IRENA
International Renewable Energy Agency

CLIMATE ACTION WITH ENERGY TRANSITION

Enhancing and Implementing Nationally Determined Contributions

"The choices we make in the coming years will have a far-reaching impact. They could bring us on a path toward the goals we set out in 2015 when we adopted the highly consequential international agreements on sustainable development and climate change. Or they could take us in the opposite direction to further warming, with profound and irreversible economic and humanitarian consequences"

Francesco La Camera,
Director-General, IRENA.

CLIMATE CHANGE AND ENERGY TRANSITION

With fossil fuel consumption by the energy sector responsible for around two-thirds of global greenhouse gas emissions, renewable energy is vital in addressing one of the defining challenges of our times: climate change.

The 26th meeting of the Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC) – COP26 – in Glasgow emphasised the parties of the Paris Agreement to come together and drive ambitious GHG emission reductions for a climate resilient future, powered by renewables.

The global energy system needs to be transformed through a shift to renewable energy, high-levels of energy efficiency and increasing electrification of end-use sectors, such as heat and transport. This transition is imperative in fulfilling the goals of the landmark 2015 Paris Agreement.

The Nationally Determined Contributions (NDCs) submitted by countries under the Paris Agreement represent pledges on climate action that seek to limit global warming to well below 2°C over pre-industrial levels — and preferably 1.5 °C. Similarly, long-term, low emission development strategies under the Paris Agreement articulate countries' plans to achieve climate neutrality by mid-century.

Bernhard Staehli © Shutterstock

mxxfun © Shutterstock

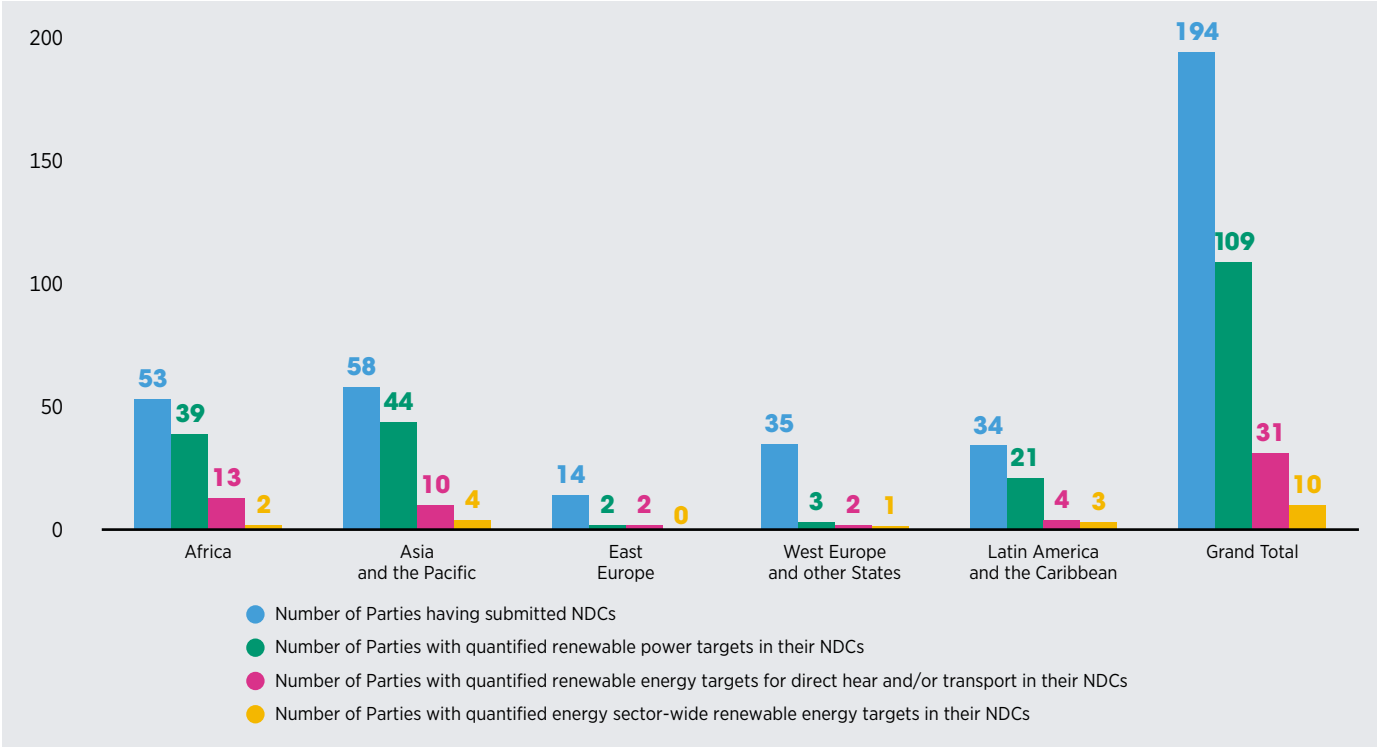
Of the total 194 NDCs submitted by parties, 143 parties mentioned quantified renewable energy targets in their NDCs. This includes 109 NDCs with quantified renewable energy based power targets. Parties have also been considering renewable energy to deploy in end-use sectors. 31 NDCs mentioned quantified renewable energy targets for direct heat and/or transport sector, while 10 parties have energy sector-wide quantified renewable energy targets in their NDCs. In addition, all 49 long-term, low emission development strategy submissions to date include emission reductions based on renewables.

The International Renewable Energy Agency (IRENA), which is dedicated to promoting renewables as a key climate solution, has been supporting the parties of the Paris Agreement in enhancing their climate ambitions and implementing the climate goals through energy transition.

IRENA provides expertise, analysis and knowledge on technologies, policies and finance for the global energy transition. IRENA works closely with other global, regional, national and local partners to build momentum for inclusive climate action, based on renewables.

The COVID-19 pandemic – although disrupting economies and devastating people's lives over the past two years – has also underlined the resilience of renewable energy based on locally available sources, independent of global fossil fuel supply chains. In responding to the crisis, governments have sought climate-resilient energy options, aiming to align stimulus investments with the creation of climate-safe infrastructure and new, green job opportunities.

