



ANALYSIS OF THE  
VOLUNTARY NATIONAL REVIEWS  
RELATING TO SUSTAINABLE  
DEVELOPMENT GOAL 7  
**2018**

Ensuring access to affordable,  
reliable, sustainable  
and modern energy for all

**7** AFFORDABLE AND  
CLEAN ENERGY



**ANALYSIS OF THE  
VOLUNTARY NATIONAL REVIEWS  
RELATING TO SUSTAINABLE  
DEVELOPMENT GOAL 7  
2018**

Ensuring access to affordable,  
reliable, sustainable  
and modern energy for all

# Contents

	page
Foreword .....	iii
Acknowledgements .....	iv
Key messages .....	v
2018 Voluntary National Reviews at a glance .....	vi
2018 High-level Political Forum at a glance .....	viii
I. Introduction .....	1
II. Advancing SDG7 implementation in support of the 2030 Agenda .....	2
A. Achieving universal access to electricity .....	2
B. Achieving universal access to clean and modern cooking fuels, technologies and services .....	3
C. Substantially increase the share of renewable energy in the global energy mix .....	4
D. Double the rate of energy efficiency improvement .....	5
E. Financing SDG7 .....	6
F. Sustainable energy technology innovation .....	7
G. Enhancing capacity-building .....	7
H. Strengthening interlinkages between SDG7 and other Goals .....	7
III Conclusion .....	9
References .....	10

Published by the United Nations  
Copyright © United Nations, 2018  
All rights reserved

For further information, please contact:  
Division for Sustainable Development Goals  
Department of Economic and Social Affairs  
United Nations  
<https://sustainabledevelopment.un.org/contact/>  
Email: [salame1@un.org](mailto:salame1@un.org)

# Foreword

Achieving Sustainable Development Goal 7 (SDG7) will benefit billions of people all over the world. Universal access to energy, increased energy efficiency and expanded use of renewable energy by 2030 will result in enhanced economic opportunities and jobs, empowerment of women and youth, better education and health, and more sustainable, equitable and inclusive communities. Access to clean energy would boost protection from and resilience to climate change.

To review progress to date, the United Nations High-level Political Forum on Sustainable Development undertook the first review of SDG7 this year. The central message was unmistakable: progress on SDG7 has been insufficient so far and we must strengthen our efforts to deliver on SDG7.

The Department of Economic and Social Affairs conducted an analysis of the 46 voluntary national reviews (VNRs) submitted in 2018 in order to gain a better understanding of the incorporation of SDG7 in countries' sustainable development action plans, challenges and opportunities in implementation and critical interlinkages with other Sustainable Development Goals. The analysis is intended to complement the 27 policy briefs on SDG7 and its interlinkages with

other Sustainable Development Goals, which were prepared by the multi-stakeholder Technical Advisory Group on SDG7 convened by the Department of Economic and Social Affairs in support of the first SDG7 review by the 2018 High-Level level Political Forum.

The report is selective in scope and all examples chosen are illustrative so as to give an idea of the actions and measures taken in support of the implementation of the 2030 Agenda for Sustainable Development at the country level.

It is our hope that the best practices and lessons learned that are highlighted in this report will provide valuable feedback for all countries and the international community. We also hope that it will help the international community in its efforts to assist countries in accelerating implementation of SDG7 on the ground. Future high-level political forums and other key milestones, such as the United Nations Climate Change Conference, the Secretary-General's Climate Summit and the 2019 midpoint review of the Decade of Sustainable Energy for All (2014–2024), present unique opportunities to strengthen further action towards meeting the 2030 Agenda and the Paris Agreement on Climate Change.



A handwritten signature in black ink, consisting of the Chinese characters '刘振民' (Liu Zhenmin).

**LIU Zhenmin**  
Under-Secretary-General for Economic and Social Affairs  
United Nations

# Acknowledgements

This report was prepared by a team of contributors within the Division for Sustainable Development Goals of the Department of Economic and Social Affairs. The team included David Koranyi and Bo Fu, as lead authors, with orientation advice and inputs from Friedrich Soltau and Minoru Takada, team leader for energy in the Division. Nadine Salame managed the production process, and Juwang Zhu, Director of the Division, provided overall guidance. Encouragements from the multi-stakeholder Technical Advisory Group on SDG7 are greatly appreciated.

Support for graphic design and production provided by the Department for General Assembly and Conference Management is kindly acknowledged.

\*

The views expressed in this report are those of the authors and do not necessarily reflect those of the United Nations, its senior management, or the experts whose contributions are acknowledged.

# Key messages

**A**ll the 2018 voluntary national reviews provide an assessment of progress made in implementing **SDG7**, underscoring the importance of energy in achieving the Sustainable Development Agenda by 2030. They contain pertinent lessons learned and good practices, in line with the overall aim of the review process. At the same time, there is scope for further strengthening of the reviews.

**A**mong the 46 countries submitting reviews in 2018, **ambition levels in the energy access space are encouragingly high**. They are, however, often not matched with detailed action plans on implementation and financing. Off-grid solar solutions feature prominently in action plans, but reviews typically do not discuss the exact barriers of implementation. The urban–rural divide in electrification and disproportional access-deficit challenges for indigenous communities are identified as further major challenges.

**C**lean cooking is the most under-reported issue. Only 27 per cent of the 2018 reviews report on clean cooking, and none of them in great detail, despite the widespread negative health, environmental, climate and social impacts.

