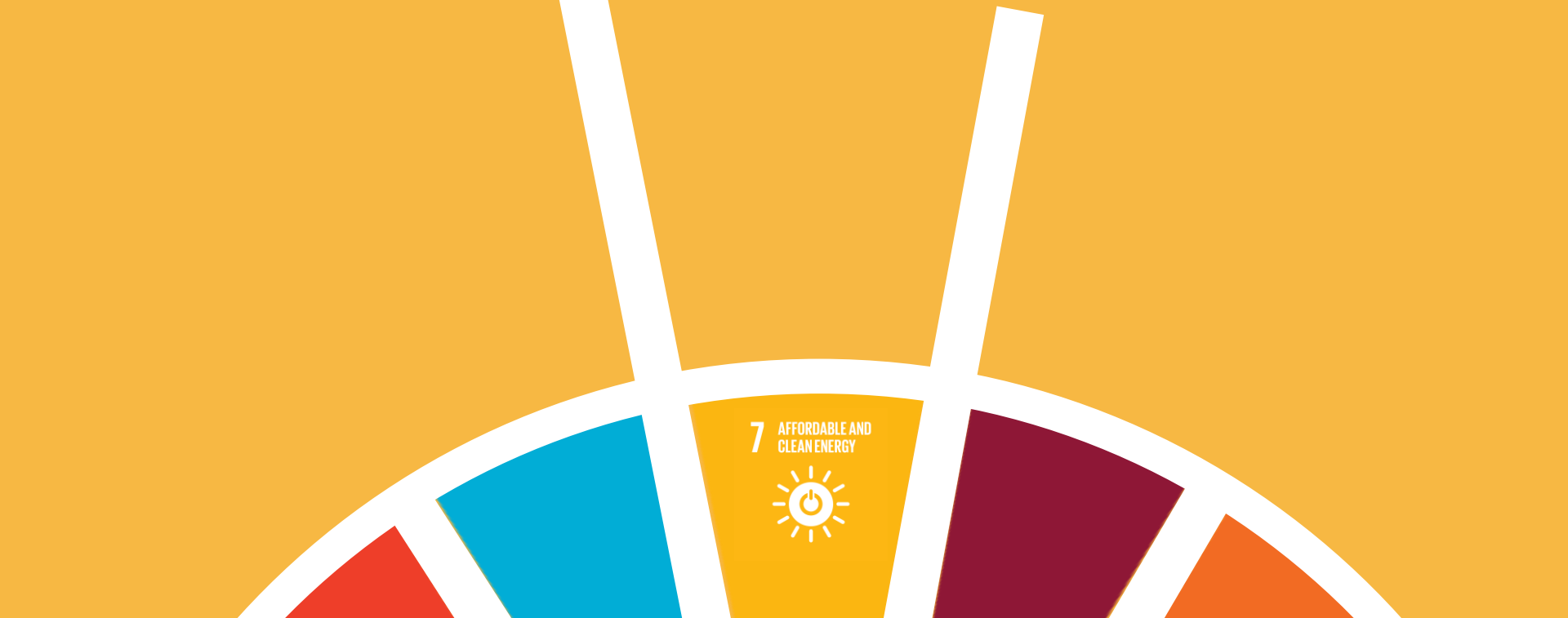
ACCELERATING SDG7 ACHIEVEMENT

POLICY BRIEFS IN SUPPORT OF THE FIRST SDG7 REVIEW AT THE UN HIGH-LEVEL POLITICAL FORUM 2018



UNITED NATIONS
DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS

Summary for Policy Makers

Energy is central to the achievement of both the **2030 Agenda for Sustainable Development** and the **Paris Agreement on climate change**.

- ***We must step up****: we will fall short of meeting SDG7 without urgent action*
- ***SDG 7 is within reach:*** *advances in technologies, rapid cost declines (e.g. renewables) and policy shifts*
- *Achieving SDG 7 will* ***catalyse actions to combat climate change and reach the other SDGs***
- *A '****Global Agenda for Accelerated SDG 7 Action****' is proposed as a foundation for concerted action*
- *A****ll stakeholders should step up and focus*** *their efforts in support of SDG 7*

The Global Agenda for Accelerated SDG 7 Action

I. Advancing SDG 7 implementation

- Make clean cooking solutions a top political priority
- Close the electricity access gap
- Accelerate the pace of transition towards renewable energy
- Harness the potential of decentralised renewable energy solutions
- Scale up investments in energy efficiency across all sectors of the economy
- Double the financing for SDG7 globally
- Scale up capacity building and education
- Enhance innovation systems, including research, development, deployment and diffusion
- Invest in data collection systems and data analysis

II. Strengthening interlinkages between SDG 7 and other SDGs

- Harness the potential of cross-sectoral interlinkages to maximise multiple benefits and synergies
- A unified approach is required to achieve SDG 7 and meet the goal of the Paris Agreement simultaneously

The Global Agenda for Accelerated SDG 7 Action

- Integrate gender equality and women's empowerment into all energy actions to advance the SDGs
- Promote sustainable and low carbon cities

III. Addressing regional priorities

- Strengthen cooperation at the regional level
- Prioritise ending energy poverty in the most vulnerable countries.

IV. Accelerating transformation towards a sustainable, inclusive and equitable energy future

- Promote transformational investments
- Transform human behaviour from energy-intensive lifestyles to more sustainable patterns
- Strengthen decision-making processes by reinforcing improvements in energy data collection, indicators and monitoring efforts
- Harness the power of all stakeholders to drive change

Making it happen

ADVANCING SDG7 IMPLEMENTATION IN SUPPORT OF THE 2030 AGENDA

Policy Brief #1 Achieving Universal Access to Electricity

Policy Brief #2 Achieving Universal Access to Clean and Modern Cooking Fuels, Technologies and Services

Policy Brief #3 Substantially Increase the Share of Renewable Energy in the Global Energy Mix

Policy Brief #4 Doubling the Global Rate of Improvement in Energy Efficiency

Policy Brief #5 Financing SDG7

Policy Brief #6 Sustainable Energy Technology Innovation

Policy Brief #7 Enhancing Capacity Building for SDG 7

POLICY BRIEF #1 Achieving Universal Access to Electricity

CURRENT STATUS

About **1 billion** without access to electricity

Grid electrification has been the source of **almost all energy access** gained since 2000 while **decentralised options** are the least-cost option for **60%** people currently lacking access

Current progress is promising in **many parts of Asia** and **some countries in sub-Saharan Africa**.