Renewable energy components in Nationally Determined Contributions

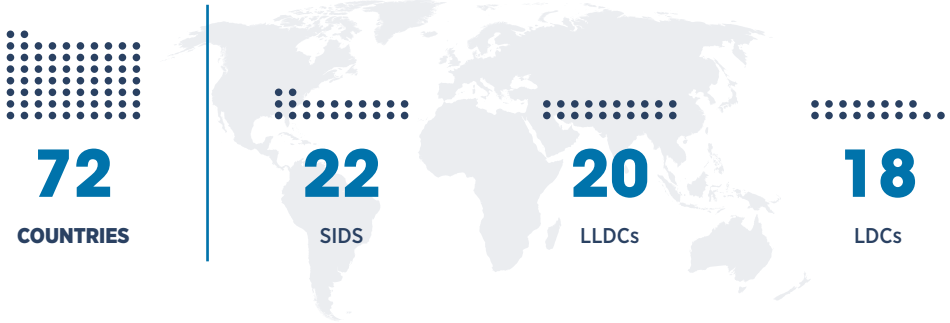


Note: Figures were last updated and verified on 01 November 2021.
Source: IRENA

COUNTRY ENGAGEMENT

IRENA's current engagement on climate action support spans 73 countries with combined population of more than 1.8 billion. These countries also have energy related GHG emissions approaching 3.2 billion tonnes of carbon dioxide equivalent (CO_2e) per year. These include 22 Small Island Developing States (SIDS) and 18 Least Developed Countries (LDCs), and, 20 Landlocked Developing Countries (LLDCs).

IRENA's support spectrum covers all the regions of the world, including Asia-Pacific, South East Europe, Latin America and the Caribbean, the Middle East, North Africa and Sub-Saharan Africa. IRENA has set-up a comprehensive and robust mechanisms in scoping, planning and delivery of support to ensure effectiveness and efficiency in the implementation of activities.



IRENA is engaging with countries in various ways to help them accelerate their transition to renewables and build climate-resilient energy systems.

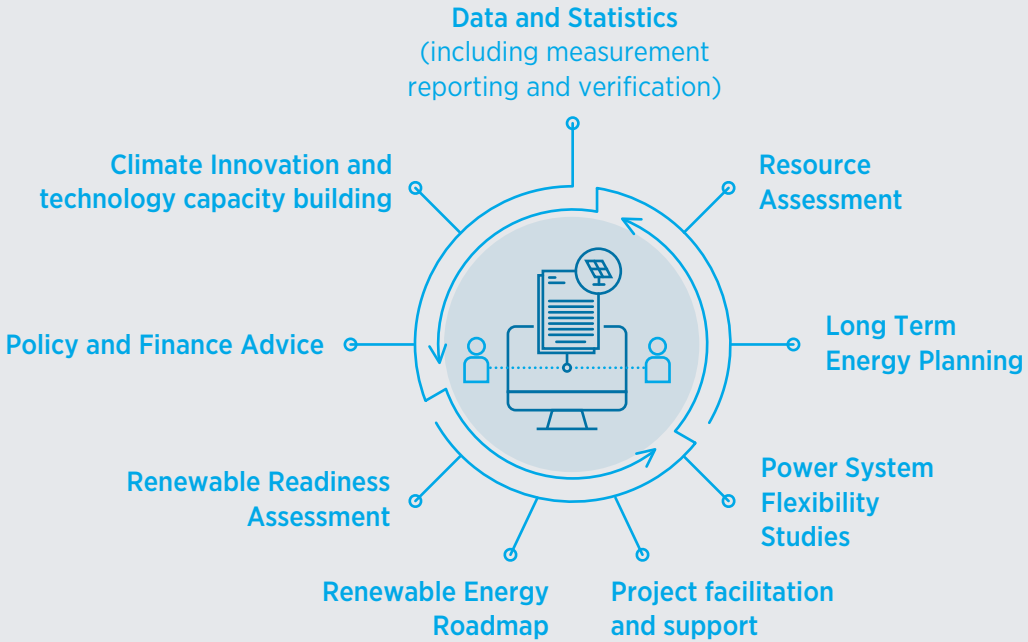
Through capacity building on data and statistics collection and management, IRENA has helped several countries improve their renewable energy statistics. Renewable Energy Roadmap (REmap) analysis and other energy planning offer long-term perspectives on country-specific, feasible decarbonisation options for power systems, as well as end-use sectors.

Renewables Readiness Assessment (RRA) studies based on country-led stakeholder consultations, along with Sectoral Analysis and capacity building in various areas of policy and technology, have helped countries create the conditions necessary for the scaling up of renewable energy investments. IRENA's Long-term Energy Scenario (LTES) Network offers a platform for government planners to exchange experience on the use and development of long-term energy scenarios in the context of the clean energy transition.

IRENA also provides assistance with the establishment of effective Monitoring, Reporting and Verification (MRV) systems, through which countries track and report on the implementation of NDCs.