**I**t is evident that renewable energy in the electricity sector is progressing at an inspiring pace. However, the reviews indicate that progress in terms of results and ambition level is not matched in other end-use sectors, such as transportation, industry and heating and cooling.

**E**nergy efficiency as the first fuel is prioritized in almost all of the reviews. At the same time, **detailed strategies and ambitious cross-sectoral integrated policy approaches in energy efficiency** that promote improvements through targets or fiscal incentives **are not mentioned in many reviews**.

**T**he critical aspect of **financing investment in energy infrastructure**, the role of government support schemes, tax incentives and the importance of reforming inefficient fossil fuel subsidies **receive only limited attention**.

**L**ess than one third of the reviews address **energy innovation and technology**. There is a gap between developed and developing countries with regard to the critical role of digitization and smart appliances in the energy transition.

**T**here is considerable scope to enhance plans for scaling up capacity-building and education to develop the necessary human and institutional skills and capacities.

**T**he majority of the reviews do not elaborate on the **connection between the country's SDG7 objectives and its nationally determined contributions under the Paris Agreement**.

**O**verall, **ambition levels vary greatly between countries**. While aggregation of information contained in the reviews is difficult, and there are many encouraging examples, the ambition levels and action plans reflected in the 46 reviews submitted in 2018 suggest that greater effort is required to reach all SDG7 targets by 2030.

# 2018 Voluntary National Reviews at a glance

- ◆ Latin America and Caribbean Group
- ◆ African Group
- ◆ Asia-Pacific Group
- ◆ Eastern European Group
- ◆ Western European & Others Group



**Target 7.1** By 2030, ensure universal access to affordable, reliable and modern energy services

- 95% reported on access to electricity, full access by 2030 is within reach
- 27% mentioned clean cooking

**Target 7.2** By 2030, increase substantially the share of renewable energy in the global energy mix

- Renewable energy is mentioned in all VNRs
- Renewables in the electricity sector are progressing at an impressive pace, but not in other end user sectors

**Target 7.3** By 2030, double the global rate of improvement in energy efficiency

- 89% reported on energy efficiency progress and challenges, and efficiency is prioritized as first fuel, though ambitious cross-sectoral policies are often missing

The Voluntary National Reviews (VNRs) were called for by the 2030 Agenda for Sustainable Development to facilitate the sharing of national experiences, including successes, challenges and lessons learned, with a view to accelerating the implementation of the SDGs. During the 2018 HLPF, SDG7 on energy was reviewed at the global level for the first time. The majority of 2018 VNR countries included analyses and reviews on SDG7 in their reports.

Of the 46 countries presenting their VNRs at the 2018 HLPF in July, 44 have made their full reports available as of 30 August 2018.

64% highlighted investment in energy sector

Investment



43% reported on technology breakthrough and emphasized the importance

Technology & Innovation



30% emphasized the importance and urgent needs of enhancing capacity building

Capacity Building



55% showcased energy partnership, including public-private partnerships and cross-regional cooperation.

Partnership



61% mentioned interlinkages between energy and the other SDGs, such as transport and gender.

Energy and climate were highlighted in 68% VNRs

Interlinkages



89% of the 44 countries set national policy or agenda to accelerate energy development, most of them are aligned with SDG7 targets

Policy & Regulation



Note: This analysis focuses on the 44 countries for which VNR full reports were available online by 30th August.