670 million + will remain **without electricity in 2030** based on recent trends, with **90%** in **sub-Saharan Africa**.

Developed by IEA, UNDP and IRENA
In collaboration with the European Commission, UNESCWA, UNECE, UNECA, UNESCAP, EnDev, PBL Netherlands Environmental Assessment Agency, World Bank and Norad

POLICY BRIEF #1 Achieving Universal Access to Electricity

PRIORITY ACTIONS

- **Guarantee** leadership, commitment and strategic planning
- **Identify** a strong champion institution for electrification programmes
- **Enable** private sector participation
- **Integrate** other development goals and opportunities into household electrification strategies
- **Support** technology development and standards
- **Address** affordability

Developed by IEA, UNDP and IRENA
In collaboration with the European Commission, UNESCWA, UNECE, UNECA, UNESCAP, EnDev, PBL Netherlands Environmental Assessment Agency, World Bank and Norad

POLICY BRIEF #2 Achieving Universal Access to Clean and Modern Cooking

CURRENT STATUS

About **3 billion** lack access to clean and modern cooking fuels and technologies, leading to

Some **4 million deaths** each year, mostly among women and children, are caused by household air pollution due to the lack of clean and modern cooking energy

In **some parts of Asia** and **Sub-Saharan Africa,** countries like **China, India Indonesia** and **Ghana** are taking a strong stance on clean cooking through government led policies, programmes and investment

2.3+ billion will remain **without clean cooking in 2030** based on recent trends, most living in **sub-Saharan Africa**.

Developed by WHO, IEA, UNDP, World Bank
In collaboration with EnDev

POLICY BRIEF #2 Achieving Universal Access to Clean and Modern Cooking

PRIORITY ACTIONS

- **Scale up** cooking fuels and technologies that are clean for health and the environment to maximise benefits of the energy transition
- **Mainstream** multi-sectoral action for clean cooking across policies and programmes for health, gender, climate, and development.
- **Build** an enabling policy environment for programmes that support growth and expansion of clean and efficient cooking solutions
- **Mobilise** funds and innovative financing to scale up the availability of affordable clean cooking solutions and stimulate further private investments
- **Spur** innovation in the development clean cooking solutions that meet local cultural, social and gender needs

Developed by WHO, IEA, UNDP, World Bank
In collaboration with EnDev

POLICY BRIEF #3 Substantially Increase the Share of Renewable Energy in the Global Energy Mix

CURRENT STATUS

- Encouraging progress in renewable energy, especially in the power sector. Renewables represented **22.8%** of global electricity generation in 2015.
- Action on energy use for heating and transport is lagging, with a limited increase in renewable energy shares seen in recent years.
- The share of renewables in total final consumption grew marginally in 2015 to reach **17.5%**, up from 16.7% in 2010.
- Based on current trends, the renewables share is expected to reach 21% by 2030 – well short of the SDG 7 target and climate alignment.
- Significant additional efforts are therefore needed to achieve the needed acceleration.

Developed by IRENA, UNECA, UNESCWA, UNECE, IEA, Federal University of Rio de Janeiro, REN21, World Bank and Federal Ministry for Economic Cooperation and Development, Germany

POLICY BRIEF #3 Substantially Increase the Share of Renewable Energy in the Global Energy Mix

PRIORITY ACTIONS

- **Enhance** policy action focused on end-use sectors
- **Increase** substantially the share of renewable energy in power generation
- **Adapt** market design to a renewables-based electricity system, including the effective articulation of distributed energy resources
- **Pursue** simultaneous and synergetic deployment of renewable energy and energy efficiency as interrelated transition pillars
- **Support** technological R&D funding and technological improvement to support the transition
- **Ensure** a broader enabling environment that considers the socio-economic dimensions
- **Harness** the interlinkages with other SDGs through a holistic approach

Developed by IRENA, UNECA, UNESCWA, UNECE, IEA, Federal University of Rio de Janeiro, REN21, World Bank and Federal Ministry for Economic Cooperation and Development, Germany

POLICY BRIEF #4 Global Rate of Improvement in Energy Efficiency

CURRENT STATUS

90% of **Nationally Determined Contributions** submitted under the Paris Agreement mention **energy efficiency**

The **International Energy Agency's Sustainable Development Scenario** shows energy efficiency accounting for **44%** of the cumulative greenhouse gas emissions reductions by 2040

The current rate of global **energy efficiency progress** (measured by improvement in energy intensity) **falls far short** of the annual rate of 2.7% **needed between now and 2030**

Developed by UN Environment, Copenhagen Centre on Energy Efficiency, International Energy Agency
In collaboration with UNECE, UNESCWA, UNIDO, Federal University of Rio de Janeiro and FIA Foundation

POLICY BRIEF #4 Global Rate of Improvement in Energy Efficiency

PRIORITY ACTIONS

- Well-designed, implemented, and enforced **energy efficiency policies and action plans**
- Combined action on energy efficiency and certain **refrigerant gases**
- Robust energy efficiency **data collection systems**
- Improve progress in **supply side efficiency**
- **Maintain global attention and advocacy** on energy efficiency as a priority development action area
- Develop **cost-reflective energy tariffs**, and reform damaging fossil fuel subsidies

Developed by UN Environment, Copenhagen Centre on Energy Efficiency, International Energy Agency
In collaboration with UNECE, UNESCWA, UNIDO, Federal University of Rio de Janeiro and FIA Foundation

CURRENT STATUS

Private finance is central to meeting SDG 7. **Public finance will need to catalyse far greater** sums of private investment

Annual global financing for SDG 7 needs to double, from the current level of **USD 500 billion** to **USD 1.0 to 1.2 trillion** per year to 2030

Investment is not spread equally; developed and middle-income countries are accessing finance, but **many developing countries are currently left out**

There is a **big financing gap for universal access to clean fuels**, with current annual investment at USD 32 to 240 million, versus annual funding needs of USD 4.4 billion to 2030

Developed by UNDP and UN Environment
In collaboration with IRENA, UN ECE, UN ESCWA, SEforAll and World Bank

PRIORITY ACTIONS

- **Prioritise** universal access to electricity and clean fuels (private sector off-grid solutions, increased investment in clean cooking)
- **Implement** existing good practice policies and financial de-risking instruments, particularly in countries left behind
- **Create** a level playing field for low-carbon energy, through direct financial incentives, carbon pricing and fossil-fuel subsidy reform
- **Reform** domestic financial sectors, developing depth and liquidity in finance for low-carbon energy infrastructure
- **Incorporate** digital solutions (mobile money, data risk analytics) into policy making, enabling new business models and more inclusive financial systems

Developed by UNDP and UN Environment
In collaboration with IRENA, UN ECE, UN ESCWA, SEforAll and World Bank

POLICY BRIEF #6 Sustainable Energy Technology Innovation

CURRENT STATUS

In recent years key sustainable energy technologies experienced impressive cost reductions. Innovation in **power generation technologies** will further reduce costs and accelerate uptake.