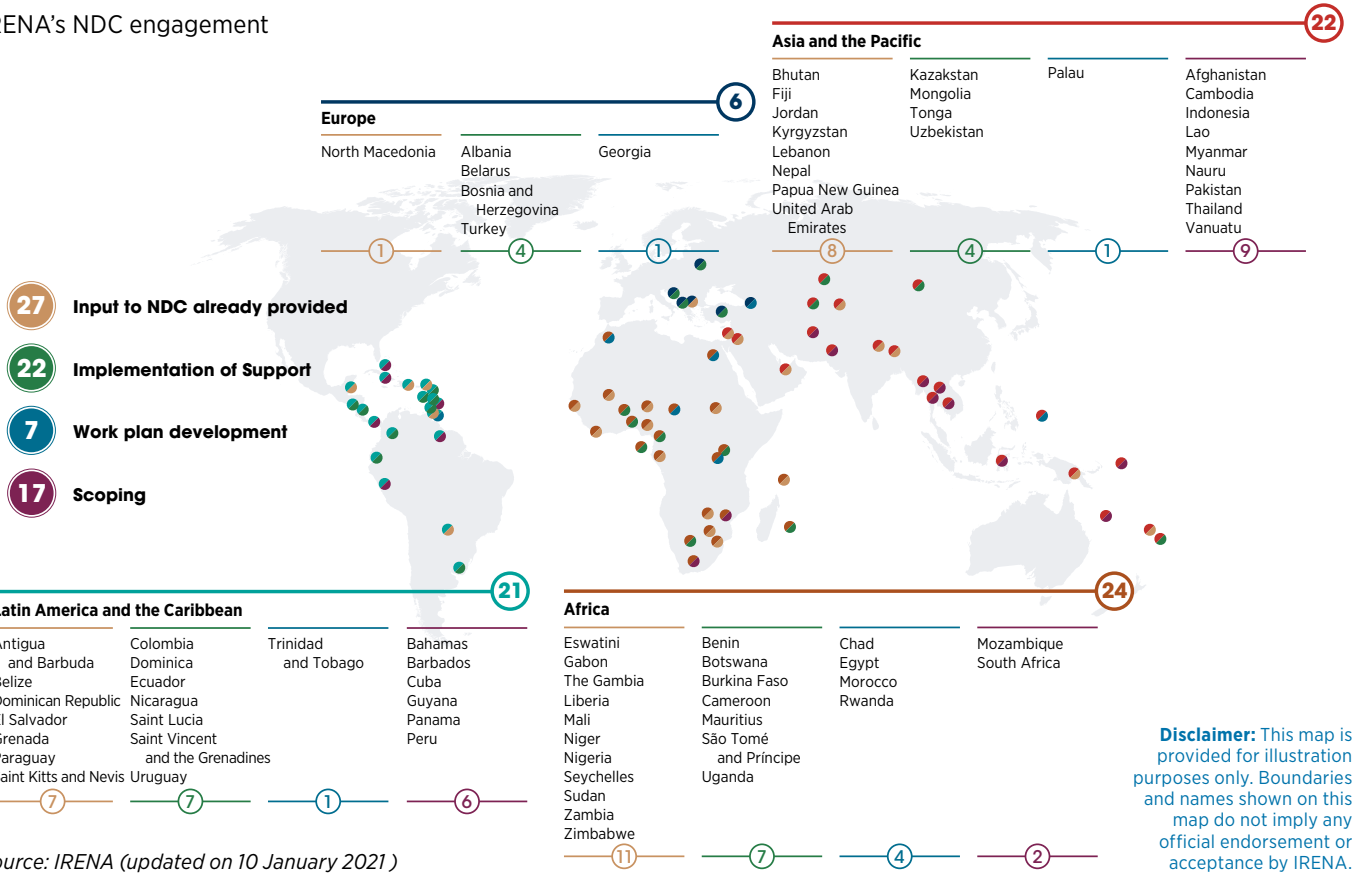
IRENA extends support in the NDC implementation phase through enabling frameworks, and through project facilitaiton and support to facilitate the realisation of investments.

How IRENA helps countries strengthen and implement their climate pledges:



Source: IRENA

IRENA's NDC engagement

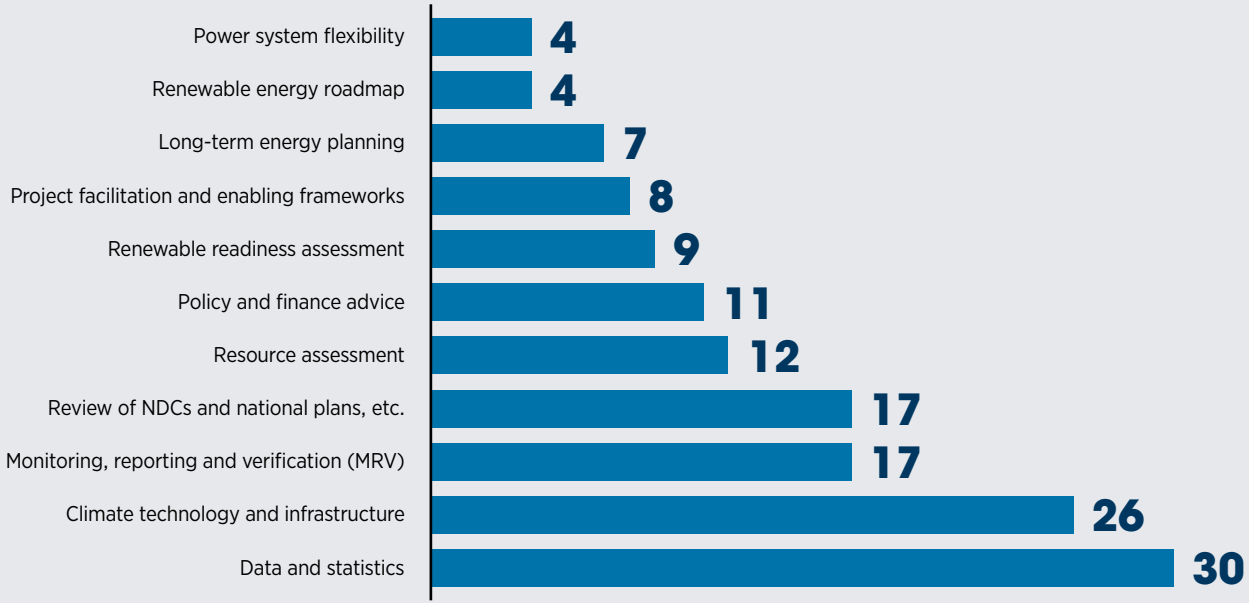


Source: IRENA (updated on 10 January 2021)

Disclaimer: This map is provided for illustration purposes only. Boundaries and names shown on this map do not imply any official endorsement or acceptance by IRENA.

Distribution of work packages

IRENA is currently pursuing 145 activities based on the needs and interests of the member states on different work packages in enhancing and implementing their renewable energy plans as climate actions.



Source: IRENA (updated on 10 January 2022)

IRENA works directly with its member countries and with development partners and agencies to fulfil requests and deliver support on NDCs.

