achieve a region in which:

- (a) Sustainable energy for all is a reality;
- (b) Enhanced energy security is present from regional to household levels;
- (c) An energy future of equity, diversification and access to all is secured;
- (d) The share of cleaner energies in the overall energy mix is increased.

36. In 2014, the Commission adopted resolution 70/9, endorsing the outcomes of the first Asian and Pacific Energy Forum, including establishing a review and assessment mechanism and setting in motion preparations for the second Asian and Pacific Energy Forum in 2018. The outcome documents of the Asian and Pacific Energy Forum established the 2014-2018 regional agenda targeting enhanced energy security and the sustainable use of energy. The secretariat is mandated by Commission resolution 70/9 to support the implementation of the Plan of Action and periodically review the progress made leading up to the next Asian and Pacific Energy Forum in 2018. The Asian and Pacific Energy Forum Implementation Support Mechanism was developed to meet this mandate. The Mechanism is solution driven, with expected outputs in the form of multilateral policy initiatives and solutions that consist of three pillars: the Asia Pacific Energy Portal, policy dialogues, and analysis and reporting.

37. The Asia Pacific Energy Portal (www.asiapacificenergy.org) provides interactive data visualizations that enable rapid analysis, as well as access to national policies, and serves as a component of a review mechanism for

assessing the implementation of the Forum outcomes. The Portal is already a powerful tool and a popular resource for stakeholders. With the facility to simultaneously view data and policies, the platform provides a unique analytical tool for ongoing Forum activities, as well as allowing member States and development partners access centralized information for the Experts nominated by member States will be periodically reviewing the quality of data and information contained in the Portal, and will be advising the secretariat on improving its functionality. Focal points from member States will facilitate the collection of the necessary policy information to be contained in the Portal. The Portal forms the basis for conducting the analysis and reports for the annual Policy Dialogue.

38. Dialogues include the annual high-level Policy Dialogue, which focuses on identifying solutions to key challenges and offers the potential for working-level groups to support the implementation of policy solutions. The Policy Dialogue is attended by policymakers, resource persons and relevant stakeholders, including research institutions, the private sector and civil society organizations. The Policy Dialogue is structured around the draft annual regional trends report, which contains trends and analysis of a few selected topics by the member States. The Portal and the *Regional Trends Report on Energy for Sustainable Development in Asia and the Pacific* facilitate deliberations during the Policy Dialogue to identify specific areas and solutions in order to address common challenges through regional cooperation.

39. Analysis and reports fed into the annual Policy Dialogue serve as the channel through which ESCAP provides analysis on key challenges identified by member States. National focal points identify appropriate topics to be contained in the *Regional Trends Report* and enrich the publication by contributing case studies. By providing analysis on key energy issues, the Forum publications support the identification of potential policy solutions.

40. The Asian and Pacific Energy Forum mechanism enables tracking of implementation of Sustainable Development Goal 7, the Forum Plan of Action and the goals of the Sustainable Energy for All initiative and other energy-related and socioeconomic data. The Commission and the Committee on Energy, capitalizing on data from the Asia Pacific Energy Portal, may further facilitate the enhancement of the region's energy programme.

41. The ESCAP Energy Division is committed to supporting member States in defining and responding to sustainable development priorities in the area of energy through regional cooperation, and to ensuring that the energy work programme contributes to the implementation of the Sustainable Energy for All initiative and the 2030 Agenda for Sustainable Development, in particular Sustainable Development Goal 7.

42. Together with the Asian Development Bank and the United Nations Development Programme, ESCAP leads the Asia-Pacific hub of the global network to facilitate and coordinate the implementation of Sustainable Energy for All initiative at the regional level. The hub supports countries in conducting rapid assessments, building constructive dialogue on policy and catalysing investments and mobilizing bilateral and global funds for clean energy development. ESCAP aims at energy security and sustainable energy development by fostering subregional and regional cooperation on energy access, energy efficiency and renewable energy development. ESCAP also is the secretariat for UN-Energy Asia-Pacific, a part of the global coordination group UN-Energy, which coordinates, improves and initiates partnerships between countries, the United Nations and all development partners.

