

An aerial photograph of a wind farm situated in a lush, green landscape. The wind turbines are scattered across rolling hills and valleys, with some roads and paths visible. The overall scene is vibrant and natural.

SUSTAINABLE ENERGY TO STIMULATE ECONOMIES

Photograph: Shutterstock

Renewables provide a sound low-carbon investment option to drive recovery and ensure long-term economic stability.

For the second time in a little over a decade, governments are ramping up enormous stimulus plans to keep economies afloat and protect jobs and livelihoods. The coronavirus (COVID-19) pandemic, combined with low oil prices, has disrupted life for regions, countries and communities across the globe.

Without more clean energy investments, emissions will revert to their long-term trend

Economies need more than a kick-start. They need stable assets, including an inclusive energy system that supports low-carbon development. Current oil price volatility reinforces the case for a transition to renewable energy. Renewables, although affected by the current slowdown, can provide localised assets that offer stable long-term cash flow when backed by long-term purchase agreements.

Recovery measures after the 2008 financial crisis largely overlooked environmental and climate considerations. Of the US government's USD 800 billion stimulus package, only about 10% was channeled into emissions reduction, efficiency improvements and energy innovation, according to Bloomberg News.

In the next economic recovery phase, however, governments could shift more of their support to clean energy. Along with helping to meet climate goals, such investments would create new jobs, stimulate local economies, bolster energy security and strengthen long-term stability.

Renewables transcend oil volatility

Today's low oil prices have upended some previous assumptions about the economics of energy investments. Yet the need remains to drastically reduce energy-related carbon dioxide (CO₂) emissions, regardless of the lower emission levels expected this year amid the global economic slowdown.

"The long-term planning horizons involved, and the momentum that currently exists in the energy transformation, means neither low oil prices nor COVID-19 will interrupt or change our path towards decarbonisation of our societies and towards the achievement of the Sustainable Development Goals," said Francesco La Camera, Director-General of the International Renewable Energy Agency (IRENA).

The current pandemic also demonstrates how unforeseen factors can suddenly disrupt plans, overturn previous assumptions and seemingly distort familiar trends. The inter-connectedness of the energy system with the wider economy has become more apparent than ever.

In the power sector, renewable-based technologies are well established as competitive investment options. Renewable power capacity surged in 2014 and 2015, seemingly unaffected by the last major crash in global oil prices.

"Oil plays a negligible role in power generation and therefore does not compete with renewables in this respect," Mr. La Camera added. "Renewables have become the dominant source of new power generation capacity over the last six years because they are competitive at the bottom end of the conventional fossil-fuel power-generation cost range – primarily with coal."

Oil-price volatility, however, produces contradictory effects. It undermines the viability of unconventional fossil fuels, such as shale oil – a notable competitor to renewable-based fuels that has arguably hindered the energy transition in recent years. This could encourage governments to shift their support more towards clean energy projects.

At the same time, lower gasoline and diesel costs could dampen demand for electric vehicles. Along with renewables and energy efficiency, the electrification of end uses like heat and transport will be crucial to decarbonise overall energy use. Oil remains the main source of transport fuel, which accounts for half of the world's energy demand.

"Without low-emission transport policies in place, an extended period of low oil prices may impact the speed of electric vehicle adoption," Mr. La Camera observed.

Climate investment support available

Creating a climate-safe global energy system calls for decisive, large-scale action. Amid the need for massive capital mobilisation, a landmark initiative by international organisations aims to accelerate clean, climate-safe energy investments in developing countries.

The Climate Investment Platform (CIP), aims to mobilise energy transition investments in close alignment with the goals set out in the Paris Agreement. Announced at last September's Climate Action Summit, the CIP brings together with the United Nations Development Programme (UNDP), Sustainable Energy for All (SEforALL) and IRENA in a partnership linking energy development to climate goals in co-operation with the Green Climate Fund (GCF).

Renewable energy, renewable-based electric grid and energy efficiency projects may all qualify for support under the CIP. Various financial institutions have started to register as partners.

Fourteen sub-regional Investment Forums provide an operational framework for CIP implementation and constitute a key element to increase impact on the ground. Co-ordinated by IRENA, the forums support decision makers in creating the enabling conditions for renewable energy investments. They also aim make project finance accessible and assist developers with preparing bankable projects.

Formed to respond to country needs, the forums span five sub-regions in Africa, four in Asia and two in Latin America, together with specific clusters for the Caribbean, Pacific Islands and Southeast Europe.