Innovation priorities are **shifting.**

The most pressing innovation needs are now in the **end-use sectors** of **transport, industry and buildings**, as well as **design and operation** of the **whole energy system.**

Higher investment in innovation is needed to achieve the **cost reductions** required.

Mobilising the innovation capacity of the **private sector** is of prime importance.

Developed by UNIDO, IRENA, IEA and UN Environment
In collaboration with CTCN

POLICY BRIEF #6 Sustainable Energy Technology Innovation

PRIORITY ACTIONS

- **Increase** public sector investment in RD&D.
- **Improve** globally-shared understanding by key public and private sector investors of critical sustainable energy innovation needs.
- **Enhance** existing data collection and information sharing on public and private sector spending for sustainable energy technology innovation.
- **Support** knowledge diffusion and cross-border cooperation.
- **Encourage** harmonisation of international technical standards and quality control requirements to facilitate cross-boarder trade of innovative sustainable energy technologies.
- **Champion** a systematic approach to innovation that also considers innovations in systems, processes, market design and business models.

Developed by UNIDO, IRENA, IEA and UN Environment
In collaboration with CTCN

CURRENT STATUS

A number of existing capacity building strategies and activities

Human and institutional CB activities are contextual and often designed as 'one off' interventions

Gender aspects of capacity building are often neglected

Guidelines for national and regional CB are presented in the *Implementation Framework for Energy Capacity Building*

Several **capacity needs assessment tools** been developed for the energy sector, but often have **not been used** in national plans and training programmes, or by educational institutions or the private sector.

Developed by TERI University and UNDP
In collaboration with UN DESA and FIA Foundation

POLICY BRIEF #7 Enhancing Capacity Building for SDG 7

PRIORITY ACTIONS

- **National governments** must take the lead in developing human and institutional capacities
- **Establish a platform** or integrate/consolidate existing platforms and institutions dealing with capacity building.
- Effect CB at the country and regional level by **designating national focal institutions** and **adequately resourcing** them.
- Define **cross-sectoral integrated targets** between SDG7 and other SDGs, and track their achievement through an appropriately designed **monitoring and evaluation framework**.
- **Create a network** of the global and national institutions identified above to institutionalise CB for SDG7 and related SDGs.
- Refresh and re-align the **curriculum in higher education institutions**

Developed by TERI University and UNDP
In collaboration with UN DESA and FIA Foundation

STRENGTHENING INTERLINKAGES BETWEEN SDG7 AND OTHER SDGS

Policy Brief #8 Interlinkages among Energy, Poverty and Inequalities

Policy Brief #9 Water-Energy-Food Nexus for the Review of SDG 7

Policy Brief #10 Health and Energy Linkages - Maximising Health Benefits from the Sustainable Energy Transition

Policy Brief #11 Education and Energy

Policy Brief #12 Global Progress of SDG7 - Energy and Gender

Policy Brief #13 Interlinkages between Energy and Jobs

Policy Brief #14 Interlinkages between Energy and Sustainable Cities

Policy Brief #15 Interlinkages between Energy and Climate Change

Policy Brief #16 Interlinkages between Energy and Transport

Policy Brief #17 Policy Brief on Energy in Situations of Displacement

CURRENT STATUS

SDG 7 is a condition for economic development, poverty alleviation (**SDG 1**) and reducing inequalities (**SDG 10**)

Access to energy is not a binary concept: successive thresholds ("Tiers") of supply allow for increased use of end-use equipment

The **poorest** often end up **paying disproportional shares** of income for energy, also due to upfront costs for energy efficient equipment

Investment in sustainable energy is often impeded by a **lack of legal frameworks**, **underdeveloped economies** and **weak financial sectors**

Developed by UNDP and University of Bergen
In collaboration with UNESCAP and the Federal Ministry for Economic Cooperation and Development Germany

PRIORITY ACTIONS

- **Acknowledge** the quality of energy access in policy targets
- **Analyse** the investment risks contributing to high financing costs and address the risks in a systemic and integrated manner
- **Prioritise** policy de-risking instruments as these offer the most cost-effective solutions
- **Integrate** strategies for energy access with promotion of productive use of energy and support for energy efficiency investments by low income households

Developed by UNDP and University of Bergen
In collaboration with UNESCAP and the Federal Ministry for Economic Cooperation and Development Germany

POLICY BRIEF #9 Water-Energy-Food Nexus For The Review of SDG 7

CURRENT STATUS

The **WEF Nexus** approach is **increasingly used at the project level**, but **progress has been much slower** in mainstreaming the Nexus approach into policy making, institutional contexts and planning processes

Implementation varies depending on **country situations and geography**, while **governance issues** are the **most challenging**

Gender aspects are often **overlooked** in the use of the WEF Nexus approach

Nexus approach can **reduce costs and risks**, **attract increased investments and financial support**, and **offer opportunities for stakeholder dialogues** and **public awareness-raising**

Developed by FAO
In collaboration with OPEC Fund for International Development, IRENA, IEA, UNECE, UNICEF, The European Commission, BMZ, UN Environment, ENERGIA and UNESCWA

POLICY BRIEF #9 Water-Energy-Food Nexus For The Review of SDG 7

PRIORITY ACTIONS

- ⇨ Document, advertise and further support **successful practices**
- ⇨ **Fill knowledge gaps**, in particular through support to knowledge platforms and the improvement of data collection
- ⇨ Strengthen attention to **gender aspects**, and financial support to SMEs
- ⇨ Keep fostering **multi-stakeholder dialogues** at all levels and with a wide variety of partners and **prioritise capacity development** at the local government and community level
- ⇨ Strengthen **participatory approaches** and address power differences
- ⇨ Strengthen the **capacity of national decision makers**, building on existing structures and mechanisms
- ⇨ Promote horizontal and vertical **coordination in planning**