ESCAP initiated the regional framework of the Asian Energy Highway and the Pacific Regional Data Repository for Sustainable Energy for All, and developed the Pro-Poor Public-Private Partnership model for widening access to energy services. In addition, the Asian and Pacific Energy Forum facilitates regional promotion of sustainable energy policies, projects and good practices developed at the subregional and country levels, and supports the recognition of national actions taken by Governments in the region in relation to the Sustainable Energy for All initiative.

B. Expansion of energy infrastructure (Sustainable Development Goal means of implementation 7.b)

43. Sustainable energy development needs to take into consideration social, environmental and economic perspectives. The adopted 2030 Agenda for Sustainable Development – in particular Sustainable Development Goal 7 – and the Paris Agreement on climate change will shape the future of energy development. In the long term, transboundary power trade offers the potential to increase the sustainability of the power sector while developing stronger regional cooperation. From a near-term perspective, the benefits of transboundary power trade are increased energy security, including reliability, adequacy and flexibility; economic gains associated with the economies of scale with regard to generation that are achievable with access to larger markets; and the decreased need for generation reserve margins.

44. Deepening economic integration and cooperation in the Asia-Pacific region could be mutually beneficial to participating countries and instrumental in achieving the Sustainable Development Goals. As energy demand rises, regional energy connectivity will take on an increasingly important role as a key dimension of regional economic cooperation and integration, which will enable countries to meet their energy demand, enhance energy access and improve the sustainability of energy supplies. Energy connectivity is strongly linked to Commission resolution 70/1 on implementation of the Bangkok Declaration on Regional Economic Cooperation and Integration in Asia and the Pacific, which focuses on the four pillars of regional economic cooperation: moving towards the formation of an integrated market, developing seamless connectivity, enhancing financial cooperation and addressing shared risks and vulnerabilities.

45. Huge potential exists for energy security improvement through enhanced international energy cooperation and the development of resilient cross-border power infrastructure. However, this requires coordination of energy strategies among the countries. Since the execution of large-scale energy infrastructure projects does not completely solve internal energy problems of the participating countries (especially in hydropower-rich countries, owing to seasonal variations of energy deficits and surpluses), it cannot be a substitute for holistic energy cooperation between the countries to improve the sustainability of energy supplies. Therefore, there remains a need to create resilient energy infrastructure, aimed at facilitating the transition from the paradigm of energy self-sufficiency to high interconnectedness.

46. Member States are at different stages of market liberalization, many of them having monopolized markets, and others being in the process of market liberalization and unbundling. It thus remains unclear whether the market reforms will lead to a market design that is common for all the countries, allowing them to enhance efficient cross-border energy trade, and facilitate the attainment of a higher rate of access to affordable, reliable, sustainable and modern energy.

47. It is critical to create and maintain a multilateral energy planning process with an equal horizon of projections in order to provide consistency among the strategies and to enable their evaluation and feasibility studies. Member States should consider the possibilities of multilateral long-term engagement in energy transition planning and implement knowledge-sharing and capacity-building practices. There remains a need to maintain dialogue at the expert, corporate and governmental levels in order to strengthen the integration of national energy development plans into a common regional infrastructure development framework, thereby reinforcing the complementarity of concurrent projects while taking account of synergy and balancing countries' interests.

C. Strengthening Sustainable Development Goals means of implementation

48. The 2030 Agenda for Sustainable Development – the transformative plan of action to address urgent global challenges over the next 15 years – is a road map that will build on the success of the Millennium Development Goals and ensure sustainable social and economic progress worldwide. It seeks not only to eradicate extreme poverty, but also to integrate and balance the economic, social and environmental dimensions of sustainable development in a comprehensive global vision.

49. Access to affordable, reliable and sustainable energy is crucial to achieving many of the Sustainable Development Goals, from poverty eradication through advancements in health, education, water supply and industrialization to the mitigation of climate change. Energy access, however, varies widely across countries, and the current rate of progress falls short of what will be required to achieve Goal 7. Redoubled efforts are needed, particularly for countries with large energy access deficits and high energy consumption. In this regard, Sustainable Development Goal 17 (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development) captures overall global progress in the attainment of all the Sustainable Development Goals, including Goal 7.

