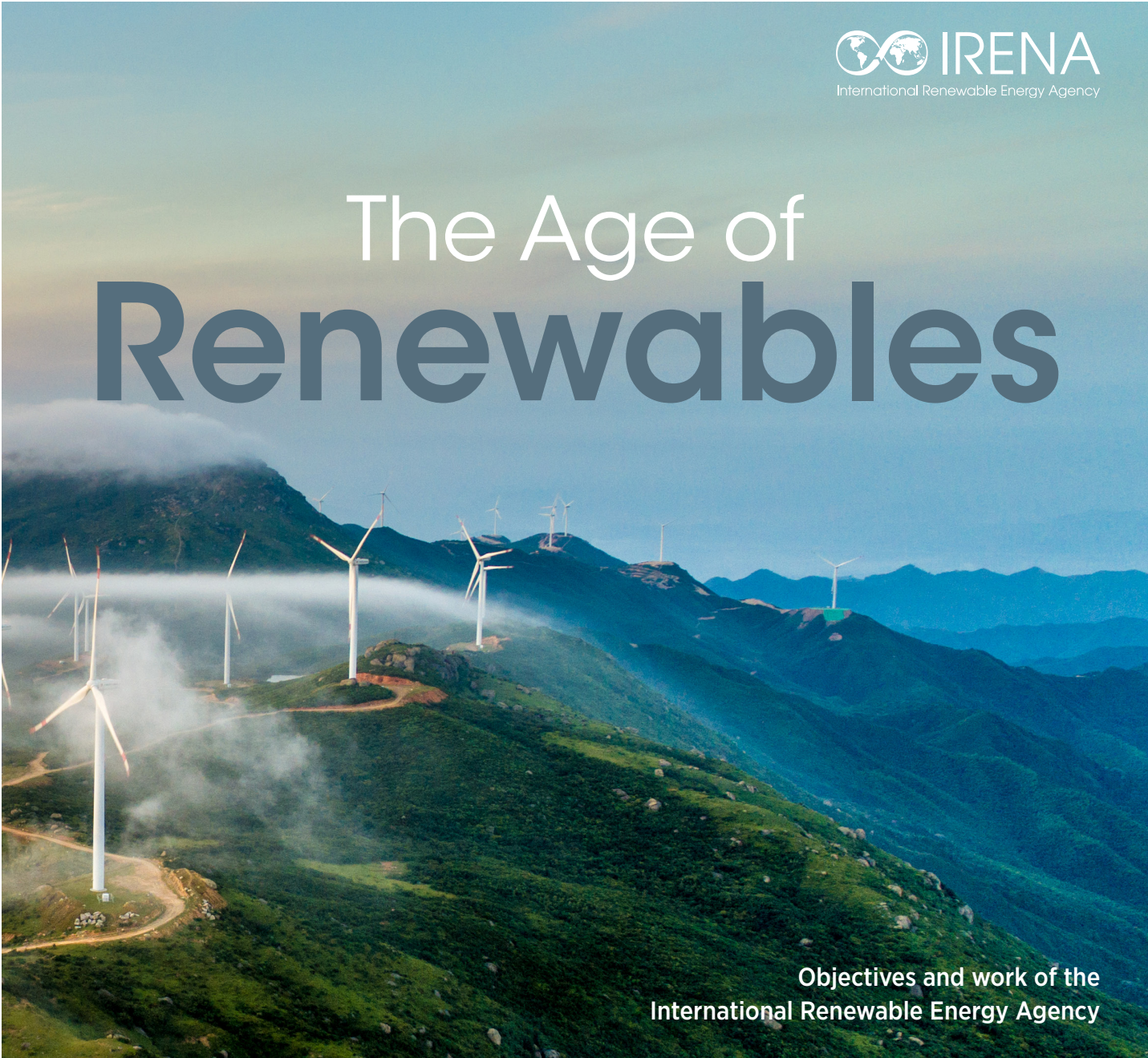


The Age of Renewables



Objectives and work of the
International Renewable Energy Agency

Renewables provide
an economically
compelling answer
to energy security,
energy access and
climate change.





CONTENTS

| | |
|--|----|
| Why renewables matter | 5 |
| What is renewable energy?..... | 6 |
| IRENA and its mandate..... | 9 |
| Global membership..... | 9 |
| Selected programmes and services | 11 |
| How IRENA works | 12 |
| Our staff and values..... | 14 |
| Our sustainable headquarters..... | 14 |

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Accelerating the deployment of renewable energy fuels economic growth, creates new employment opportunities, enhances human welfare and contributes to a climate-safe future





WHY RENEWABLES MATTER

Energy is all around us. Our modern societies use it in practically every type of activity. We use energy in our homes, for transport, and in our offices and industries. With more people aspiring to modern lifestyles, the world is using ever greater amounts of energy.