To learn more, see [IRENA's CIP page](#)

Green bonds needed to drive energy transformation

Capital-market instruments traditionally support large-scale re-allocations of financial resources. As growing numbers of countries aim to build a low-carbon economy, they need to step up bonds and other instruments to channel global wealth into sustainable energy infrastructure.

Innovative instruments like *green bonds* can help countries reach key climate and sustainability objectives. Renewable energy, energy efficiency and clean transportation projects can all qualify for such finance.

A green bond, like a conventional bond, helps the bond issuer raise funds for specific projects or ongoing business needs, in return for fixed interest payments and full repayment of the principal at maturity. The “green” label, meanwhile, tells investors that the funds raised will be used to finance sustainable assets with environmental benefits.

Green bonds have grown rapidly in the last five years, with annual issuances rising from under USD 45 billion in 2015 to over USD 270 billion in 2019. Yet they still only make up about 1% of the world’s total bond market, leaving huge potential for further growth.

Lately, such securities have spread beyond Europe and North America, recording impressive growth in the Asia-Pacific region. Exciting developments are also seen in Africa and other emerging markets.

Green bonds are now available in over 30 currencies, mainly issued by large corporations, but also by financial institutions, agencies and sovereign governments.

Despite higher transaction costs and no evident price advantage, green bonds have often been oversubscribed. Repeat issuances can boost a company’s environmental, social and governance (ESG) credentials. Green bonds also help diversify the issuer’s investor base, attracting institutional investors that show a preference for indirect investments in green assets via bonds or funds.

But investors want transparency over how bond proceeds are used. The green label has sometimes been applied inconsistently.

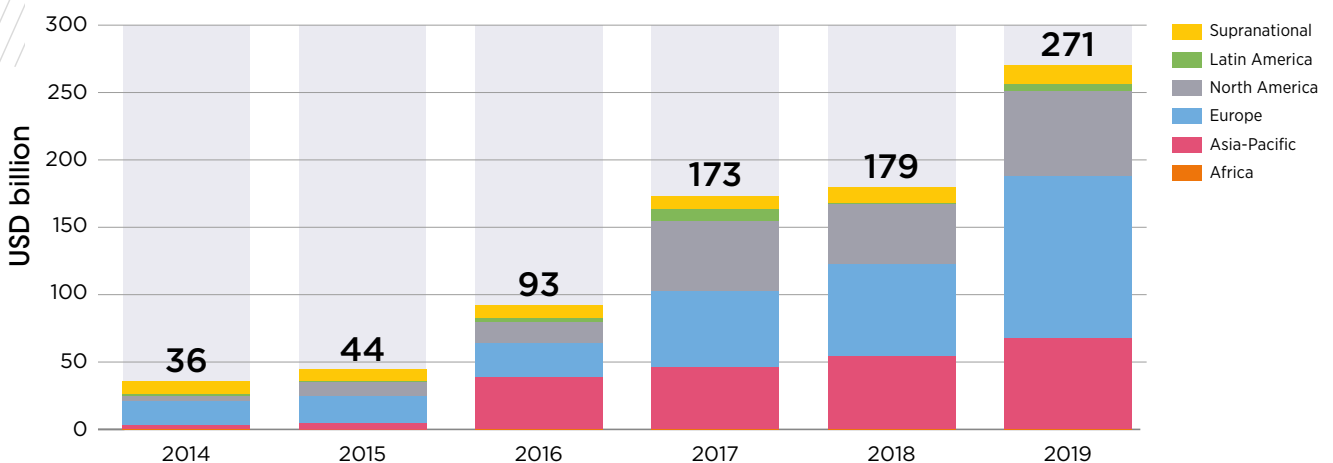
The market needs a uniform understanding of green criteria, rather than self-applied labels and varying regional and national designations. The green taxonomy must align with global climate and sustainability targets.

Growing acceptance of Green Bond Principles and the Climate Bonds Standard, along with the development of an EU Green Bonds Standard, can be expected to strengthen the fixed-income market as a channel for renewable energy finance.

See IRENA’s recently published briefs:

- » [Renewable energy finance: Green bonds](#)
- » [Renewable energy finance: Institutional capital](#)

Annual green bond issuances globally and by region



IRENA analysis based on data from the Environmental Finance Bond database (subscription required)



New trade codes coming for solar products

The rise of solar power has generated an array of innovative new products traded across the globe. Since 2016, the World Customs Organization (WCO) has sought to clarify where to place solar energy products in its harmonised system of international trade codes.

The WCO's next major update includes codes for solar energy products. The new harmonised system of international trade codes, or HS2022, is set to take effect in two years' time. Clearer, simpler codes should facilitate trade, support the development of incentives for renewables and improve the monitoring of energy access worldwide.

