



RENEWABLES NOW



THE FUTURE OF ENERGY

NEW TECHNOLOGIES & HUMAN DEVELOPMENT

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AGENDA

REN21 – Who we are

Status of the Energy Transition

The Human Aspects

Future Studies: Data & Storytelling



WE DRIVE THE SHIFT TO RENEWABLES – NOW!

We are the **only global community** of renewable energy actors from science, academia, NGOs, governments, and industry.

Our more than **4,000 community members** co-operate collecting information, changing norms and debating.



We build upon a **decentralised intelligence**, ensuring high responsiveness to an everchanging environment.

Our **annual publications** are probably the world's most comprehensive, crowdsourced reports on renewables.

20 YEARS OF REN21, 20 YEARS OF THE GSR

CROWD-SOURCED DATA AND INTELLIGENCE SINCE 2005



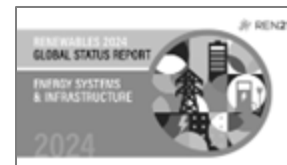
The GSR is built with knowledge from **hundreds of expert contributors** who share data, insights, and stories on renewable energy developments across the globe.

THE RENEWABLES 2024 GLOBAL STATUS REPORT (GSR) COLLECTION



Global Overview

- Policy and Targets
- Investment and Finance
- Challenges and Opportunities

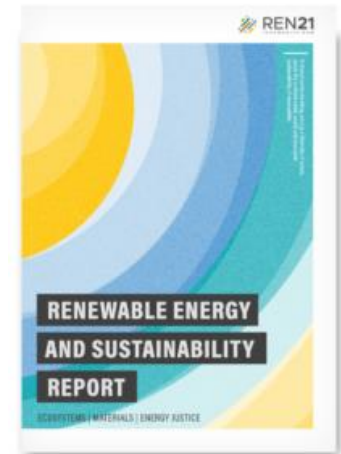


Upcoming Modules

- Renewables in Energy Demand (May 2024)
- Renewables in Energy Supply (June 2024)
- Energy Systems and Infrastructure for Renewables (June 2024)
- Economic and Social Value Creation with Renewables (September 2024)

RENEWABLE ENERGY AND SUSTAINABILITY REPORT

- **ECOSYSTEMS**
- **MATERIALS**
- **ENERGY JUSTICE**





ARE WE ON TRACK FOR A RENEWABLES-BASED FUTURE?

THE 2023 MOMENTUM FOR RENEWABLES



Energy security goals and **industrial strategies** are helping to boost renewables.

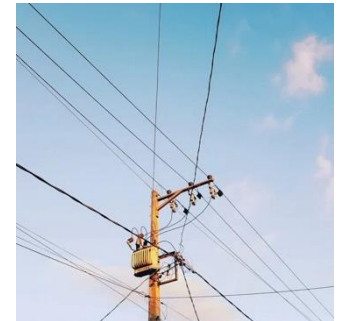
Trade and industrial policies support renewables. The EU, for instance, proposed the Net-Zero Industry Act.

In 2023, global additions to **renewable power capacity increased an estimated 36%** in 2023 to reach 473 GW.

Employment in the renewables sector increased 8% in 2022 to reach 13.7 million jobs.