Key partnerships

United Nations Development Programme (UNDP) Climate Promise

European Commission, INTPA

Regional Pacific NDC Hub

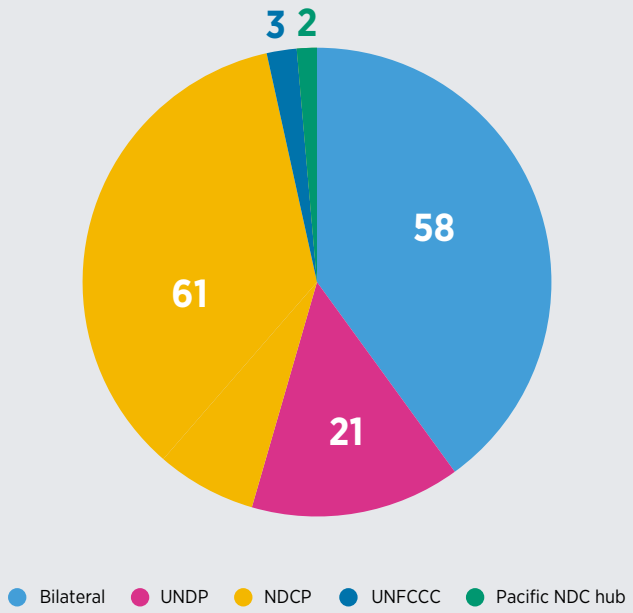
United Nations Framework on Climate Change Convention (UNFCCC) and its Regional Collaboration Centres (RCCs)

UK COP26 Presidency

NDC Partnership on Climate Action Enhancement Package (CAEP)

Sources of requests

The requests for support on energy transition as climate action are received through bilateral engagement with the member states, or through IRENA's institutional partnership and collaboration with UNDP, NDC Partnership (CAEP and direct requests), UNFCCC and Regional Pacific NDC Hub, etc.



Source: IRENA (updated on 10 January 2022)

"SIDS are the frontline countries and they have special circumstances and needs arising from the adverse impacts of climate change and the resulting high cost. An Energy Transition through renewables is a key mitigation and adaptation strategy for islands since it can contribute to a resilient energy system while allowing for the capturing of abundant solar and wind resources. Antigua & Barbuda has been teaming up with our valuable partner IRENA on a decarbonisation roadmap for the country as well as a just transition to a climate neutral future."

Ms. Diann Black-Layne,
Ambassador for Climate Change, Antigua & Barbuda,
Chief Negotiator for Alliance of Small Islands States (AOSIS) on Climate Change.

SELECTED CASES

Duarte Dellarole © Shutterstock

Belize

Belize submitted its updated NDC on 1 September 2019. IRENA supported Belize in specifying NDC energy targets based on international guidelines and on-the-ground data, as well as proposing key progress indicators. IRENA is also supporting the development of a baseline energy scenario and the country's energy transition pathways through REmap analysis. In addition, it is providing insights to the country's long-term decarbonisation strategy.

"The updated NDC was supported by the NDC Partnership with IRENA, FAO and UNFCCC RCCMRVH." (Belize updated NDC, 01 Sept 2021).

Ronald Plett © Shutterstock

Khanthachai C © Shutterstock

Bhutan

Bhutan used the NDC revision process as an opportunity to reflect on energy transition in the country in its NDC revision process. Bhutan's RRA (IRENA, 2019) outlined a strategic roadmap for the energy sector. This has also fed into the NDC revision process, showing how Bhutan could achieve long-term energy security through a diversified and sustainable supply mix. RRA findings show that renewable energy technologies, such as solar photovoltaic (PV), wind, bioenergy and small hydropower, could offer opportunities for diversifying the country's energy mix and help address rising energy demand. Distributed renewables can also provide socioeconomic benefits, including income through productive uses and improvements in living conditions, while reducing indoor pollution and deforestation through enhanced access to energy.

Jess Kraft © Shutterstock

Ecuador

IRENA is supporting Ecuador on NDC implementation through a range of activities, including automating the calculation of emission factors, which enables the national grid to establish a long-term system for monitoring, reporting and verification (MRV). IRENA is also supporting the enhancement of local capacity through developing a long-term scenario for energy and climate target setting. Through concept note development for the financing of bio-digesters, IRENA has support Ecuador in securing key project finance in support of NDC implementation.

Hugo Brizard - YouGoPhoto © Shutterstock

El Salvador

IRENA supported the Republic of El Salvador in its NDC through a variety of service offerings, including RRA, REmap, energy data, and MRV, climate technology and infrastructure, as well as through support on NDC drafting. As part of the climate technology and infrastructure work package, IRENA developed a mitigation analysis for El Salvador's agro-industry sub-sector - and was well acknowledged by the government in its updated NDC (January 2021). IRENA is also providing a country energy perspective for 2030, assessing renewable and energy efficiency penetration. This is part of the REmap Central America goal of facilitating analysis of energy emission reduction targets, sector by sector.

Pawel Kazmierczak © Shutterstock

Grenada

IRENA's support to Grenada in developing renewable energy data and statistics has provided added clarity, transparency and understanding of NDC targets — and was well acknowledged by the government in its second NDC. IRENA's support also includes reviewing NDC content and target structures, conducting an energy audit in the buildings sector, and proposing a strategy to systematise data collection and calculations for transport-related greenhouse gas emissions.

"The Government of Grenada is appreciative of the support provided by IRENA."
(Grenada's 2nd NDC, November 30, 2020).

Giscard Matar © Shutterstock

Lebanon

IRENA Renewable Energy Outlook: Lebanon 2020 has helped provide an analytical basis for enhancing the renewable energy targets to be included in its NDC. The recommendations made by the REO have also helped the country in preparing an action plan for the implementation of NDC mitigation targets, especially regarding renewable energy.

"This NDC represents a progression beyond Lebanon's 2015 NDC...guided by the IRENA Renewable Energy Outlook: Lebanon.." (Lebanon updated NDC, March 16, 2021)

jappasta © Shutterstock

Papua New Guinea

IRENA has assisted Papua New Guinea in revising its NDC targets for the energy sector, in line with the Enhanced Transparency Framework (ETF) of the Paris Agreement and as recognised in the country's enhanced NDC. IRENA is also providing guidance on the country's implementation plan for the energy sector. In addition, IRENA has helped organise meetings of the Energy Sub-Technical Working Committee, gathering stakeholders from across the sector, while reporting on the status of energy statistics and offering recommendations for improvement.