# 2018 High-level Political Forum at a glance

## HLPF IN NUMBERS # HLPF 2018



DAYS



VOLUNTARY NATIONAL REVIEWS



HEADS AND DEPUTY HEADS OF STATE AND GOVERNMENT, MINISTERS, VICE-MINISTERS & OTHER MINISTERIAL LEVEL OFFICIALS



SPEAKERS IN PANELS



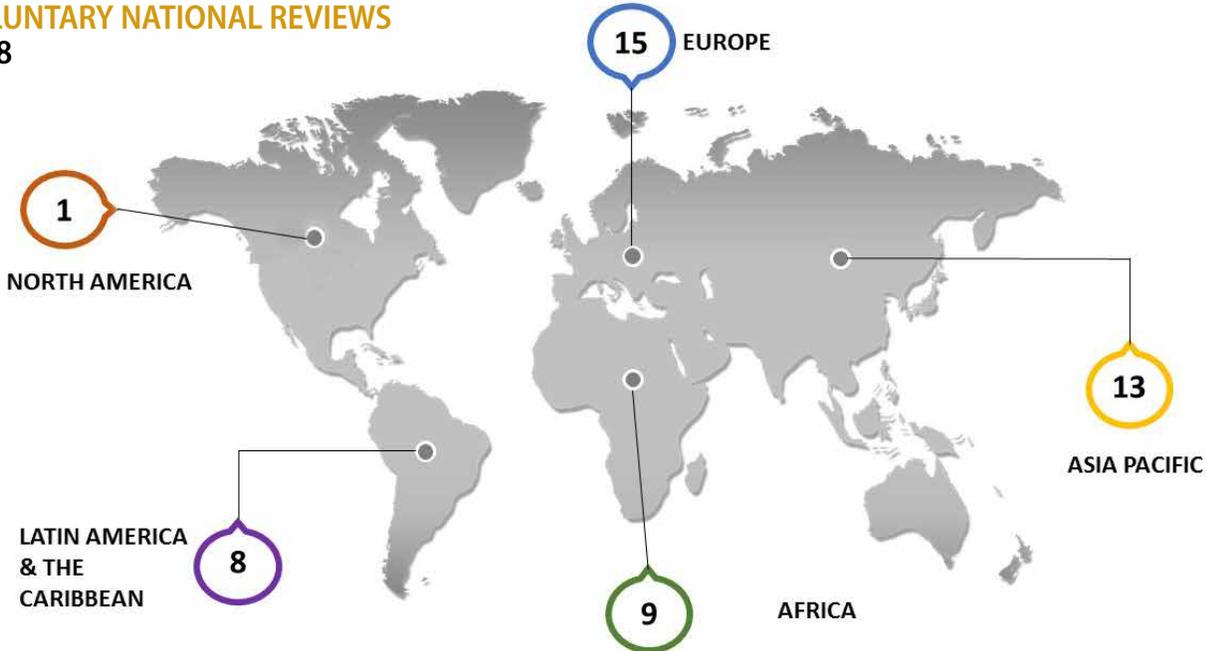
MAJOR GROUP & OTHER STAKEHOLDERS INTERVENTIONS



REGISTERED PARTICIPANTS



## VOLUNTARY NATIONAL REVIEWS 2018



# I. Introduction

Voluntary national reviews (VNRs) are part of the follow-up and review of the implementation of the 2030 Agenda for Sustainable Development. As stated in paragraph 84 of the Agenda, regular reviews by the high-level political forum (HLPF) shall be voluntary, State-led, undertaken by both developed and developing countries, and shall provide a platform for partnerships, including through the participation of major groups and other relevant stakeholders. The reviews make possible the sharing of experience, including successes, challenges and lessons learned, with a view to accelerating the implementation of the 2030 Agenda.

The Department of Economic and Social Affairs conducted a brief analysis of the 46 voluntary national reviews<sup>1</sup> submitted in 2018, in an attempt to aggregate information contained in the reviews to obtain a better understanding of the progress in implementing Sustainable Development Goal 7 (SDG7) in members States, deepen the level of understanding and knowledge on the key features related to SDG7 in individual countries' sustainable development action plans, and the interlinkages with other Sustainable Development Goals. SDG7 was one of six Goals<sup>2</sup> under review in 2018.

This report attempts to highlight practices from all the countries that participated in the 2018 voluntary national review process. However, of necessity, the report is selective in scope, subjective in analytical framing and not exhaustive with respect to practices and examples. All examples chosen are illustrative, and their selection does not imply that the 2018 reviews do not contain other equally valid and useful examples of country practices. This report can hardly do justice to the full range of information in the reviews, which represent an inspiring repertoire of country profiles in action.

Nonetheless, it is hoped that it will provide a global snapshot of country action related to SDG7 and its interlinkages with other Goals, and facilitate an enhanced understanding of the challenges and opportunities in implementing the 2030 Agenda, especially those related to SDG7.

The emphasis of the reviews varies by country. Many, but not all, of the reviews contain detailed action plans on the implementation of SDG7. The majority provide success stories, which flag certain energy policy goals at the country level. Where deemed useful for the purpose of contextualization, reference is made to relevant official and technical documents related to SDG7, such as the Ministerial Declaration of the 2018 High-level Political Forum, the President's Summary of the 2018 High-level Political Forum, the Sustainable Development Goals Reports 2018, the Policy Briefs in Support of the First SDG7 Review at the 2018 High-level Political Forum, including the Global Agenda for Accelerated SDG7 Action, and Tracking SDG7: The Energy Progress Report 2018, a joint report by the custodian agencies<sup>3</sup> of the SDG7 indicators.

The 46 voluntary national reviews submitted in 2018 and analysed for this report are available from the website of the high-level political forum (<https://sustainabledevelopment.un.org/hlpf/2018>).

The analysis consisted of a desktop review of the reports submitted as part of the 2018 voluntary national review process. As such, it is subject to the limitations inherent in this mode of research. Determining the extent to which progress made by Governments in the actual implementation of the plans referenced in the reports is outside the limits of this report.

1 By Albania, Andorra, Armenia, Australia, Bahamas, Benin, Bhutan, Cabo Verde, Canada, Columbia, Dominican Republic, Ecuador, Egypt, Greece, Guinea, Hungary, Ireland, Jamaica, Kiribati, Lao People's Democratic Republic, Latvia, Lebanon, Lithuania, Mali, Malta, Mexico, Namibia, Niger, Paraguay, Poland, Qatar, Romania, Saudi Arabia, Senegal, Singapore, Slovakia, Spain, Sri Lanka, State of Palestine, Sudan, Switzerland, Togo, United Arab Emirates, Uruguay and Viet Nam.

2 The others being SDG6 on clean water and sanitation, SDG11 on sustainable cities and communities, SDG12 on responsible consumption and production, SDG16 on life on land and SDG17 on partnerships for sustainable development.

3 These are International Energy Agency, World Bank Group, International Renewable Energy Agency (IRENA), World Health Organization (WHO), and the United Nations Statistics Division.

## II. Advancing SDG7 implementation in support of the 2030 Agenda

All 46 voluntary national reviews submitted in 2018 provide an assessment of the progress in implementing SDG7. This underscores the importance of energy in national strategies, plans and programmes for achieving the Sustainable Development Agenda by 2030. A detailed look at the reviews, however, shows both opportunities and challenges.