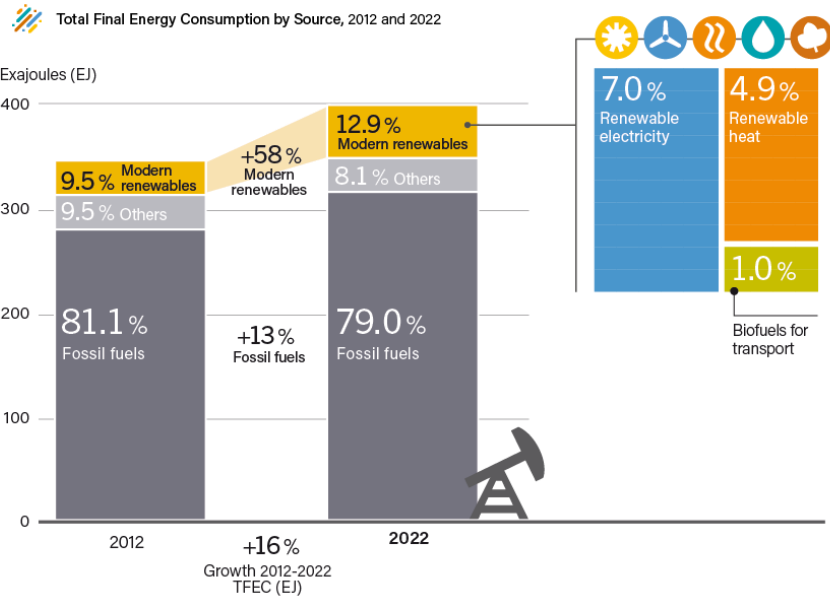


At COP28, 130 countries pledged to **triple renewable power capacity** by 2030 and **double energy efficiency**.



RENEWABLES RISING, BUT...

WE CONSUME MORE ENERGY AND BURN MORE FOSSIL FUELS THAN EVER



Renewable energy deployment needs to go hand in hand with reducing **energy demand** and **phasing out fossil fuel**



ENERGY TRANSITION: THE HUMAN ASPECTS

SOCIAL ACCEPTANCE OF RENEWABLE ENERGY

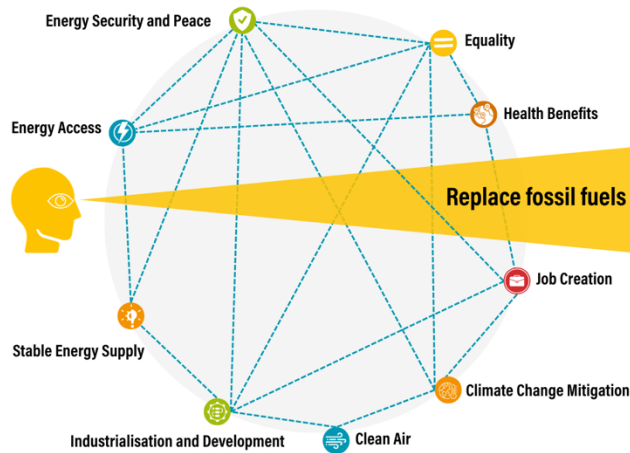


The energy transition requires **shifts in thinking and policy action** at all levels of society

ECONOMIC & SOCIAL VALUE CREATION

RENEWABLES DELIVER MULTIPLE BENEFITS

Renewable Energy Tunnel Vision



Need to focus on **wider benefits of renewables** for human development

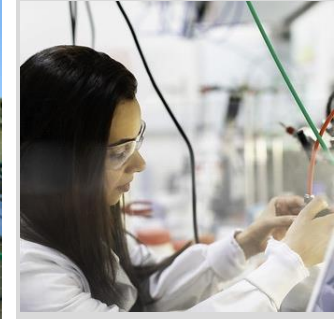
ECONOMIC & SOCIAL VALUE CREATION

RENEWABLES DELIVER MULTIPLE BENEFITS

Renewable energy fuels **economic activities**

Local value chains can be built around renewable energy everywhere

Replacing fossil fuels reduces air and water pollution, providing considerable **health benefits**



Electricity access is improved by a decentralised renewable energy supply



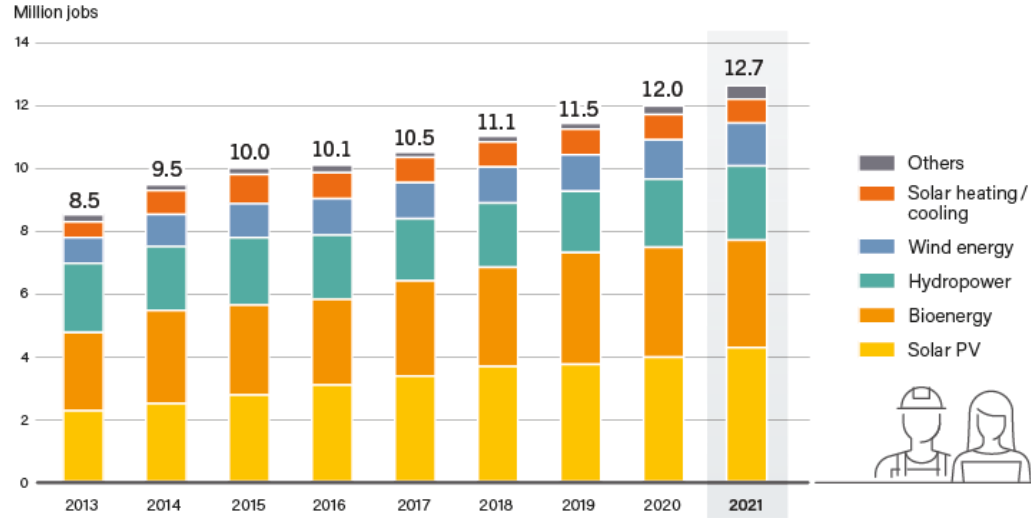
Employment in the renewables sector increased 8% in 2022 to reach 13.7 million jobs.