The WCO Council adopted these amendments to the Harmonized Commodity Description and Coding System (HS) in June 2019. They will enter into force on 1 January 2022 for all 159 WCO Contracting Parties (158 countries and the European Union).

The HS is an internationally standardised system of six-digit codes and product descriptions, which are used to classify all kinds of international product trade. It is used as a basis for setting tariffs and other trade-related measures and also as a framework for the collection of international trade statistics.

Until now, rapid development of solar energy products and devices has caused uncertainty about how to record their movement in international trade.

Solar water heaters, for example, are currently classified under a broader subheading (8419.19) that covers all water heaters not powered by gas or electricity. Many countries already identify solar water heaters in more detailed trade codes at the 8- or 10-digit level. However, unlike 6-digit codes, these codes are not the same in every country. From 2022, solar water heaters will be classified everywhere with the code 8419.12.

Clearer, simpler codes should facilitate trade and support the creation of incentives for renewables

Solar panels, similarly, are classified broadly under the subheading for photosensitive semiconductor devices (8541.40). Now this has been split into several subheadings to help identify different products.

Solar lights and solar home systems have also lacked a clear home under the current HS. Two new sets of codes have been accepted, splitting solar home systems into those with DC and AC output

Solar lighting products will continue to appear in different parts of the new HS. Countries struggled to agree on how to define portable solar lights, in addition, many countries would have preferred to identify LED lights as a separate product, but the existing list made this difficult and instead new codes were created.

The WCO continues working with countries to clarify the best placement for portable solar lights under the HS and IRENA will continue to advise on such matters. The next HS revision is due in 2027.

See the latest accepted amendments to HS 2022 on the WCO website: www.wcoomd.org/en/media/newsroom/2020/january/wco-has-published-accepted-amendments-to-hs-2022.aspx

*For more, see IRENA's statistical note, 2017: **Facilitating trade in solar energy products, IRENA Statistical Note***

Portable solar lights

The HS heading for lights covers all lamps and lighting fittings that are not identified elsewhere. Most of these can be described either as illuminated signs or as a type of furniture. However, higher up in the coding structure, portable electric lamps using their own energy source fall under a different subheading (8513.10). Until recently, battery-powered torches or flashlights would have accounted for most such products.

A distinctive code for portable solar lights was discussed, to replace 8513.10, but countries were unable to agree on a specific description that would include portable lights with detachable solar panels. Thus, portable solar lights can still be classified by customs authorities as falling under 8513.10 rather than 9405.41.

In cases where a product could fall under two different codes, HS rules of interpretation consider whether one code or another provides the “the most specific description” or reflects the “essential character” of a product. If this cannot be determined, the rule is to classify a product under the last heading in numerical order. This could imply that portable solar lights should fall under subheading 9405.41, but traders of portable solar lights should seek guidance from their respective customs authorities on how they would classify these products

Codes under HS2022

Solar water heaters

- 8541.41 -- Light-emitting diodes (LED)
- 8541.42 -- Photovoltaic cells not assembled in modules or made up into panels
- 8541.43 -- Photovoltaic cells assembled in modules or made up into panels
- 8541.49 -- Other

Solar lights and solar home systems

Solar home systems can now be recorded under generators, with the following specific codes:

- 8501.71 -- Photovoltaic DC generators: output not exceeding 50 W
- 8501.72 -- Photovoltaic DC generators: output exceeding 50 W
- 8501.80 -- Photovoltaic AC generators

Other electric luminaires and lighting fittings:

- 9405.41 -- Photovoltaic, designed for use solely with LED light sources, includes all larger (non-portable) lighting systems
- 9405.42 -- Other, designed for use solely with LED light sources
- 9405.49 -- Other

Renewables give refugees sustainable energy access

Refugee settlements tend to rely on diesel-powered generators to meet people's everyday electricity needs. Diesel power, however, is not always available or reliable. At best, it tends to be expensive and harms the environment.

Renewable energy solutions, in contrast, can provide clean, reliable, and affordable energy for residents and humanitarian teams alike. Access to clean and sustainable energy is vitally important to spur socio-economic development and support sustainable livelihoods.

Refugee settlements in Iraq and Ethiopia, for instance, have started addressing a range of energy challenges with renewable solutions like rooftop solar panels, solar water pumps and solar streetlights. Four refugee settlements – two in each country – were selected for assessments to identify optimal energy solutions. The study shows options to give refugees clean, efficient and cost-effective energy services for everyday use, as well as ways to adopt market-based models to better manage energy supply.

The specific challenges vary greatly from place to place. Refugees in Iraq, mainly displaced from Syria, receive power from the national grid, although power cuts have become frequent with settlement expansion.