Developed by FAO
In collaboration with OPEC Fund for International Development, IRENA, IEA, UNECE, UNICEF, The European Commission, BMZ, UN Environment, ENERGIA and UNESCWA

POLICY BRIEF #10 Health and Energy Linkages – Maximising health benefits from the sustainable energy transition

CURRENT STATUS

Some **90%** of population is at risk for heart and lung disease due to air pollution exposure caused by inefficient use of energy

Around **1/3** of health care facilities in 11 Sub-Saharan African countries lack access to reliable electricity, impeding the expansion & delivery of health services

The health of **3 billion** people lacking access to clean household energy for cooking, heating and lighting could be vastly improved by meeting SDG 7

All of SDG 7 target areas are critical enablers for universal health coverage and will advance progress towards achievement of **SDG 3 (health)**

Developed by WHO
In collaboration with Climate and Clean Air Coalition, Global Alliance for Clean Cookstoves, UN Environment, UNICEF and United for Energy Efficiency

POLICY BRIEF #10 Health and Energy Linkages – Maximising health benefits from the sustainable energy transition

PRIORITY ACTIONS

- **Prioritise** investments in renewable energy, energy efficient networks and buildings, as well as pollution-free public transport for healthy cities
- **Ensure** health facility needs are articulated in national energy plans and investments through enhanced cooperation between health and energy sector decision-makers
- **Identify** incentives and market models to secure clean and sustainable energy access for health facilities and to promote local industry to provide health facility energy access in resource-constrained settings
- **Increase** the adoption of **'clean household energy'** solutions through innovative financing, national subsidy reforms, and building more markets for clean household energy

Developed by WHO
In collaboration with Climate and Clean Air Coalition, Global Alliance for Clean Cookstoves, UN Environment, UNICEF and United for Energy Efficiency

POLICY BRIEF #11 Education and Energy

CURRENT STATUS

Globally **over 291 million** children go to primary schools without any electricity, **188 million** in **sub - Saharan Africa**, **South Asia** and **Latin America**.

Globally about **103 million** young people still lack basic literacy skills, almost **60 % of them female**.

Youth literacy levels tend to be lower in countries with **electrification rates below 80%**

Efforts to electrify schools have lagged behind, leaving **millions of children** without access to electricity.

Developed by UNICEF
In collaboration with UN DESA

POLICY BRIEF #11 Education and Energy

PRIORITY ACTIONS

- **Increase** efforts to gather quantitative and qualitative data and information on access to energy in educational facilities
- **Adopt** enabling policies that incentivise and prioritise investment in energy access in the education sector
- **Reinforce** collaboration and coordination among stakeholders to facilitate energy and education infrastructure and services
- **Catalyse** support through stakeholder engagement, public advocacy and outreach to influence decision makers, secure leadership and commitment
- **Enhance** public awareness and education to adults and children on sustainable energy, and encourage youth innovation

Developed by UNICEF
In collaboration with UN DESA

POLICY BRIEF #12 Global Progress of SDG7 - Energy and Gender

CURRENT STATUS

1 billion + lack access to electricity

Close to **3 billion** lack access to clean cooking

Women bear the **greatest burden** of this energy poverty

Household air pollution is responsible for about **2.8 million deaths** every year, mostly among women and children

Under current policies and trends, **2.3 billion** people will still **lack access to clean cooking facilities in 2030**.

A number of actors have started working on the intersection of gender, energy and sustainable development, and in advancing **gender equality**, social inclusion, and **women's empowerment** in the energy sector.

Developed by ENERGIA, World Bank Group/ESMAP and UN Women
In collaboration with SEforAll and IEA

PRIORITY ACTIONS

- **Integrate** gender and energy actions within all SDGs, and establish gender-responsive global and national energy sector policies backed by evidence.
- **Promote and invest** more in clean cooking technologies and decentralised sustainable energy technologies that support gender equality and women's economic empowerment
- **Reduce** barriers in energy industry for women, and **increase** their representation on national and global energy bodies
- **Raise** efforts to promote women-centric business models
- **Support** international and national energy and climate change programmes and mechanisms to integrate gender concerns in programming

Developed by ENERGIA, World Bank Group/ESMAP and UN Women
In collaboration with SEforAll and IEA

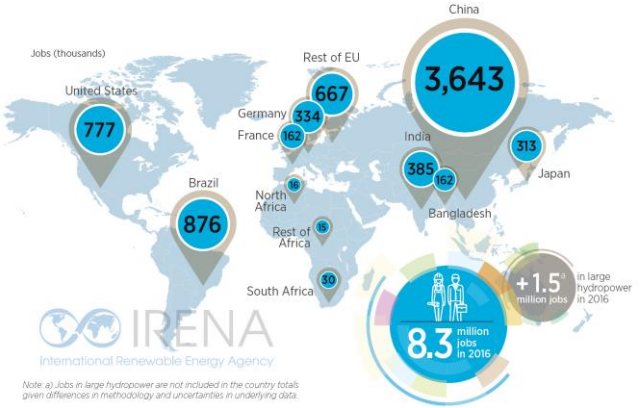
POLICY BRIEF #13 Interlinkages between Energy and Jobs

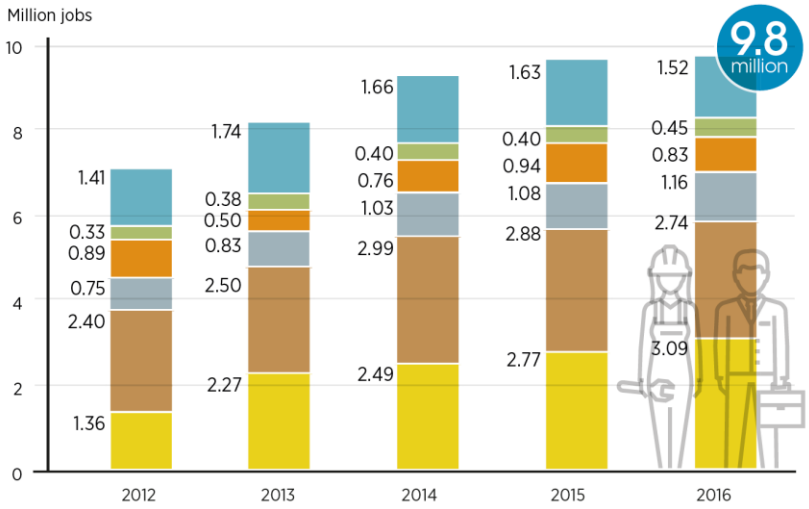
CURRENT STATUS

Renewable energy deployment has led to growing employment.