By creating new opportunities for women, renewables can **reduce gender inequality**

BUILDING A WORKFORCE FOR THE ENERGY TRANSITION

MODERN RENEWABLES CREATE JOBS

 Global Renewable Energy Employment, by Technology, 2013-2021



Large opportunities to create jobs, challenge to build workforce

- US: **5M** (clean energy)
- EU: **3.5M** by 2030
- India: **3.4M** by 2030
- SEA: **1.3M** by 2025
- South Africa: 520.000
- Nigeria: 250.000

LOCAL SUPPLY CHAINS

VALUE CREATION CLOSER TO HOME

Policies that are adopted globally to incentivise local supply chains:

- Regulations governing the use of **locally produced materials** are in place in more than **20 countries**, including **7 advanced economies**
- Import restrictions and higher tariffs on certain technologies
- Incentives for locally produced technologies
- Funds and grants allocated to support local manufacturing of renewable energy technologies
- Local content requirements in renewable power auctions
- Bans to export of unprocessed raw material





PERSPECTIVES

PERSPECTIVES

- **ENERGY JUSTICE**
- **ENERGY ACCESS**
- **FINANCE**
- **DATA & STORYTELLING**

The Energy Transition is
**not just about shifting
to renewable power
generation**



ENERGY JUSTICE

ENERGY JUSTICE

DISTRIBUTIONAL JUSTICE

- Climate impacts disproportionately affect vulnerable populations in low-emitting countries
- Renewable energy promotes decentralized governance, reduces environmental impact, and addresses energy poverty

RECOGNITIONAL JUSTICE

- Respecting human rights in the energy transition & addressing divergent perspectives of different stakeholders
- With the right regulations, renewable projects can be tailored to fit diverse contexts and provide economic development opportunities

PROCEDURAL JUSTICE

- Ensuring access to decision-making processes in multi-level legal systems, which can impact the just distribution of energy resources

Diverse elements of a just transition require **holistic thinking** and **inclusive energy planning**