50. Meeting implementation targets, including raising the necessary funds, is key to realizing the 2030 Agenda. Increasing support to developing countries, in particular the least developed countries, landlocked developing countries and small island developing States, is fundamental to equitable progress for all.

51. A national statistical plan is key to strengthening a nation's statistical system. The requirements of the Millennium Development Goals indicators have gone a long way towards fostering stronger national statistical plans and systems. The number of countries with a national statistical plan increased in some regions and country groups between 2010 and 2015, including the least developed countries and landlocked developing countries. However, many are still without a plan.

VI. Conclusions

52. The analysis in this information document of the progress made in the implementation of Sustainable Development Goal 7 in Asia-Pacific countries reveals the current state of access to modern energy services and developments in renewable energy uptake and energy efficiency. What is needed is to acknowledge the differences among the member States and adopt a country-specific approach to addressing energy issues, taking account of national circumstances and development plans.

53. At the same time, constrained financial resources and low-performing energy governance shape a core of common issues that the countries are facing while attempting to remain on the path to sustainable energy development. These challenges can be mitigated by countries' engagement in enhanced international energy cooperation that supports capacity-building and creates an enabling environment for the promotion of energy-related sustainability concepts through regulatory frameworks.

54. High-quality data are vital for Governments, international organizations, civil society, the private sector and the general public to make informed decisions and to ensure an accurate review of the implementation of the 2030 Agenda. Hence, tracking progress with regard to the Sustainable Development Goals requires the collection, processing, analysis and dissemination of data and statistics at the subnational, national and regional levels, including those derived from official statistical systems and from new and innovative data sources. Many national statistical systems face serious challenges in this regard. As a result, accurate and timely information about certain aspects of people's lives are unknown, and many development challenges are still poorly understood. In General Assembly resolution 70/1, member States recognized the crucial role of strengthened data collection and capacity-building and committed to addressing the data gap. Given substantial data gaps, strong focus should be placed on efforts to generate and collect reliable country data and information in order to monitor implementation of Goal 7, especially for countries with special needs including small island developing States. Enhanced regional collaboration on capacity-building to implement Goal 7 should also be prioritized. To fill data gaps and improve international comparability, countries need to adopt internationally agreed standards, while the international statistical community needs to work closely with development partners and other stakeholders to strengthen national statistical capacities and improve reporting mechanisms.

55. Along with the improvement of data coverage, new indicators need to be developed in order to capture specific regional challenges and issues, maintain a holistic approach to the tracking of overall progress with regard to Goal 7 in the Asia-Pacific region and fulfil the pledge of the 2030 Agenda to leave no one behind.

56. It should be underlined that nearly all the ESCAP member States have adopted and implemented policy incentives in support of attainment of Goal 7 targets, namely those regarding access, energy efficiency and renewable energy.¹¹ However, analysis of the regulatory frameworks and energy policies in place suggests that quantity of adopted policies does not necessarily secure positive qualitative changes. Thus, most top-performing countries in terms of Goal 7 have specific measures and programmes that facilitate further improvements in national energy systems while intensifying actions towards achievement of the overall Goal 7 targets.

57. The main findings of this document can contribute to identifying the scope of the future work of ESCAP in addressing sustainable energy development issues.

¹¹ ESCAP, Policy Map, Asia Pacific Energy Portal. Available from www.asiapacificenergy.org (accessed 10 March 2017).

Annex

Final list of proposed indicators for Sustainable Development Goal 7

<i>Targets (from the 2030 Agenda)</i>	<i>Indicators</i>
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity 7.1.2 Proportion of population with primary reliance on clean fuels and technology
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption
7.3 By 2030, double the global rate of improvement in energy efficiency	7.3.1 Energy intensity measured in terms of primary energy and gross domestic product
7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	7.a.1 Mobilized amount of United States dollars per year starting in 2020 accountable towards the \$100 billion commitment
7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	7.b.1 Investments in energy efficiency as a percentage of gross domestic product and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services

Source: E/CN.3/2016/2/Rev.1, annex IV.

Note: While there is an established methodology for Sustainable Development Goal targets 7.1, 7.2 and 7.3 (data are produced by international organizations and collected from household surveys, produced by countries, not necessarily with annual frequency but on a regular basis), no metadata is available for means of implementation targets 7.a and 7.b under the current indicator formulation.