The number of jobs worldwide rose from **7.1 million** in 2012 to **9.8 million** in 2016.

In 2050, **28.8 million** jobs in RE, **9.4 million** jobs in EE and **16.1 million** jobs for grid.





Developed by IRENA, The European Commission and ILO
In collaboration with Norad

POLICY BRIEF #13 Interlinkages between Energy and Jobs

PRIORITY ACTIONS

- **Improve** data collection and analysis
- **Provide stable and predictable** policy support
- **Leverage** existing capacities in support of value chain development
- **Design** active labour market policies to respond to evolving market needs
- **Assess** skills needs and coordinate education and training policies with the needs of the RE sector
- **Ensure** that jobs are decent
- **Undertake measures** to minimise disruptions in the energy transition through social protection measures and retraining efforts
- **Remove barriers** to entry for women's employment in renewable energy

Developed by IRENA, The European Commission and ILO
In collaboration with Norad

POLICY BRIEF #14 Interlinkages between Energy and Sustainable Cities

CURRENT STATUS

By 2030, cities and towns are expected to house around **60%** of the world 's projected **8.2 billion** people.

Cities and towns globally consume up to **75% of energy**, and are responsible for **70% of GHG emissions**, along with **70% of resource use**.

Between **20% and 40%** of urban dwellers in developing countries **without** reliable access to electricity

An increasing number of cities (with nearly 100% energy access) have initiated **energy transition** from a fossil fuel driven economy to cleaner energy generation

More cities have committed to **100% renewable energy targets**

Developed by UN-Habitat, UNECE and UN Environment

POLICY BRIEF #14 Interlinkages between Energy and Sustainable Cities

PRIORITY ACTIONS

- ⇨ Promote sustainable cities with increased multi-sectoral investments and integrated policies, including through:

  a) planning, design and implementation of compact and accessible cities;
  b) adoption of clean, efficient, safe and affordable public transportation and non-motorised transport options;
  c) deep renovation of existing building stock and designing of energy and resource efficient and resilient new buildings;
  d) generation of energy from locally available clean energy sources;
  e) adoption of efficient municipal waste management systems with resource recovery;
  f) promoting efficiency in the use of resources;
  g) use of nature - based solutions.

- ⇨ Increase electricity supplies, green technology transfer, capacity development and responsive consumption. Increase investments in energy access. Take into account new technology innovations, the transition away from centralised national energy utilities as monopolies, and lowered costs for off - grid energy systems.

- ⇨ Cities in developing countries should invest in green industrial transformation (SGD 9), creating new jobs (SDG 8) in connection with manufacturing and assembling (SDG 12) cleaner energy technologies, and electric appliances.

Developed by UN-Habitat, UNECE and UN Environment

POLICY BRIEF #15 Interlinkages between Energy and Climate Change

CURRENT STATUS

Energy sector accounts for roughly **two-thirds** of all anthropogenic **GHG emissions.**

Current rates of deployment of renewable energy and promotion of energy efficiency are **not fast enough** to bend the emission curve.

Climate change threatens **energy security** worldwide
making energy systems **climate-resilient** will help countries achieve their SDGs

Renewable energy deployment can contribute to climate change adaptation.

Global GHG emissions in 2020 are likely to be at the high end of the range of the scenarios consistent with the Paris Agreement ’s goal of keeping global mean temperature well below 2°C or 1.5°C.

Developed by UNFCCC, IRENA, IEA, The European Commission and UN Environment
In collaboration with African Climate Policy Centre, UNECE, UNESCWA, Federal University of Rio de Janeiro and WMO

POLICY BRIEF #15 Interlinkages between Energy and Climate Change

PRIORITY ACTIONS

- **Decarbonisation** of the world ’s energy system must become a uniting vision to realise the SDGs and the Paris Agreement
- **Address the measures** identified by the IEA as instrumental in achieving a near - term global peak in GHG emissions
- **Address technological innovation**
- **Create an appropriate enabling policy framework** - universal energy access can be achieved without compromising global climate objectives
- Implement effective policies, engage stakeholder groups, facilitate access to clean energy research and technology, and promote investment in energy infrastructure and clean energy technology
- **Scale up financial support** to developing countries, with a concrete road map to achieve the collective mobilisation goal of jointly providing US$ 100 billion annually by 2020 and beyond.

Developed by UNFCCC, IRENA, IEA, The European Commission and UN Environment
In collaboration with African Climate Policy Centre, UNECE, UNESCWA, Federal University of Rio de Janeiro and WMO

POLICY BRIEF #16 Interlinkages between Energy and Transport

CURRENT STATUS

Transport is responsible for **28%** of global **energy consumption**, including around **60%** of all **oil products**

Transport is the **single largest energy user** in many **developed countries**

Transport energy demand has been **rising faster than any other sector**. Energy consumption in the transport sector is set to **continue to grow**, predominantly in **non-OECD countries**, with the greatest growth in **Asia**

Road vehicles are responsible for the **largest share of transport energy use**. Improving vehicle efficiency (particularly **fuel economy**) saves money and also minimises climate and air quality impacts

Developed by FIA Foundation, UN Environment, UNECE, the International Civil Aviation Organization and the International Maritime Organization

POLICY BRIEF #16 Interlinkages between Energy and Transport

PRIORITY ACTIONS

- Implement **fuel economy policies** to improve the efficiency of light and heavy duty vehicles (aerodynamics, engines and powertrains), and promote **electric and zero emission vehicles***
- Improve the **efficiency of trucks**, including **fuel economy standards**, and 'green freight' initiatives, including consolidated logistics*
- Phase out **fossil-fuel subsidies**
- Invest in **safe walking and cycling infrastructure,** with ring-fenced funding, and strong linkages to efficient, connected, and affordable **public transport systems**
- Address emissions from **international aviation** and **maritime transport**
- Accelerate **research** in **efficient batteries** and **energy storage systems**