By 2050, global energy consumption will need to fall by 6% from 2020 levels through substantial improvements in energy efficiency, while the share of renewables in the global energy mix will have to rise to 77% by 2050, up from 16% in 2020.

Meeting the world's growing energy needs with traditional fuels like coal and oil harms our health, our environment and our climate. It also has economic consequences.

Our progress needs to be sustainable. Fortunately, we can satisfy the demand for energy – and can do so affordably – with renewables. The transition to these remarkable energy sources protects our planet, ourselves, our children and future generations.

WHAT IS RENEWABLE ENERGY?

Renewables include any form of energy that can be produced sustainably, from a source that is replenished through natural processes on a human timescale.

Renewable energy is accessible everywhere, even in remote locations. It enables economic activities, provides services and supports employment and investment opportunities. It also offers broader social and economic benefits, such as ensuring access to heating, cooling, lighting, food storage, health care, information and education.

It is abundant in every country and comes in various forms:

BIOENERGY

Bioenergy is obtained from animal and plant materials, such as wood, organic waste and vegetable oils. It is a key resource to meet various kinds of energy demand. Solid biomass can be burned for heat or power-generation, or converted into transport fuels. Liquid biofuels – a convenient renewable substitute for gasoline or diesel – are increasingly common.

GEOHERMAL ENERGY

Heat stored under the ground provides geothermal energy. While a few countries already use direct heat or generate power this way, others possess vast untapped geothermal potential. In addition to intense heat from deep wells, shallow heat can be extracted through heat pumps.

HYDROPOWER

Hydropower is derived from flowing water. The water's kinetic energy – or energy of motion – drives turbines, turning it into mechanical energy, which a generator then turns into electrical power. It is among the most cost-effective ways discovered so far to generate electricity. While many countries have relied on large hydropower dams for decades, micro-hydropower projects are increasingly common and are improving people's lives in remote locations.

OCEAN ENERGY

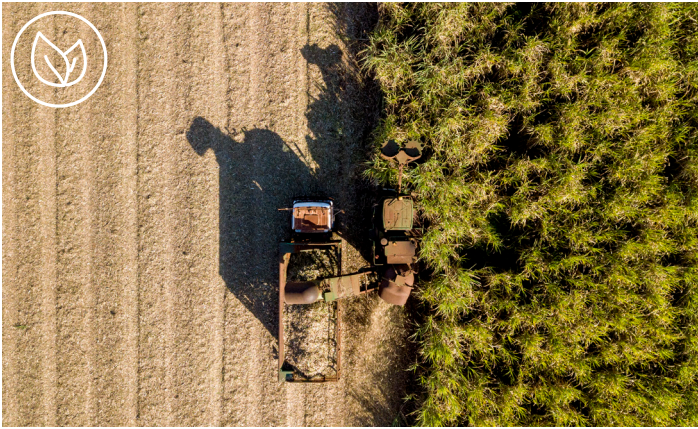
Ocean movements such as tides, waves and currents can be harnessed to produce electricity. Tidal power, for example, works by feeding ocean tides through turbines. These types of renewables represent enormous future energy potential.

SOLAR ENERGY

Energy can be harnessed from the sun – even in cloudy weather. Solar energy is increasingly used across the world, whether for power generation or to heat water. The cost of manufacturing solar panels has plummeted in recent years, and installation is possible almost anywhere. Solar power is generated in two main ways: photovoltaic (PV) panels that create an electric current; and concentrated solar power (CSP) plants, which use mirrors to intensify the sun's rays. This heats fluid, making steam that drives a turbine. CSP systems can include thermal energy storage.

WIND ENERGY

Air in motion produces energy. Wind energy – harnessed for centuries to drive windmills – has emerged recently as a fast-growing, rapidly evolving power-generation technology. Costs continue falling while installed capacity grows. Many parts of the world benefit from strong wind speeds. Offshore wind is also becoming a mainstream power source.





OUR MANDATE

The International Renewable Energy Agency (IRENA) promotes the widespread adoption and sustainable use of all forms of renewable energy.

We do so in the pursuit of sustainable development, including access to modern energy services, energy security, improved energy efficiency and low-carbon economic growth and prosperity for people around the world.

As an intergovernmental organisation with global membership, we support countries in their transition to a sustainable energy future. We serve as the principal platform for international co-operation, a centre of excellence and a repository of policy, technology, finance and resource-related knowledge on renewable energy.

With support from countries worldwide, IRENA today is recognised as the global voice of renewable energy.

We support governments in the adoption of strategies, plans and policies to attract renewable energy investments. We also provide practical tools and advice, and facilitate knowledge sharing and technology transfer – all to support the deployment of clean, sustainable energy for the world's growing population.