Overall, the analysis found that the majority of countries referenced the existence of a national energy strategy. A strong correlation was also noted between the existence of a comprehensive national energy strategy and the level of ambition and details on SDG7 implementation. Countries with a well-defined energy strategy tend to set more ambitious targets with a clearer path to implementation. Many reviews did not flesh out the elements of such a strategy in detail.

On the other hand, the analysis showed the overall challenge, which resonates with the conclusions on SDG7 of the 2018 Sustainable Development Goals report that “ensuring access to affordable, reliable and modern energy for all has come one step closer due to recent progress in electrification, particularly in LDCs, and improvements in industrial energy efficiency. However, national priorities and policy ambitions still need to be strengthened to put the world on track to meet the energy targets for 2030”.

The analysis also reinforced the main message of Tracking SDG7: The Energy Progress Report 2018, published in June 2018, that “progress falls short on all four of the SDG7 targets, which encompass universal access to electricity, as well as clean fuels and technologies for cooking and call for a doubling of the rate of improvement of energy efficiency, plus a substantial increase in the share of renewables in the global energy mix”.

Aggregated, to the extent possible, ambition levels and action plans reflected in the reviews do not lend enough confidence to be more optimistic about reaching the targets by 2030 in either of the four key areas of SDG7: closing the electricity access gap; making clean-cooking solutions a top political priority; accelerating the pace of transition towards

renewable energy; and scaling up investments in energy efficiency across all sectors of the economy.

Ambition levels among countries in these areas vary greatly and many do not elaborate on specificities with special regard to renewables and efficiency targets. The majority of the reviews do not contain sufficient data on the state of play with regard to the main SDG7 indicators, nor in most cases the specific targets to be reached by 2030.

### A. Achieving universal access to electricity

The sub-Saharan Africa and South Asia regions have the biggest access deficit. Access-deficit numbers in sub-Saharan Africa recently began to fall in absolute terms for the first time, mainly owing to strong performances in East African countries, while electrification outpaced population growth in South Asia.

Both Mali and Niger made only moderate progress in access to energy, but identified key shortcomings in their reviews that could facilitate the acceleration of urban and, especially, rural electrification programmes. Mali’s adoption of a Social Emergency Energy Access Programme (Programme d’urgence sociale d’accès à l’énergie 2017-2020) is an encouraging step to prioritize access. Niger’s 2015 National Energy Efficiency Plan (Plan d’action national d’efficacité énergétique) and Renewable Energy Plan (Plan d’action des énergies renouvelables) outline ambitious goals for energy efficiency investments to the tune of US\$ 37.4 billion by 2030 and a 62 per cent renewable energy target of total generation capacity to be installed until 2030.

Cabo Verde, Jamaica, Lao People’s Democratic Republic and Sri Lanka are close to achieving full access, while Namibia (52 per cent) and Senegal (65 per cent) have made significant progress, with the latter having a particularly well detailed action plan to address the remaining access deficit. Meanwhile, Guinea, Mali, Niger and Togo remain well below the 50 per cent threshold.

Countries in the latter category all outline **achieving universal access by 2030**, but their reviews do not elaborate on national and regional plans of action, targeted policies and regulations, multi-stakeholder partnerships, bottom-up actions and increased investment in both on- and off-grid solutions, in addition to cross-border grid connections, on-grid renewable energy solutions and decentralized options, as outlined in the Global Agenda.

**The urban–rural divide** in access remains a critical issue, with almost 87 per cent of the world’s population without electricity living in rural areas. This manifests itself very strongly in the reviews: all countries with a significant access deficit report that the gap remains wide open. In Niger, 65 per cent of citizens in an urban setting have access to electricity, compared to 5.8 per cent in a rural setting; while the ratios are, in the case of Mali, 93 per cent and 20 per cent, respectively; in Benin, 71 per cent and 18 per cent; in Guinea, 82 per cent and 7 per cent; in Namibia, 77 per cent and 29 per cent; in Senegal, 88 per cent and 38 per cent; in Togo, 87 per cent and 19 per cent.

Southeast Asia witnessed significant breakthroughs in energy access. Success in achieving nearly universal access by households in Viet Nam (99 per cent) and Lao People’s Democratic Republic (92 per cent) is a bright spot in the global access agenda.

**Off-grid solar solutions**, ranging from solar home systems to solar mini-grids are important drivers of rural energy access, which complement grid electrification in some countries. While off-grid solutions feature in many reviews, they typically do not discuss the exact barriers to implementation of low-cost, off-grid solar solutions, outline strategic plans clearly delineating the role for grid and off-grid approaches nor define the right partnership models between the public and private sector for financing grid extension.

Several reviews (Viet Nam and Niger in particular) highlight the difficult balancing act between affordable energy prices and prices that are attractive enough for the private sector to invest in the energy sector, with special regard to transmission and distribution systems.

Efforts and best practices to address **energy poverty** (e.g., through targeted subsidy programmes) do not receive enough attention in most of the reviews.

A critical issue highlighted prominently by Canada, Australia and the State of Palestine is the disproportional **access-deficit challenges for indigenous communities**. Both Canada and Australia focus heavily on addressing the challenge.