* The Global Fuel Economy Initiative supports capacity-building in this field - https://www.globalfueleconomy.org

Developed by FIA Foundation, UN Environment, UNECE, the International Civil Aviation Organization and the International Maritime Organization

POLICY BRIEF #17 Energy in Situations of Displacement

CURRENT STATUS

About **135 million** people need humanitarian assistance

Access to energy will be **critical for their survival**, and how they access it will impact their health, livelihoods, safety, and well-being

Of those who are living in camp settings, **90% are without energy access, and 80% rely on wood-based fuels for cooking**

Displaced people **are unlikely to be included in national plans** to scale up energy access and **current energy practices** in situations of displacement **are often inefficient, polluting, unsafe for the users, and harmful** to the surrounding environment

Developed by UNHCR, IOM, UNITAR, UNEP-DTU, GIZ, UN Foundation, Practical Action, Global Alliance for Clean Cookstoves and the Moving Energy Initiative
Supported by The Federal Foreign Office of the Government of Germany

POLICY BRIEF #17 Energy in Situations of Displacement

PRIORITY ACTION

Develop a Global Plan of Action for Sustainable Energy Solutions in Situations of Displacement

Visions: "*Every person affected by conflict or natural disaster has access to affordable, reliable, sustainable and modern energy services by 2030*" and "*Energy efficiency is prioritised in the humanitarian system, and humanitarian organisations substantially increase their use and programme implementation of renewable energy*"

Working areas:

- ⇨ **Coordination and Planning**
- ⇨ **Policy and Advocacy**
- ⇨ **Innovative Finance**
- ⇨ **Technical Expertise and Capacity Building**
- ⇨ **Data, Evidence, Monitoring and Evaluation**

Developed by UNHCR, IOM, UNITAR, UNEP-DTU, GIZ, UN Foundation, Practical Action, Global Alliance for Clean Cookstoves and the Moving Energy Initiative
Supported by The Federal Foreign Office of the Government of Germany

REGIONAL PERSPECTIVE

Policy Brief #18 Achieving SDG7 in Africa

Policy Brief #19 Achieving SDG7 in Asia and the Pacific

Policy Brief #20 Achieving SDG7 in the UNECE Region (Central Asia, Europe and North America)

Policy Brief #21 Achieving SDG7 in Latin America and the Caribbean

Policy Brief #22 Achieving SDG7 in Arab Region

Policy Brief #23 Achieving SDG7 in LDCs, LLDCs and SIDS

POLICY BRIEF #18 Achieving SDG7 in Africa

CURRENT STATUS

Most of the continent is **unlikely** to achieve SDG 7

Due to population growth, roughly the same number of people are likely to be without access to electricity in 2030 as in 2016 (**590 million**).

Average per capita consumption in sub - Saharan Africa **remains the lowest** in the world.

846 million people without access to clean cooking in 2015, and the number will reach **900 million** by 2030 based on current policies.

Renewable electricity capacity accounts for **23%** of total in 2016, driven mainly by developments in **wind**, **solar PV**, **geothermal** and **large hydropower**.

Energy intensity remains high

Approximately **US$ 34.2 billion per year** are needed to ensure the attainment of SDG 7 in Africa by 2030

Developed by UN ECA
In collaboration with AfDB, ENERGIA, UNCTAD, UNESCWA, RCREEE, SACREEE, ECREEE, EACREEE, FIA Foundation, IRENA, UNIDO and IEA

PRIORITY ACTIONS

- **Put in place** coherent policies and an enabling environment to leverage limited public resources
- **Address** data gaps and reliability (especially on biomass)
- **Develop** in-country human and institutional capacities
- **Ensure** that climate resilience is fully integrated into the planning and implementation of energy infrastructure and investments
- **Promote** sharing of good practices and experiences with both on-grid and off-grid systems
- **Systematically prioritise** energy efficiency across all sectors
- **Promote** investments in strengthening the grid for greater efficiency and increased penetration of variable renewable power, and promote cross-border interconnections to accelerate access to electricity
- **Promote** local content enhancement across the full renewable energy value chain
- **Accelerate** efforts to encourage innovation

Developed by UN ECA
In collaboration with AfDB, ENERGIA, UNCTAD, UNESCWA, RCREEE, SACREEE, ECREEE, EACREEE, FIA Foundation, IRENA, UNIDO and IEA

POLICY BRIEF #19 Achieving SDG7 in Asia and the Pacific

CURRENT STATUS

Over **420 million people still have no access to electricity**, almost 10% of the region's population. The region is on track to reach nearly universal access to electricity by 2030, however there are some countries with acutely low access rates, mainly Pacific islands.

Almost **2.1 billion people rely on polluting cooking fuels and technology**, nearly half the population, and there is only very slow progress towards SDG7.

The overall share of **renewable energy**, including both traditional and modern forms, reached 18.3% in 2014 down from 23% in 1990, though up from a low of 17.9% in 2011.

The region has demonstrated a **long-term steep decline in energy intensity**, but levels are still much higher than the global average.

Developed by ESCAP
In collaboration with ADB, AIIB, FIA Foundation, IEA, IRENA and UNDP

PRIORITY ACTIONS

- **Commitment** to reach universal access must be maintained, there is need for **adequate regulations for off-grid electricity**, and countries with acutely low access rates require particular attention.

- **Targets for clean cooking fuels and technologies** should be established, and better integration into energy policy frameworks is required. **Greater investments** are needed to support the expansion of technology and fuel distribution networks

- **Concerted efforts at promoting renewables** are needed in Asia and the Pacific, with supportive policies and initiatives, including **carbon emissions pricing, and energy market and fossil fuel subsidy reforms**.

- Tightened **energy efficiency regulations are particularly urgent for the industry sector**, responsible for 35% of regional fuel consumption. **Stringent building codes** for new buildings are needed. Efficiency measures in transport will become especially important in the long term.