"Special thanks also go to a number of development partners, including IRENA, etc., for invaluable support." (Papua New Guinea's enhanced NDC, December 16, 2020)

Darryl Brooks © Shutterstock

Saint Kitts and Nevis

The government of Saint Kitts and Nevis received support from IRENA for the NDC revision and enhancement phase. IRENA support led to the adoption of a 100 percent renewable energy target, improvements in electricity transmission and distribution, as well as the introduction of electric vehicles and associated infrastructure. IRENA delivered a technico-economic assessment of cost-effective mitigation options to inform the NDC update with a focus on the power and transport sectors through the use of renewable energy. Up to nine mitigation measures were identified and quantified in co-ordination with national stakeholders.

"The NDC revision process was supported by ... and IRENA in collaboration with the European Commission's support through the EU Technical Assistance Facility (EUTAF) on the technical component for the assessment and modelling of the mitigation actions."
(Saint Kitts and Nevis' updated ndc, 25 October 2021)

IRENA supports countries in meeting their climate commitments and scaling up ambitions for renewables – both through bilateral engagement and through broader institutional partnerships.

Damian Pankowiec © Shutterstock

The Gambia

The Gambia's NDC update was supported by a technical analysis of the cost-effectiveness of renewable energy technology options in the country's climate action planning processes. The technical study supported climate policy/decision makers by providing valuable information for the identification, quantification and selection of mitigation measures in the power sector and helped inform the path to cost-effectively achieve mitigation targets. The analysis served as an input to the development of long-term sector plans, while supporting the development of renewable energy mitigation options, fostering energy access and promoting the involvement of the private sector.

"MECCNAR was in charge of the NDC revision process in The Gambia. International partners, including ... IRENA ..., supported the process. The process produced two outputs: The Gambia's Second NDC (NDC2) and an NDC Update Report..."

(The Gambia's second ndc, submitted 12 September 2021)

Eugene Suslo © Shutterstock

"Climate Vulnerable Forum (CVF) and V20 member countries aspire to drive prosperity through climate action that ensures sustainability and resilient socio-economic growth. Energy transition through high shares of renewables is one of the main pillars of the Climate Prosperity Plan 2030 that is a strategic investment agenda to boost prosperity and tackle frontline climate threats. CVF and IRENA are working with several CVF members states in scaling up renewable energy ambition in implementing climate goals. CVF look forward to strengthening its collaboration with IRENA on climate action driven by high shares of renewable energy.""

H.E. Mr. Tosi Mpanu Mpanu
CVF Thematic Ambassador for Renewable Energy, Chair, Subsidiary Body for Scientific and Technological Advice, UNFCCC, Ambassador, Cabinet of the Minister for Environment and Sustainable Development, Democratic Republic of the Congo.

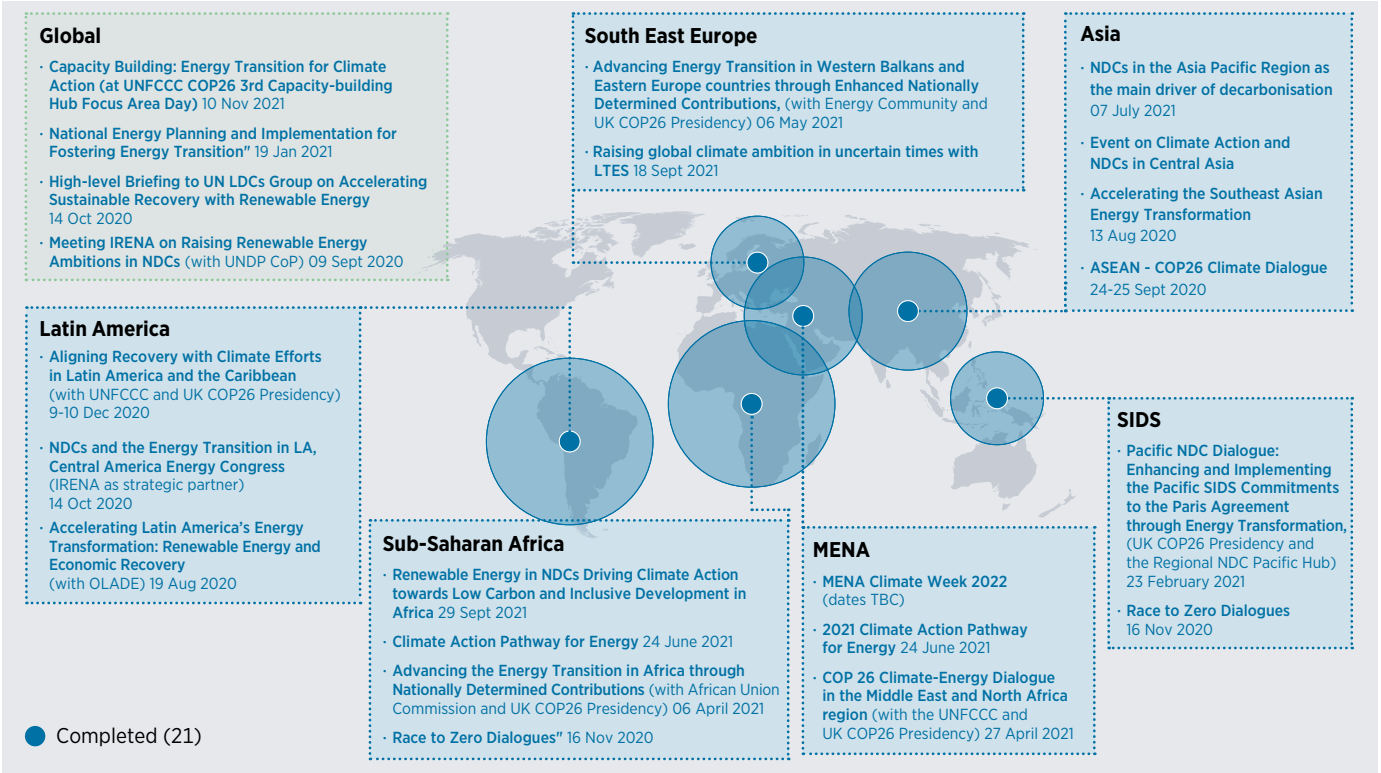
ADVOCACY AND OUTREACH

IRENA has organised a range of events, webinars and dialogues on NDCs and climate action to showcase the global, regional and country-level impact of climate change, and to elicit discussion on options to mitigate these impacts and ensure long-term sustainability.