#### Best practices – Access

**Togo’s solar street lights programme** is an inspiring example of urban electrification relying on modern energy technologies. 10,000 solar powered street lights were installed in the five regions of Togo, including 7,000 standard solar street lights, 2,000 solar street lights with five outlets for charging appliances and 1,000 solar street lights with five outlets for charging devices and a Wi-Fi "spot" for Internet connection.

**Senegal’s pilot project for installing LED lights** in Dakar is an encouraging example of an ambitious deployment of a modern and efficient energy access solution. The pilot project is in the context of the ambitions of the country’s Economic and Energy Agency to launch a programme to replace 3 million inefficient incandescent lights with LED lights that consume 80–92 per cent less electricity, in households, government offices and on public streets by 2025.

**Viet Nam’s** dynamic policies and stable legal and regulatory framework resulted in major progress in closing the access gap, and the country is on a good track to ensuring that most rural households have access to electricity by 2020.

## B. Achieving universal access to clean and modern cooking fuels, technologies and services

The Ministerial Declaration of the 2018 High-level Political Forum calls upon Governments and all stakeholders to make clean-cooking solutions a priority. The Global Agenda for Accelerated SDG7 Action promotes the importance of place-specific policies, cross-sectoral plans, public investments, and game-changing, multi-stakeholder partnerships.

**The majority of the reviews from countries commonly considered as most affected by a lack of clean-cooking facilities, however, have not outlined plans to address the problem in sufficient detail.**

Access to clean-cooking fuels and technologies is an area typically overlooked by policymakers, a view reinforced by the reviews. Only 27 per cent of the reviews in the 2018 cycle report on the clean cooking issue.

**Out of the 20 countries with the largest clean-cooking deficit** identified in the 2018 Energy Progress Report, only Viet Nam and Sudan feature in the 2018 review cycle. Cooking is not mentioned in Viet Nam's national review, although, in the Energy Progress Report, Viet Nam was singled out as having made the most rapid progress in that area, along with India, Pakistan, Indonesia in Asia. Sudan's key message includes cooking as a priority topic.

#### **Best practices – Clean cooking**

The Government of **Cabo Verde** launched its Household Energy Strategy to address the interlinkages between clean-cooking solutions, health and gender equality, supporting the dissemination of enhanced stoves and promoting the use of locally manufactured stoves at affordable prices. This is contributing not only to the achievement of the clean cooking target as part of SDG7, but is also addressing SDG1 (no poverty), SDG3 (health), SDG5 (gender) and SDG15 (life on land).

**Ireland** is showing exemplary leadership in supporting SDG7 targets globally. The country is committed to supporting developing countries in their transition from the inefficient use of traditional energy supplies towards the use of modern, cleaner sources of energy, such as solar energy and energy efficient cook stoves. A number of small-scale pilot projects have been supported to explore off-grid household energy solutions for rural communities in sub-Saharan African countries, such as Malawi and Uganda, and offer options to be considered for scale-up as part of an overall energy solution.

Lao People's Democratic Republic is struggling to make progress on the clean-cooking front. In Lao People's Democratic Republic, only 4 per cent and 2 per cent of urban and rural households, respectively, use electricity and gas for cooking, while two thirds of households still use firewood, and around one quarter use charcoal. Similarly, in Sri Lanka, as fuelwood is the major source of energy for cooking, especially

in rural areas, household energy consumption is still dominated by biomass. The achievement of both affordability and cleanliness has been a challenge in some Asian countries. Addressing these gaps and challenges need comprehensive strategies that can increase overall awareness, bridge the financing gaps and accelerate technological progress, which governments are working towards.

While parts of Asia have seen access to clean cooking outpace growth in population, in sub-Saharan Africa, population growth in recent years has outstripped the number of people having access to clean-cooking technologies by a ratio of four to one. Sub-Saharan African countries, such as Benin, Cabo Verde and Guinea stress cooking in their 2018 reviews, showing political willingness to drive change. However, neither Niger's nor Mali's review outlines a strategy to address the near complete lack of clean-cooking facilities.

#### **C. Substantially increase the share of renewable energy in the global energy mix**

All the countries that submitted reviews in the 2018 cycle reported on the status or progress of renewable energy, which shows a **strong momentum worldwide**. Most countries indicate their confidence in achieving the SDG7.2 target on renewables.

Modern forms of renewable energy, such as bioenergy, geothermal, hydropower, solar and wind, are the most frequently mentioned renewable sources in the reviews submitted. That also aligns with the global trend that these most technologically advanced sources count for over half of the total final energy consumption from renewable sources obtained worldwide as of 2015.

The Ministerial Declaration of the 2018 High-level Political Forum calls upon Governments and all stakeholders to accelerate the pace of transition towards renewable energy, especially in end-use sectors such as transport, buildings, agriculture and industry. Indeed, renewable energy made impressive gains in the electricity sector albeit from a low base, but these gains are not being matched in other end-use sectors, such as transport, industry, and heating and cooling, which together account for 80 per cent of global energy consumption. In the 2018 reviews, this perspective is also scantily mentioned or presented with examples.

In the electricity sector, most of the reviews focus overwhelmingly on electricity generation, but not enough attention is given to the **development of transmission and distribution systems**, where investments typically lag.

Lithuania highlights a critical issue omitted from most of the reviews: the resilience of transmission and distribution systems in conjunction with increased levels of electrification and energy usage.

**Market design** is a critical component of boosting renewable penetration, yet most countries do not address the importance of competitive markets and stable and predictable regulatory frameworks.