The East African refugees in Ethiopia have no access to electricity and depend entirely on forest firewood for cooking. The influx of refugees has accelerated deforestation, prompting resource competition and tensions with host communities.

Solar energy lights public spaces, pumps clean water and powers housing and offices

In both cases, the installation of solar power has alleviated reliance on diesel-based generation. Solar street lights have been introduced to light up open spaces, improving security. In the Ethiopian case, tree planting has helped to stem deforestation. In Iraq, solar installations at boreholes for pumping water have significantly reduced reliance on diesel generators.

Humanitarian agencies strive to scale up regular data collection on energy use to further improve their planning and operations in refugee settlements. Such data helps to quantify the potential benefits of wider renewable energy use and better energy management.

The study, produced by IRENA as part of an ongoing collaboration with the UN Refugee Agency (UNHCR), has identified key solutions for each of the four refugee settlements that could be replicated with some adjustment in other situations of displacement. Following detailed audits, IRENA has shared its optimisation modelling of the proposed renewable energy solutions with UNHCR.

For more, see: [Renewable solutions for refugee settlements](#)

MEMBER BULLETIN



Photograph: Shutterstock

Bhutan seeks wider mix of renewables

The Kingdom of Bhutan is the world's only carbon-negative country. Forests cover 70% of its land, which sequesters more carbon dioxide than the entire nation emits. Bhutan's Gross National Happiness indicator accounts for sustainable and equitable socio-economic development, environmental conservation, preservation and promotion of culture, and good governance. The country aspires to continue growing sustainably, prioritising the well-being of citizens and the environment.

A diversified mix of renewables would be more resilient to changing weather

An IRENA member since 2016, Bhutan today relies heavily on hydropower, which is likely to remain an important component of the economy. Yet the country could diversify its energy mix with other renewable energy technologies. Solar, wind and modern bioenergy could drive local industries and create local jobs with relatively low environmental impact.

A diversified electricity portfolio would be more resilient to weather extremes as well as to the seasonal droughts that can adversely affect hydropower supply. Rainfall in Bhutan tends to decline in the winter months, which – coupled with less ice melt – results in reduced river flow and lower hydroelectricity output.

Through a series of regulatory measures, non-hydropower renewables would work alongside existing hydropower to deliver multiple benefits. Modern renewable energy technologies would help to reduce deforestation and curb harmful indoor emissions caused by the use of fuel wood and kerosene for heating. Along with cleaner cooking, people would gain more time for other productive or leisure activities. Bhutan's women, who typically collect the firewood and work over smoky stoves, could be the greatest beneficiaries.

Key actions for Bhutan to scale up its use of renewables include:

- Strengthening existing policy and regulatory framework for renewables;
- Livelihood enhancement through a more diverse energy mix, including solar, wind and modern bioenergy solutions;
- Interventions to promote renewable based heat and transport;
- Capacity building, skills enhancement and awareness programmes.

For more, see [Renewables Readiness Assessment: Kingdom of Bhutan](#)

Recent publications



Electricity Storage Valuation Framework: Assessing system value and ensuring project viability

Electricity storage capacity will be a crucial factor in the world's progressive shift to renewable energy sources. This report offers a five-phase method to assess the value of storage assets, aiming to guide further deployment and support the effective integration of solar and wind power.



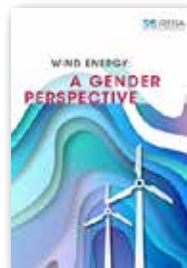
Power sector planning in Arab countries: Incorporating variable renewables

Many Arab countries have set ambitious targets to increase their shares of renewables. Yet planning is frequently constrained by cost implications and the lack of first-hand experience with renewable sources. Solar and wind power present challenges for highly centralised systems. The report builds on a 2019 [regional planning workshop](#).



Advancing renewables in developing countries

This report reviews the progress of 18 projects financed by the Abu Dhabi Fund for Development (ADFD) through the IRENA/ADFD Project Facility, which supports innovative renewables projects that expand access to modern energy services in developing countries.



Wind energy: A gender perspective

Wind energy, like other parts of the global energy industry, remains a largely male-dominated field. Yet opportunities exist to improve the gender balance. This brief, prepared jointly with global wind industry associations, tracks the presence of women across the wind energy value chain.

www.irena.org/publications

About IRENA

The International Renewable Energy Agency (IRENA) serves as the principal platform for international co-operation, a centre of excellence, a repository of policy, technology, resource and financial knowledge, and a driver of action on the ground to advance the transformation of the global energy system. An intergovernmental organisation established in 2011, IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy, in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity.

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