Headquartered in Abu Dhabi in the United Arab Emirates, we are also present in Germany through the IRENA Innovation and Technology Centre, in Bonn, and in the United States, with our United Nations Liaison Office in New York.

GLOBAL MEMBERSHIP

The growing need for international co-operation on renewables is reflected in our steady membership growth.

IRENA has grown since 2011 to encompass most of the countries in the world.¹ Membership is open only to United Nations member states and regional economic groupings.²

In joining IRENA, members commit to our common goal: scaling up renewables to ensure a sustainable energy future.



¹ Members (September 2025): 170, including 169 countries and the European Union; States in Accession: 15

² Membership in IRENA is open to those States that are members of the United Nations and to regional intergovernmental economic integration organisations willing and able to act in accordance with the objectives and activities laid down in its Statute (IRENA Statute, Article VI).

Renewable energy is the key
to ensuring affordable, reliable,
sustainable energy for all



SELECTED PROGRAMMES AND SERVICES

- **Knowledge products:** Timely statistics, cost data, research, analysis and policy assessments on all aspects of renewable energy planning, use, development and deployment, with results presented accessibly through a range of publications and online platforms.
- **Renewable energy transition roadmaps:** These explore the potential for countries and regions to increase their use of renewables and accelerate the energy transition – a key step to mitigate climate change.
- **Renewable energy socio-economic impacts:** Detailed analysis of the socio-economic impacts of renewable energy and the energy transition, including employment and skills, GDP and welfare; opportunities for local value generation; and gender equity and workforce diversity.
- **Renewables Readiness Assessments:** Country-led, holistic evaluations and recommendations for action to accelerate renewable energy deployment.
- **Global Atlas for Renewable Energy:** An online platform for mapping renewable energy potential and prospecting areas for project planning in countries or regions.
- **Energy planning support:** Provision of models, methodologies, peer-to-peer exchanges, and in-depth capacity building programmes to develop and use long-term energy scenarios (LTES) and official masterplans at the national and transnational level.
- **SIDS Lighthouses initiative:** A framework for action to achieve a just and equitable energy transition for small island developing states (SIDS).
- **Innovation for the energy transition:** Cutting-edge information and a portfolio of innovations emerging across four key dimensions, namely enabling technologies, business models, market design and system operation, which can be used to design national energy transition strategies.
- **Nationally Determined Contributions (NDCs) and long-term strategy support:** Country-level engagement and support to scale up a country's energy transition and climate action under the Paris Agreement through NDCs and long-term low greenhouse gas emission development strategies (LT-LEDS).
- **Empowering Lives and Livelihoods:** Connect people and livelihoods through renewable energy solutions in agri-food and health value chains, strengthen resilience and drive equity benefits.
- **Climate Investment Platform (CIP):** A platform connecting developers, financiers and other stakeholders, aimed at mobilising capital that can be used to accelerate the scale up of renewable energy technologies and drive low-carbon energy projects in developing countries.
- **Energy Transition Accelerator Financing Platform (ETAF):** A multi-stakeholder climate finance platform with the objective to accelerate the global energy transition by directing funds into renewable energy projects in developing countries.

HOW IRENA WORKS

INSTITUTIONAL STRUCTURE

Assembly

This is IRENA's ultimate decision-making authority, made up of one representative from each IRENA member. Convened annually, it has become the key global gathering on renewable energy, instrumental in guiding the strategic direction and priorities for international co-operation in the sector, as well as deciding on IRENA's work programme.

Council

The 21-member Council facilitates consultations and co-operation among IRENA members and considers the draft work programme and budget. Council members are elected for a two-year term on a rotating basis, ensuring the effective participation of both developing and developed countries and fair and equitable geographical distribution. The Council is accountable to the Assembly.

Secretariat

Led by the Director-General elected by the Assembly, the Secretariat implements the strategies and activities set by IRENA's membership to promote renewable energy worldwide. It also supports the Assembly and Council in their deliberations and prepares each new draft work programme, budget and annual report.



Delegates gather from around the world to discuss the way forward for renewables

 IRENA
International Renewable Energy Agency



OUR SUSTAINABLE HEADQUARTERS

IRENA moved to its current headquarters in Abu Dhabi's low-carbon development, Masdar City, in March 2015.

The 32 000 m² complex consists of three interconnected buildings, which work together to conserve energy and water and create shared space.