BAZA Production © Shutterstock

While the COVID-19 pandemic has constrained travel and mobility, IRENA has kept the message of climate action high on the agenda in countries' post-COVID recovery plans.

IRENA's Global and regional events on climate action



Source: IRENA (updated on 10 January 2022)

HELPING COUNTRIES STRENGTHEN THEIR CLIMATE PLEDGES: **IRENA'S NDC SUPPORT INITIATIVE**

Data and statistics

Repository of statistics on renewable energy capacity, generation, energy balances, finance and investments, and costs.

Monitoring, reporting and verification (MRV)

Technical assistance and capacity building on collecting, analysing, recording and reporting detailed and accurate data.

Policy and finance advice

Analysis of current policy and finance landscape to identify existing barriers to the deployment of renewable energy and policy recommendations to help attract investments into the sector, informing country-level climate action.

Support to countries in enhancing their capacity on different topics, including renewable energy targets, policies and regulations, financial instruments and investment frameworks.

Resource assessment

Site assessment, suitability assessment, zoning assessment, SolarCity simulator as well as capacity building to assess the potential of renewable energy.

Long-term energy planning

Enhancement of long-term renewable energy planning scenarios and capacity building for energy planning and modelling.

Power system flexibility

Assessment of the flexibility of the power system and identification of cost-effective, flexible solutions for a greater integration of variable renewable energy and increase the share of renewables including energy storage, demand-side flexibility and sector coupling options (i.e. power-to-hydrogen, power-to-heat and electric vehicles).

Thongsuk7824 © Shutterstock

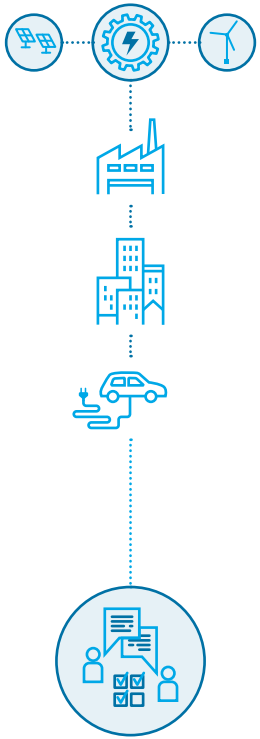
Renewable energy roadmap

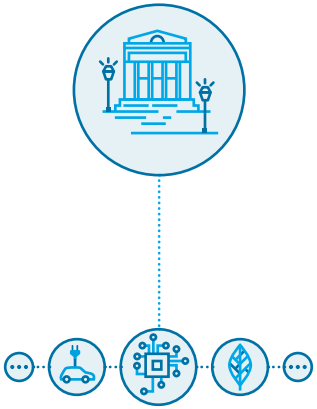
REmap assesses renewable energy potential in power, heating, cooling and transport, and studies possible technology pathways and other metrics like technology, costs, investments and externalities like air pollution, emissions, and economic indicators.

Climate technology and infrastructure

Assisting countries in developing and implementing mitigation and adaptation measures to enhance NDCs, strengthen NDC implementation plans, and advance LT-LEDS through the assessment of the performance, mitigation potential, associated costs, and adaptation co-benefits of renewable energy technologies and associated infrastructure in the power, transport, buildings and industry sub-sectors.

Mimadeo © Shutterstock





Renewable readiness assessment

A tool for carrying out comprehensive evaluations of the conditions for renewable energy deployment in countries that can inform the decision makers in scaling up renewable energy ambitions.

Project facilitation services

IRENA assists countries access finance through the Climate Investment Platform (CIP) in partnership with UNDP, SEforAll and in collaboration with the Green Climate Fund (GCF). IRENA teams up with financial institutions, project developers and the private sector in developing solid project pipelines backed by the governments; assisting in bankability and access to finance of projects. CIP will be further supported through a series of Investment Forums at regional levels. More details on CIP are to follow in the upcoming section.

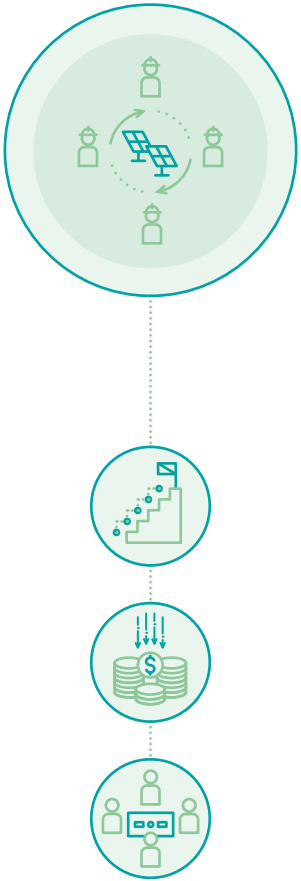
Scharfsinn © Shutterstock

The section on project facilitation and support only applies to IRENA's NDC implementation support initiative.

PROJECT FACILITATION AND SUPPORT ACTIVITIES

IRENA is featuring the **Climate Investment Platform – CIP** – and **ETAF Platform** to **facilitate the finance matchmaking** between registered **financing institutions** and registered **renewable energy projects' proponents**.

Nataliya Hora © Shutterstock



The role of IRENA is to reduce transaction time and transaction costs by identifying adequate stakeholders and ensuring that projects are presented with the right content to the right Partner/Financier.