#### Best practices – Renewables

In **Australia**, the use of renewable energy continues to rise, and currently provides around 16 per cent of Australia's electricity. In 2017, clean energy investment was Australia's highest on record, placing Australia seventh in the world. Several state and territory governments are undertaking procurements for grid-scale battery storage facilities in South Australia, and the world's largest lithium ion battery (100 MW/129 MWh) has been installed there, providing grid stability to the South Australian network, where close to 50 per cent of energy generation is from wind and solar.

**Lithuania** is seeking to increase the share of renewables with the ambition that they will account for 45 per cent by 2030, and 80 per cent by 2050, with renewables dominating in the electricity, heating and cooling and transport sectors.

**Mexico** is making dynamic progress towards reaching its target of 35 per cent of electricity generated by clean sources by 2024. The use of Clean Energy Certificates accrediting production from sustainable sources, coupled with competitive auctions for solar and wind, boosted the share of renewables and resulted in low prices. Furthermore, a National Atlas of Areas with High Energy and Renewable Energy Potential promotes the use of renewable energy resources.

## D. Double the rate of energy efficiency improvement

The Ministerial Declaration of the 2018 High-Level Political Forum calls upon Governments and all stakeholders to accelerate the pace of energy efficiency across all sectors of the economy, including cooling and district heating, rationalizing inefficient fossil fuel subsidies and promoting innovation and investments in energy efficiency across all sectors of the economy.

The Global Agenda for Accelerated SDG7 Action calls for the “scaling up of investments in energy efficiency across all sectors of the economy, supported by well-designed, evidence-based policies (e.g., building codes, minimum energy performance standards, energy performance labels, cost-reflective energy tariffs and fuel economy requirements), as well as by regional, national and local action plans (with effective enforcement and monitoring)”, and concludes that despite concerted energy efficiency programs in place by multiple countries, the “rate of global energy efficiency progress falls far short of the annual rate of 2.7 per cent needed between now and 2030”.

With the exception of five countries, energy efficiency is mentioned as part of the country strategies to implement SDG7, but more often than not, **detailed strategies and ambitious cross-sectoral integrated policy approaches that promote improvements through targets or fiscal incentives are not elaborated on.**

Whenever a detailed strategy is included in reviews, the countries typically **focus more on demand-side** energy efficiency measures such as building codes, energy performance requirements for construction and renovation, energy performance standards and labels for electric and electronic products. **Supply-side measures tend to remain untapped** in electricity generation, transmission and distribution.

The Global Agenda stresses the importance of developing cost-reflective energy tariffs, and reforming damaging fossil fuel subsidies both in energy consumption and energy supply, an aspect that is ignored in most of the reviews. Strategies in Egypt and Togo for the promotion of fuel-economy standards, phasing out subsidies for fossil fuels, and low emission transport are encouraging examples.

There appears to be a **strong correlation between progress on energy efficiency and the existence of a dedicated energy-efficiency fund** by the Government to promote investments in energy efficiency.

### Best practices – Efficiency

The voluntary national review from **Greece** contains a particularly **well fleshed-out action plan on boosting energy efficiency**. An energy efficiency obligation programme has been in place since January 2017, requiring energy suppliers to make savings against an annual target, based on the market share of the obligated entity, targeting oil suppliers and the transport sector. In the building sector, which counts for almost half of the energy consumption, the focus has been on the refurbishment and renovation of the existing building stock in line with new efficiency obligations to improve thermal insulation among other factors. The “In-house Saving II” **public-private venture**, coupled with Greece’s state energy audit policy, operates **with the active participation of the banking sector**, with 10 partner banks providing no- or low-interest loans to house and shop owners for replacing door and window frames, boiler and heating systems and external wall insulation to ensure best heating and cooling performance and insulation, resulting in considerable energy savings. The programme is funded by the National Fund for Entrepreneurship and Development and is expected to result in annual energy savings of up to 1 billion kWh.

In 2014, the **Government of Hungary** launched the Warmth of Homes Programme, financed from the national budget of €102 million. The purpose of the programme is to provide households with non-refundable financial support throughout the country to increase the energy efficiency of homes. Within the framework of the programme, 10 sub-programmes have been announced to improve the energy efficiency of residential buildings and the installation of renewable energy systems. The programme has contributed to the modernization of more than 200,000 households, totaling approximately €98-million worth of investment. The programme has reached 5 per cent of Hungarian households over the course of the last three years. These grants have resulted in CO<sub>2</sub> emission reductions of 99,000 tons/year and energy savings of 260 million kWh/year.

## E. Financing SDG7

The doubling of financing from the current levels of US\$ 500 billion to US\$ 1 to 1.2 trillion a year until 2030 is needed in order to achieve SDG7. **Financing SDG7 is, unfortunately, one of the least addressed areas in the reviews.**

There is scant mention of the critical aspect of financing investment in energy infrastructure. Only a small fraction of the reviews deal in any meaningful detail with the **role of government support schemes** for renewables or efficiency investments, tax incentives and other instruments.

A clearly defined and consistently enforced legal and regulatory framework — such as an energy law or set of laws regulating energy markets and investments in the energy sector — is critical to attract much needed private investment in the energy sector. Only a small minority of the reviews reference the existence of or need for such a framework. Viet Nam specifically identifies the lack of a law on renewable energy as an obstacle to faster deployment of renewables.