Developed by ESCAP
In collaboration with ADB, AIIB, FIA Foundation, IEA, IRENA and UNDP

POLICY BRIEF #20 Achieving SDG 7 in the UNECE Region (Central Asia, Europe and North America)

CURRENT STATUS

Attainment of SDG 7 is **falling short** in the UNECE region

Some countries **export** large quantities of **fossil fuels** and feature some of the world ’s **highest** levels of energy intensity

The UNECE region has achieved **100%** access to **electrical power networks** and **98%** access to **clean cooking fuels**, but with significant **quality and affordability** challenges

The rate of progress in improving **energy intensity** is insufficient

Annual renewable energy investments in the region need to **more than double** to achieve the 2030 target

Developed by UN ECE
In collaboration with European Commission, EIB, FIA Foundation and IRENA

POLICY BRIEF #20 Achieving SDG 7 in the UNECE Region (Central Asia, Europe and North America)

PRIORITY ACTIONS

- **Reflect** the full costs of energy production and use in energy prices
- **Rationalise** the use of energy subsidies. Reduce market barriers to sustain able energy technology.
- **Explore** ways for energy suppliers to sell energy services rather than energy products to accelerate energy efficiency uptake; promote the creation of strong energy services companies.
- **Develop** sustainable frameworks to promote investment in renewable energy
- **Improve** understanding of the interplay among efficient distribution networks, flexible fossil fuel plants and variable renewables.
- **Provide** support mechanisms to reduce the carbon intensity of the energy sector
- **Deploy** the Framework Guidelines for Energy Efficiency Standards in Buildings and accelerate development of smart energy systems
- **Adopt** the United Nations Framework Classification as a tool for sustainable resource management
- **Use** UNECE as a forum for exchange, as a space for policy dialogue, and as a facilitator

Developed by UN ECE
In collaboration with European Commission, EIB, FIA Foundation and IRENA

POLICY BRIEF #21 Achieving SDG 7 In Latin America and the Caribbean

CURRENT STATUS

Unlikely to achieve energy goals set for 2030, except **access** to electricity

18 million people without access to electricity in 2014, with 99% coverage in urban areas and over 88% in rural areas

Access to modern energy sources for cooking has been improving, and was up to **86.5%** in 2014, but **over 84 million** people still lacked access as of 2014

The Latin America and the Caribbean region has the **lowest energy intensity** in the world and it also has the **lowest annual rates of improvement**

Renewable energy sources are widely used in the region, representing 27.2% of total final energy consumption in 2014

Developed by UN ECLAC
In collaboration with IDB, FIA Foundation, IRENA and Federal University of Rio de Janeiro

PRIORITY ACTIONS

- **Generate** suitable institutional and regulatory frameworks for attracting the investment needed to universalise access to electricity and develop human and organisational capacities to distribute it efficiently
- **Implement** government policies that encourage the development of renewable energies, and are sustainable over time
- **Mainstream** non-conventional renewable energy technologies in policies, programmes and projects
- **Intensify** national programmes to promote the use of efficient and clean wood - burning stoves
- **Strengthen** the institutional and regulatory frameworks for energy efficiency and boost national capacities regarding statistical information and indicators
- **Draw up** national energy efficiency plans and mobilise resources
- **Promote** greater rationalisation of the transport sector

Developed by UN ECLAC
In collaboration with IDB, FIA Foundation, IRENA and Federal University of Rio de Janeiro

POLICY BRIEF #22 Achieving SDG7 in Arab Region

CURRENT STATUS

Close to universal electricity access in cities across the urban areas, but remains fixed at approximately **80%** in rural areas,

Around **36 million** people currently lacking access to electricity

88% of population using CFTs, but less than **40%** in the Arab LDCs

Energy consumption has **more than doubled** since 1990. **73%** was consumed by the **residential sector** alone.

Marginal role of renewables: **4%** of TFC in 2014, including biomass.

War, regional instability and mass migration present significant challenges in providing energy access to millions of people

Developed by UNESCWA
In collaboration with FIA Foundation and IRENA

PRIORITY ACTIONS

- **Develop, implement and enforce** suitable, integrated and proactive policies and institutional frameworks
- **Build** institutional capacity, transparency and accountability, monitoring and data collection systems,
- **Strengthen** local governance and communication
- **Enhance** interregional Arab cooperation and trade
- **Reinforce** the role of civil society and stakeholder engagement
- **Rationalise** use of natural resources and boost productivity

Developed by UNESCWA
In collaboration with FIA Foundation and IRENA

CURRENT STATUS

Access to energy in these vulnerable countries remains **a major challenge**

More than **half** of the people in the world **without electricity** live in **LDCs**.

In 2016, the proportion of the population in LDCs with access to electricity was **44.8%**. In LLDCs it was **52 %**, and SIDS it was **76%**.

Each country's transition to a sustainable energy sector involves **a unique mix** of resource opportunities and challenges.

All vulnerable countries face **inefficiencies in power utilities.**

Developed by UN OHRLLS and UNESCAP
In collaboration with UNCTAD, UNIDO, UNECA, UNECLAC, UNESCWA, IRENA and FIA Foundation

POLICY BRIEF #23 Achieving SDG7 In LDCs, LLDCs and SIDS

PRIORITY ACTIONS

- **Create** enabling environments for private sector investment and to promote attractive project pipelines
- **Increase** the funding allocated to sustainable energy in LDCs, LLDCs and SIDS
- **Utilise** Development Finance Institutions to catalyse energy access investment in vulnerable countries
- **Provide** more targeted support for vulnerable countries
- **Enhance** integration of regional/cross border energy infrastructure and institutions
- **Create** cross-sectoral linkages between sustainable energy and other development priorities
- **Ensure** that the national energy policies take in to consideration the energy demand profile of the poorest people, and ensure access to affordable energy

Developed by UN OHRLLS and UNESCAP
In collaboration with UNCTAD, UNIDO, UNECA, UNECLAC, UNESCWA, IRENA and FIA Foundation

TOWARD A SUSTAINABLE AND EQUITABLE ENERGY FUTURE

Policy Brief #24 Energy Sector Transformation: Decentralised Renewable Energy for Universal Energy Access

Policy Brief #25 Building Global Energy Interconnection (GEI) to Promote the 2030 Agenda for Sustainable Energy Development

Policy Brief #26 Energy Pathways toward Sustainable Futures to 2050 and Beyond

Policy Brief #27 Indicators and Data for Energy for Sustainable Development

POLICY BRIEF #24 Energy Sector Transformation: Decentralised renewable energy for universal energy access

CURRENT STATUS

Since 2012, **new generating capacity driven by renewables has exceeded that of non-renewables** by a widening margin.

Renewable energies have had a **positive impact on the provision of electricity access**.

Out of the people who have gained access since 2000, **27%** have been reached through **on-grid renewables, and 3%** through **mini-grid and off-grid renewables**.