IRENA/PFS Energy Compact 2030 Targets

Accelerate Energy Transition

14
IRENA regions

Conduct annual investment forums-matchmaking events across all regions

3
USD billion

Mobilise financial resources for implementation of renewable energy projects

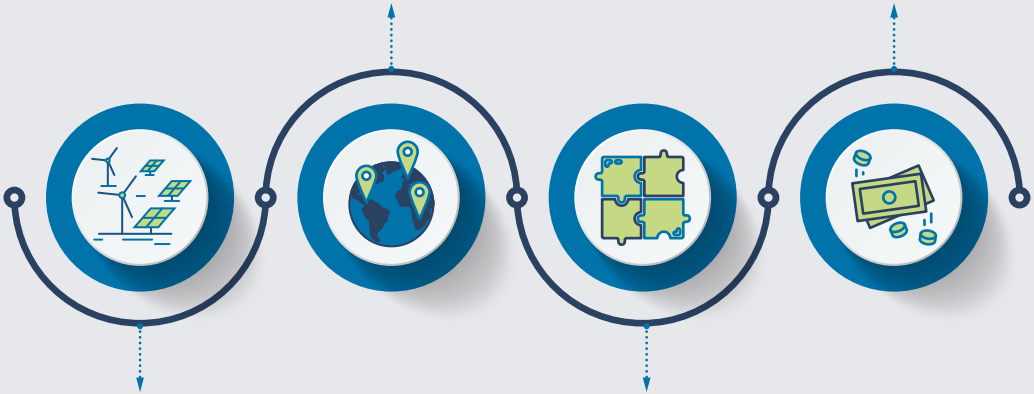
Facilitate
100
projects
towards investor readiness

Unlocking renewable energy investments through project facilitation

REGIONAL FORUMS

Preparation of regional Investment forums to identify and realise potentials in project finance, while collaborating with existing investment platforms

Support IRENA's global investment and financing plan in the Post–COVID 19 recovery Agenda



PROJECTS SUPPORT

Facilitation of bankable renewable energy projects in developing countries through the Climate Investment Platform, the Energy Transition Accelerator Financing Platform, and a new risk mitigation initiative currently in progress

PARTNERSHIPS

Promote and facilitate public-private partnerships and intergovernmental co-operation to scale-up investments in renewables-based energy transitions

CLIMATE INVESTMENT PLATFORM

In line with the mandate given to IRENA by its Membership, the Agency, together with the United Nations Development Programme (UNDP), Sustainable Energy for All (SEforALL) and in co-operation with the GCF have launched the Climate Investment Platform (CIP).

CIP's objective is to **mobilise capital towards developing countries to accelerate the scale of renewable energy** deployment to meet Nationally Determined Contributions (NDCs) targets and achieve compliance with Sustainable Development Goals (SDGs).

33
Projects supported

1.3
USD billion
Projected total capital mobilisation

510
MW
Projected total installed capacity

5
tCO_2e million
Projected total GHG emission reduced

CIP partners and projects

CIP registered projects and IRENA's support

265 Projects submitted for consideration

65 Projects eligible for technical assistance and financing support

289 Registered partners

57 Registered financial institutions

25 kW ~ 100 MW capacity projects supported

Technologies supported: Solar PV (grid connected and off-grid), hydropower, bioenergy (biogas, biofuel, biomass), wind energy, hybrid

33 project supported from 21 countries

15 projects introduced to partners, 8 matched

KEY ACHIEVEMENTS

Mobilisation of Compañia Española de Financiación del Desarrollo (COFIDES) loan
IRENA identified and supported off-grid projects in Sub-Saharan Africa that are eligible for the COFIDES loans. Two projects were shortlisted for the loan and they are at financial closure phase.

Project 1: Development of 3 MW solar energy-based community activity centers in Burkina Faso
Project 2: 4.7 MW Solar electrification of villages in Senegal

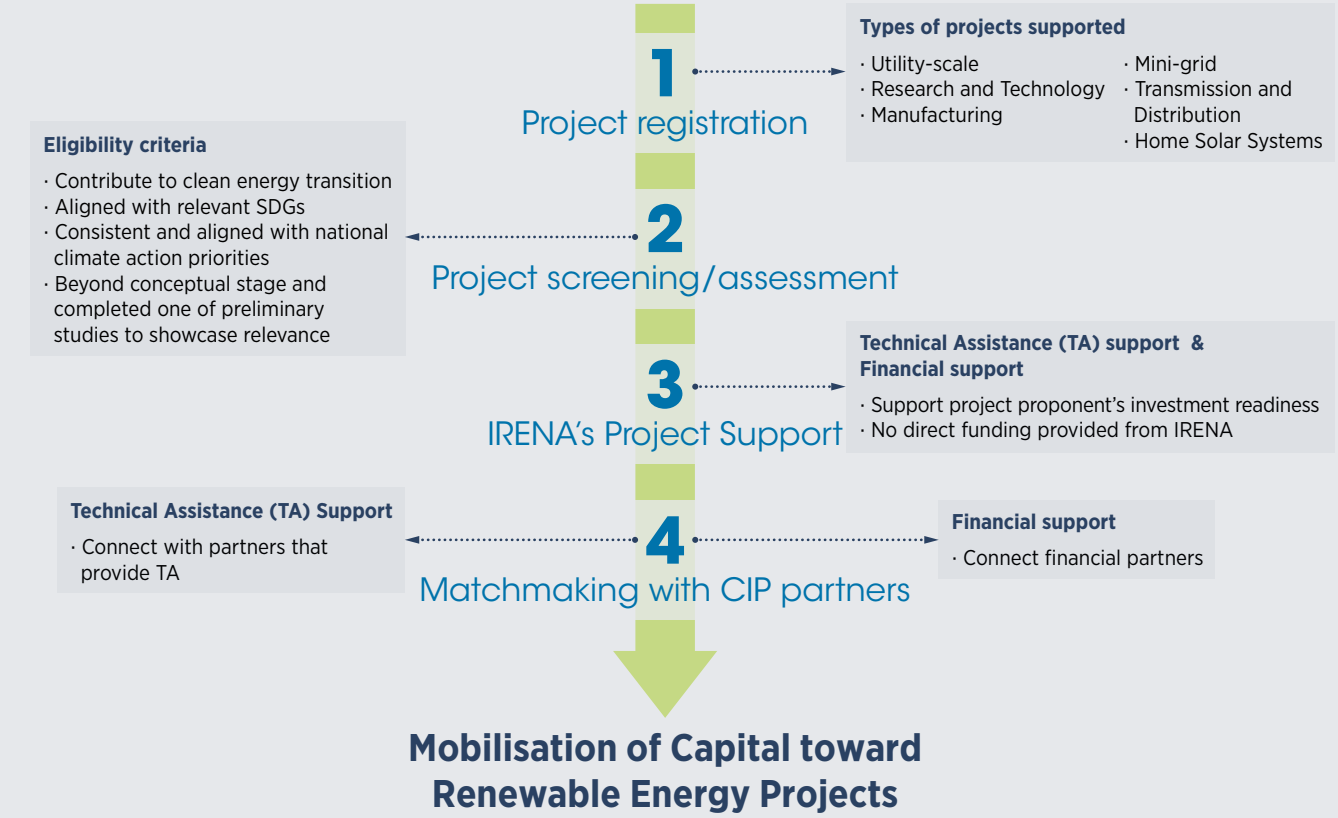
Eswatini – Provided technical assistance for a regional hospital to support capacity building of the project staff and the operation and maintenance of the hospital facilities, as well as support on certification of the energy managers - support on sustainable energy certification
Egypt - Identified alternatives to sovereign guarantee for a 500 MW wind project in Egypt (financial close pending conditions precedent)