### Best practices – Financing

In **Canada**, the government-owned green bank, Clean Energy Finance Corporation, mobilizes capital investment in renewable energy, low-emission technology and energy efficiency. It promotes **private sector investment in clean energy technologies via debt and equity financing and innovative financial instruments**. As of December 2017, the Clean Energy Finance Corporation had committed more than \$5.8 billion to 85 clean-energy projects valued at more than \$16 billion.

**Ireland’s** National Development Plan 2017-2027, published in February 2018, includes “transition to a low-carbon and climate-resilient society” as one of its 10 strategic priorities and **allocates some €20 billion in capital funding for energy efficiency, renewable energy and energy security projects** over the next 10 years. Specifically, projects will include support for changing oil-fired boilers to heat pumps, along with the provision of roof solar heating, in at least 170,000 homes; a new Renewable Electricity Support Scheme to support up to 4,500 MW of additional renewable electricity by 2030; energy research funding to accelerate diversification away from fossil fuels to green energy, including wind, wave, solar, biomass, biofuels and biogas and hydrogen.

**Egypt** has made significant progress in cutting inefficient fossil fuel subsidies and redirecting funds to better targeted conditional and unconditional cash transfer programmes.

## F. Sustainable energy technology innovation

Less than one third of the reviews contain any reference to energy innovation and technology, a crucial aspect of accelerating SDG7 action, with special regard to the end-use sectors of transport, industry and buildings, through increased public and private investment and increased international co-operation.

The critical role of **digitization and smart appliances** in energy transition is not the focus of attention in any of the reviews from developing countries, while it features highly in developed countries.

Australia, Canada, the United Arab Emirates, Ireland, Greece, Lithuania and Mexico highlight prominently the importance of sustainable energy innovation in their reviews, although most do not have much detail on the programmes.

### Best practices – Innovation

**Masdar**, a flagship energy innovation project in the **United Arab Emirates**, excels in renewable energy innovation and sustainable urban development. Masdar also manages the US\$ 4 million Zayed Future Energy Prize, which rewards pioneering innovators and visionaries whose achievements have furthered the proliferation of renewable energy solutions. In addition, Masdar's Clean Energy division is a leading developer and operator of utility-scale, grid-tied projects; small-scale applications providing energy access to communities away from the electricity grid; and carbon-abatement projects. Since 2006, Masdar has invested in renewable energy projects with a combined value of US\$ 8.5 billion. Masdar's share of this investment is US\$ 2.7 billion.

## G. Enhancing capacity-building

While flagged as a priority in the Ministerial Declaration of the 2018 High-level Political Forum, **less than one third of the 2018 reviews outlined plans for scaling up capacity-building** and education to develop the necessary human and institutional skills and capacities in support of universal access and energy sector transformation that are critically important elements.

Knowledge sharing, learning by doing, pilot studies, education and capacity-building programmes are a few examples of capacity-building interventions. The capacity-building activities reported in the 2018 reviews are **narrowly focused and not tightly aligned with the needs of the energy sector**.

Energy-related technical training is mentioned most frequently in other capacity-building activities.

### Best practices – Capacity-building

**Canada** launched the Clean Energy, Education and Empowerment (C3E) initiative to promote **gender equality in the clean energy sector**, increasing education and employment opportunities. It also supports the International Energy Agency's Clean Energy Transitions Programme, which **helps developing countries enhance their capacity** to develop and deploy clean energy technologies. The Government of Canada co-launched the "Equal by 30" campaign, which aims to bring together leadership from across the energy sector to find common ground for action to achieve equal pay, equal leadership and equal opportunities by 2030.

**Singapore** pays special attention to developing a steady pool of well-trained workers to manage the country's electrical system. It instituted a **vocational training programme** in schools to build the technical competency of the local workforce.

**Togo** plans to deploy solar academies to train 3,000 technicians over the period 2017–2018, in the five regions of the country.

## H. Strengthening interlinkages between SDG7 and other Goals

The Global Agenda calls for the harnessing of cross-sectoral linkages to maximize multiple benefits and synergies by promoting energy as an enabler for all the Sustainable Development Goals, and a unified approach to achieving SDG7 and, at the same time, meeting the goals of the Paris Agreement on Climate Change. The majority of the reviews **make no direct connection between the specific country's energy goals and its nationally determined contributions** under the Paris Agreement, which underplays the **critical interplay between SDG7 and SDG13** (climate action).

The Global Agenda calls for the integration of **gender equality** and women's empowerment into all energy actions to advance the Sustainable Development Goals. Linkages between SDG5 (gender equality) and SDG7 are rarely spelled out in the reviews.

The **linkages between SDG7 and SDG11** (sustainable cities and communities) has also been given only sporadic attention, despite the fact that SDG11 was also reviewed in 2018. Promotion of sustainable and low-carbon cities with reliable and affordable public transportation systems and



energy-efficient built environments fueled by renewable energy are of critical importance for the achievement of SDG7. The United Arab Emirates provides inspiring practices and potentially scalable pilot projects in this area.

Few countries highlight the role of international partnerships (SDG17) for achieving SDG7.

#### **Best practices – Interlinkages**

**Jamaica** emphasized that its nationally determined contributions in the context of the Paris Agreement will be achieved primarily through actions in the energy sector. The country is developing a Renewable Energy Nationally Appropriate Mitigation Action (NAMA) through which the expansion of electricity generation from renewable resources will be facilitated.