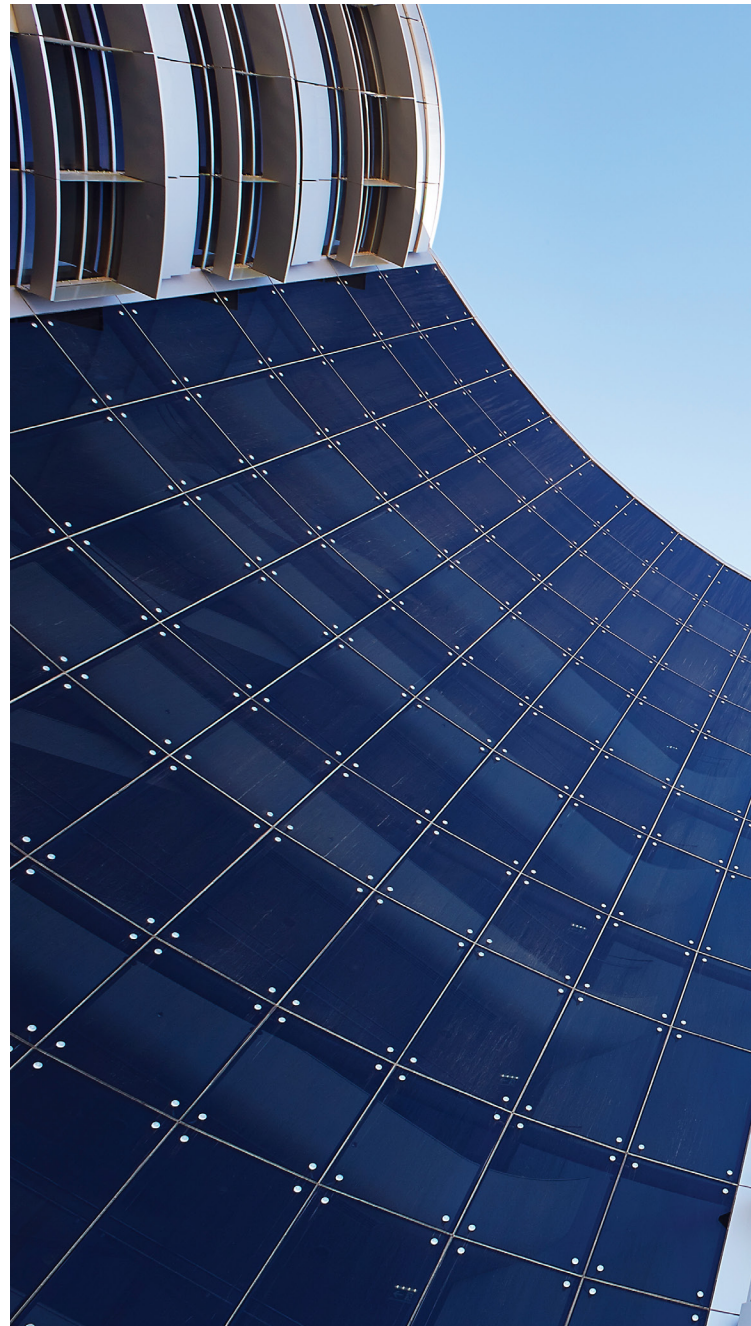
The headquarters complex serves as a model of sustainable development in IRENA's host country and region. The building enables IRENA to set a prominent example of sustainable practices, operating from a headquarters that symbolises environmentally conscious design.

OUR STAFF AND VALUES

The IRENA Secretariat is a dynamic, multi-cultural workplace, committed to diversity and including dedicated women and men of all nationalities, religious and ethnic backgrounds. Our multi-national team of experts takes pride in promoting renewable energy, helping to combat climate change and contributing actively to global sustainable development.

In their daily activities, IRENA's employees uphold high standards of professionalism, integrity and respect for diversity as core values.³

³ Consistent with organisations adhering to the United Nations common system.



BUILDING FACTS

- » Built-in renewable energy systems can cover **more than 10%** of the building's energy needs
- » Its **1 000 m² solar photovoltaic rooftop system** is designed to produce **305 000 kilowatt-hours (kWh)** of electricity annually
- » Its **solar hot water system** is equivalent to another **27 850 kWh**
- » The complex is the UAE's first **Four Pearl** structure, receiving the highest rating from Estidama – a UAE certification system measuring **energy, water and carbon efficiency**
- » Thanks to an efficient envelope, the building is **twice as airtight** as Estidama requires, reducing overall energy use
- » Building construction made use of **low-carbon, locally sourced, sustainable materials** including recycled steel and recycled-content aluminium and cement
- » The complex uses roughly **50% less water** than typical buildings in Abu Dhabi
- » Solar water heaters supply **75% of hot water demand** for the building
- » The air conditioning system **recovers 75%** of the energy released through air exhaust, using this to cool incoming fresh air
- » Up to 95% of energy generated from **lowering elevators** is harnessed and reused throughout the building
- » Thanks to **passive design** and **smart energy management**, the complex uses **42% less energy** than the global efficiency standard and 64% less than typical buildings in Abu Dhabi
- » Adjacent, shaded parking spaces include **26 charging stations** for electric vehicles





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