How to join CIP

Become a Partner at
https://irena.org/irenaforcip
Or Email
CIP@IRENA.org;
Abartley@irena.org

Submit a Request at
https://irena.org/irenaforcip
Or Email
CIP@IRENA.org;
JJeong@irena.org

CIP project facilitation and support



ENERGY TRANSITION ACCELERATOR FINANCING PLATFORM

An inclusive, multi-stakeholder climate finance solution managed by IRENA to advance the energy transition across the Agency's 167-strong Membership.

ETAF's Goal is to facilitate the implementation and funding of 1.5 GW of renewable energy projects.

Launched in 2021, ETAF aims to **mobilise USD 1.0** billion to accelerate the deployment of low-carbon technologies in emerging economies.

ETAF benefits from the institutional convening power of IRENA, the United Arab Emirates (UAE) and the Abu Dhabi Fund for Development (ADFD), and the **track-record built with the IRENA-ADFD Facility** implemented during 2013-2020.

ETAF leverages:

- **ADFD's 50 years' experience in concessional and development financing resources** worldwide, and their commitment to climate finance. ADFD anchors the ETAF with USD 400 million capital allocation to co-finance projects to 2030.
- **IRENA's global geographic footprint** and unparalleled **knowledge** of the renewable energy technologies.

ETAF'S VALUE PROPOSITION

To project developers

- Open rolling "Call for Projects" and periodic activities to offer guidance on projects' registration and submission process, eligibility and screening criteria.
- Access to IRENA's resources and experts, providing curated guidance and technical assistance targeted to local and regional developers.
- Facilitate access to funding provided by Funding Partners, as well as other co-funding through a matchmaking process.

To funding partners

- Facilitate access to a diversify project pipeline submitted by project developers located in IRENA's members.
- Network with various country's stakeholders, not limited to ministerial officers, regulatory entities, private developers.
- Leverage complementarities of Partners and other co-funding sources to implement financial solutions to scale up clean energy technologies.
- Matchmake process to align Partners and other co-funding sources' credit and risk objectives, financial solutions to efficiently speed the projects review process up.

IRENA's climate action work has been supported through the generous voluntary contributions from;

Contributors

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

International Climate Initiative (Supported by BMU Germany)

European Commission

European Commission, INTPA

Wallonie

French Community, Belgium

MINISTRY OF FOREIGN AFFAIRS OF DENMARK

UNDP

Empowered lives. Resilient nations.

United Nations Development Programme (UNDP) Climate Promise

NDC PARTNERSHIP

NDC Partnership on Climate Action Enhancement Package (CAEP)

Norwegian Ministry of Foreign Affairs

List of abbreviations

AOSIS	Alliance of Small Island States
AVRIL	Addressing variable renewables in long term planning
CAEP	Climate Action Enhancement Package
CIP	Climate investment platform
CO_2e	Carbon dioxide equivalent
COP26	Twenty-sixth meeting of the Conference of Parties to the UNFCCC
ETAF	Energy transition accelerator financing platform
ETF	Enhanced Transparency Framework
GHG	Greenhouse gas
GCF	Green Climate Fund
ICTU	Information, clarity, transparency and understanding
LDC	Least developed countries
LHI	IRENA SIDS Lighthouse Initiative
LLDC	Land-locked developing countries
LTES	Long-term energy scenario
LT LEDS	Long-term, low greenhouse gas emission development strategy
LTS	Long term strategy
MRV	Monitoring, reporting and verification
NDC	Nationally Determined Conditions
PV	Photovoltaic
RCC	Regional Collaboration Centre
REmap	Renewable energy roadmap
REO	Renewable energy outlook
SIDS	Small islands developing states
SPLAT	System planning test
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

DISCLAIMER

This publication and the material herein are provided "as is". All reasonable precautions have been taken by IRENA to verify the reliability of the material in this publication. However, neither IRENA nor any of its officials, agents, data or other third-party content providers provides a warranty of any kind, either expressed or implied, and they accept no responsibility or liability for any consequence of use of the publication or material herein.

The information contained herein does not necessarily represent the views of all Members of IRENA. The mention of specific companies or certain projects or products does not imply that they are endorsed or recommended by IRENA in preference to others of a similar nature that are not mentioned. The designations employed and the presentation of material herein do not imply the expression of any opinion on the part of IRENA concerning the legal status of any region, country, territory, city or area or of its authorities, or concerning the delimitation of frontiers or boundaries.

IRENA
International Renewable Energy Agency

About IRENA

The International Renewable Energy Agency (IRENA) serves as a centre of excellence, repository of policy, technology, resource and financial knowledge, as the principal platform for international co-operation and as a driver of action on the ground in advancing 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.

For more information about IRENA's work on NDC support, or to engage us to discuss collaboration, please contact us by e-mailing: CLIMATEACTION@IRENA.ORG.