Since most of the people who will gain access live in rural areas, the share of **mini-grid and off-grid renewable energy (38%) for energy access needs to be higher** than the on-grid renewables share (23%)

Developed by Federal Ministry for Economic Cooperation and Development (BMZ), Germany*, Ministry of Foreign Affairs of the Netherlands, IRENA and World Bank
In collaboration with Ministry of Energy of Kenya, Nepal Alternative Energy Promotion Centre, The European Commission, IEA, HIVOS, SNV, Schneider Electric, SELCO and University of Bergen

POLICY BRIEF #24 Energy Sector Transformation: Decentralised renewable energy for universal energy access

PRIORITY ACTIONS

- Introduce **integrated and holistic energy system planning for a deep transformation**
- For the energy access scenarios focus on satisfying the current and future **needs of various population groups** (e.g. **women, youth, and the poor**) and establish pathways for increasing demand over time
- Address outstanding shortcomings in the **regulatory framework for distributed renewable energy**
- Shift focus towards attracting **funding for small scale low-carbon climate resilient infrastructure projects** by the (local) private sector
- Create **reliable and transparent investment framework** with technology-neutral regulatory guidelines for different renewable solutions, **differentiated tariffs between central and decentralised grid and dedicated funding facilities**
- Integrate **productive use in project planning and implementation** for greater economic growth and employment
- Refine instruments and methods for **multi-stakeholder participatory planning and monitoring of SDG7**
- Include **civil society organisations** that voice the **interests of people for household energy consumption and productive use of energy**

Developed by Federal Ministry for Economic Cooperation and Development (BMZ), Germany*, Ministry of Foreign Affairs of the Netherlands, IRENA and World Bank
In collaboration with Ministry of Energy of Kenya, Nepal Alternative Energy Promotion Centre, The European Commission, IEA, HIVOS, SNV, Schneider Electric, SELCO and University of Bergen

POLICY BRIEF #25 Building Global Energy Interconnection (GEI) to Promote 2030 Agenda For Sustainable Energy Development

CURRENT STATUS

About **1 billion** without access to electricity, over 90% live in sub-Saharan Africa, Asia and Latin America.

The world is rich in clean energy resources, but not evenly distributed. **Geographical mismatch** of resource centers and load centers leads to the demand for large-scale electricity transmission.

Global Energy Interconnection (GEI) is a vision of globally interconnected power grids, which can act a platform for large-scale development, transmission and consumption of **clean energy** worldwide, by combining the **Ultra High Voltage (UHV)** and **Smart Grid** technologies.

Cost reduction of clean energy, and **technology advance** in UHV, Smart Grid promotes more interconnection.

A "**GEI Action Plan** to Promote the 2030 Agenda for Sustainable Development" was released in November 2017, together with the UN

Developed by GEIDCO and REI
In collaboration with APUA, IHA and GGA

POLICY BRIEF #25 Building Global Energy Interconnection (GEI) to Promote 2030 Agenda For Sustainable Energy Development

PRIORITY ACTIONS

- **Incorporate** GEI into energy development strategies and planning as an important effort to implement the 2030 Agenda
- **Encourage** a wide range of cooperation
- **Conduct** power grid study and planning at the global level based on local, country or regional power grid planning
- **Develop** new business models
- **Disseminate** successful experiences
- **Put in place** policies and action plans to encourage renewable energy development and utilisation on a global level

Developed by GEIDCO and REI
In collaboration with APUA, IHA and GGA

POLICY BRIEF #26 Energy Pathways toward Sustainable Futures to 2050 and Beyond

CURRENT STATUS

SDG7 is **ambitious**, **but achievable**

There are other **pathways** in more recent literature that would **meet some of the SDG 7 targets by 2030**, including scenarios by the IEA and IRENA, and some of the community pathways developed for the IPCC.

Reduction of energy intensity is central to the achievement of sustainable energy futures across a wide range of pathways

On track to achieve **renewable energy** goal and also great progress in reducing energy **intensity and access**

However, **far from doubling** the rate of energy intensity improvement as well as achieving **sustainable energy access for all**

Developed by IIASA
In collaboration with IEA and IRENA

POLICY BRIEF #26 Energy Pathways toward Sustainable Futures to 2050 and Beyond

PRIORITY ACTIONS

- ⇨ Increase energy investments to around US$ 2.5 trillion per year until 2030
- ⇨ Investments in science, technology and innovation need to complement deployment and diffusion
- ⇨ Energy policies and regulations should be integrated and reliable to support long - term investments
- ⇨ New behaviours and the emergence of sustainable social norms and values are central to the energy transformation toward sustainable future.
- ⇨ The future transformation needs to take place at a much higher rate of change than observed in the past. This requires disruptive thinking in terms of the imagined futures and the complementary disruptive policy interventions.

Developed by IIASA
In collaboration with IEA and IRENA

POLICY BRIEF #27 Indicators and Data for Energy for Sustainable Development

CURRENT STATUS

Tracking of progress towards achieving SDG 7 shows that

- current approaches on indicators **could be refined**
- capacities to collect relevant data **need enhancement**

Adopting international methodologies for statistics and indicators is a prerequisite for improved analytical quality, global coverage, and comparability

Current indicators are **derived from the existing data gathering and reporting infrastructure**

Decision makers would be better informed with **a broader range of forward - looking indicators** that cut across the 2030 Agenda

Developed by UN ECE
In collaboration with IEA, World Bank, WHO, UNECA, UNECLAC, UNESCAP, UNESCWA

POLICY BRIEF #27 Indicators and Data for Energy for Sustainable Development

PRIORITY ACTIONS

- **Reinforce** and adequately resource energy statistics programmes
- **Ensure** that full energy balances are produced regularly and in a timely fashion
- **Develop** appropriate indicators for the system of the future, adapt existing data gathering systems, and build required capacities to collect and analyse data – then track and report on both data and indicators
- **Develop** new indicators that embrace nexus areas on water, food, climate, investments in clean energy, and other forms of energy
- **Strengthen** analytical capacity concerning interactions involving energy and climate, especially the water - food - energy nexus
- **Develop** specialised national energy data observatories

Developed by UN ECE
In collaboration with IEA, World Bank, WHO, UNECA, UNECLAC, UNESCAP, UNESCWA

HIGH-LEVEL POLITICAL FORUM
ON SUSTAINABLE DEVELOPMENT

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