**Malta** is participating in the “Greening the Islands” web platform to connect innovators to promote sustainable island projects. It encourages the replication of such projects in as many locations as possible, including through a web-based application.

**Paraguay**, the world’s largest producer, per capita, and largest exporter of clean renewable electricity, supports the Sustainable Water and Energy Solutions agreement concluded between the Department of Economic and Social Affairs and Itaipu Binacional to promote the sustainability of water and energy in line with SDG6 and SDG7. Under the partnership, a model office was established on the Paraguayan side of the dam with the aim of creating a global sustainability network to provide a platform to support the implementation of the Sustainable Development Goals.

### III. Conclusion

This report discussed the main findings related to SDG7 in the voluntary national reviews submitted by 46 countries to the 2018 High-level Political Forum on Sustainable Development. It documented the varied approaches that countries are taking to implement SDG7 and respond to country-specific challenges according to their national circumstances, while remaining cognizant of the indivisible nature of the Sustainable Development Goals. More importantly, it bears emphasizing that the voluntary national review is a process, of which this report is but one component.

SDG7 was reviewed for the first time in 2018 and the voluntary national reviews provided critically important insights

into the challenges and opportunities that countries face in achieving the affordable and clean energy goal. Going forward, leveraging the review process, with special regard to best practices, lessons learned and major shortcomings, is essential for accelerating progress towards all the Sustainable Development Goals. This report aimed to provide guidance for reviews in future years. It is also hoped that it will serve as useful background information for the United Nations Climate Change Conference, the Secretary-General's Climate Summit in September 2019, the 2019 midpoint review of the Decade of Sustainable Energy for All (2014–2024), and the work of the multi-stakeholder Technical Advisory Group on SDG7.

# References

Ministerial Declaration of the 2018 High-level Political Forum on Sustainable Development, convened under the auspices of the Economic and Social Council, on the theme “Transformation towards sustainable and resilient societies” (E/HLS/2018/1). Available from [http://www.un.org/ga/search/view\\_doc.asp?symbol=E/HLS/2018/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=E/HLS/2018/1&Lang=E).

Economic and Social Council President’s Summary of the 2018 High-level Political Forum on Sustainable Development. Available at [https://sustainabledevelopment.un.org/content/documents/205432018\\_HLPF\\_Presidents\\_summary\\_FINAL.pdf](https://sustainabledevelopment.un.org/content/documents/205432018_HLPF_Presidents_summary_FINAL.pdf).

Report of the High-level Political Forum on Sustainable Development, convened under the auspices of the Economic and Social Council at its 2018 Session (E/HLPF/2018/7). Available at <https://sustainabledevelopment.un.org/hlpf/E/HLPF/2018/7>.

United Nations, *The Sustainable Development Goals Report 2018* (New York, 2018). Available at <https://unstats.un.org/sdgs/files/report/2018/TheSustainableDevelopmentGoalsReport2018.pdf>.

United Nations and others, *Accelerating SDG7 Achievement: Policy briefs in support of the first SDG7 review at the UN High-level Political Forum 2018* (New York, 2018). Available at [https://sustainabledevelopment.un.org/content/documents/18041SDG7\\_Policy\\_Brief.pdf](https://sustainabledevelopment.un.org/content/documents/18041SDG7_Policy_Brief.pdf).

United Nations and others, “The global agenda for accelerated SDG7 action”, *Accelerating SDG7 Achievement: Policy briefs in support of the first SDG7 review at the UN High-level Political Forum 2018* (New York, 2018).

Compilation of the main messages for the 2018 voluntary national reviews (E/HLPF/2018/5). Available at [http://www.un.org/ga/search/view\\_doc.asp?symbol=E/HLPF/2018/5&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=E/HLPF/2018/5&Lang=E).

United Nations, 2017 Voluntary National Reviews: Synthesis report. Available at [https://sustainabledevelopment.un.org/content/documents/17109Synthesis\\_Report\\_VNRs\\_2017.pdf](https://sustainabledevelopment.un.org/content/documents/17109Synthesis_Report_VNRs_2017.pdf).

United Nations, Handbook for the preparation of Voluntary National Reviews. Available at [https://sustainabledevelopment.un.org/content/documents/17354VNR\\_handbook\\_2018.pdf](https://sustainabledevelopment.un.org/content/documents/17354VNR_handbook_2018.pdf).

International Energy Agency, International Renewable Energy Agency (IRENA), United Nations, World Bank Group, World Health Organization (WHO), *Tracking SDG7: The Energy Progress Report 2018* (Washington D.C., 2018). Available at <https://openknowledge.worldbank.org/handle/10986/29812>.

International Renewable Energy Agency (IRENA), *Global Energy Transformation: A Roadmap to 2050* (Abu Dhabi, 2018). Available at [http://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Apr/IRENA\\_Report\\_GET\\_2018.pdf?la=en&hash=9B1AF0354A2105A64CFD3C4C0E38ECCEE32AAB0C](http://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Apr/IRENA_Report_GET_2018.pdf?la=en&hash=9B1AF0354A2105A64CFD3C4C0E38ECCEE32AAB0C).

International Energy Agency, *World Energy Outlook*. Available at <https://www.iea.org/weo2017/>.



**HIGH-LEVEL POLITICAL FORUM  
ON SUSTAINABLE DEVELOPMENT**