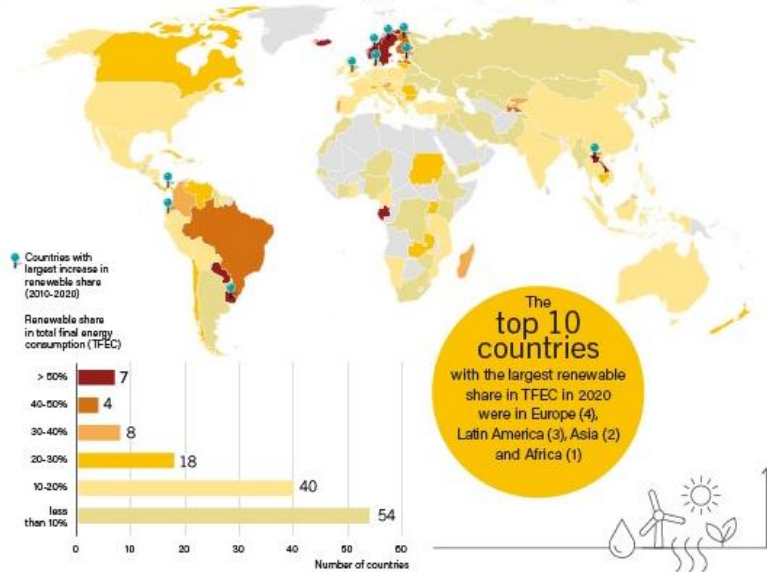


ENERGY ACCESS

UNEVEN DEPLOYMENT OF RENEWABLE ENERGY

THE TRANSITION REQUIRES EQUITY AND ENERGY ACCESS

 Renewable Share of Total Final Energy Consumption, by Country, 2020

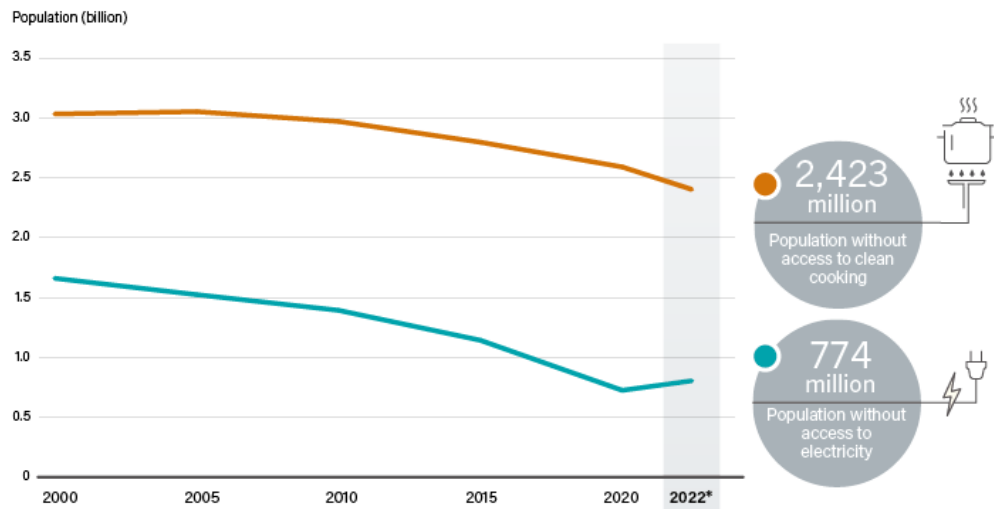


Only 7 countries have a renewable energy share in total final energy consumption above **50%**.

ENERGY ACCESS

GROWING INEQUALITY UNDERMINING A JUST TRANSITION

 Population without Access to Electricity and Clean Cooking, 2022



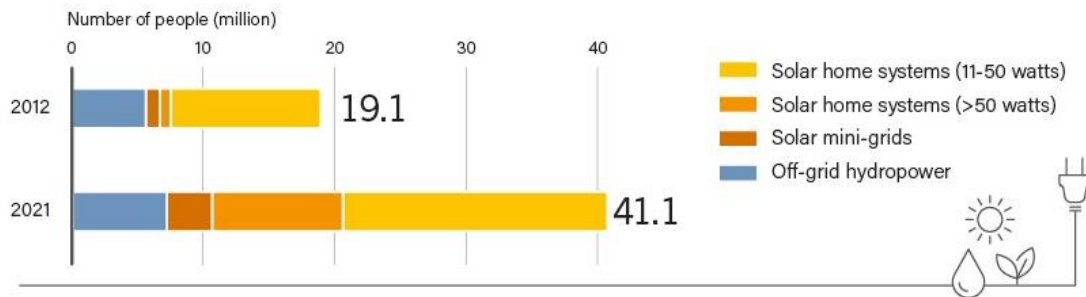
The 2022 energy crisis **reversed global progress on electricity access**, as lack of access was projected to increase for the first time in more than two decades.

OFF-GRID RENEWABLES

EXPANDING ACCESS TO EFFICIENT AND AFFORDABLE ENERGY




Population with Access to Electricity Through Off-Grid Renewable Energy Systems, 2012 and 2021



The number of people gaining access to electricity through off-grid renewable-based systems more than **doubled** in the last decade.

ENERGY ACCESS

GOVERNMENTS LACK OFFICIAL ENERGY ACCESS TARGETS

 Countries Without Universal Access to Electricity and Clean Cooking, and Status of Targets, as of End-2022



More than half of the countries without universal access to energy don't have access targets.



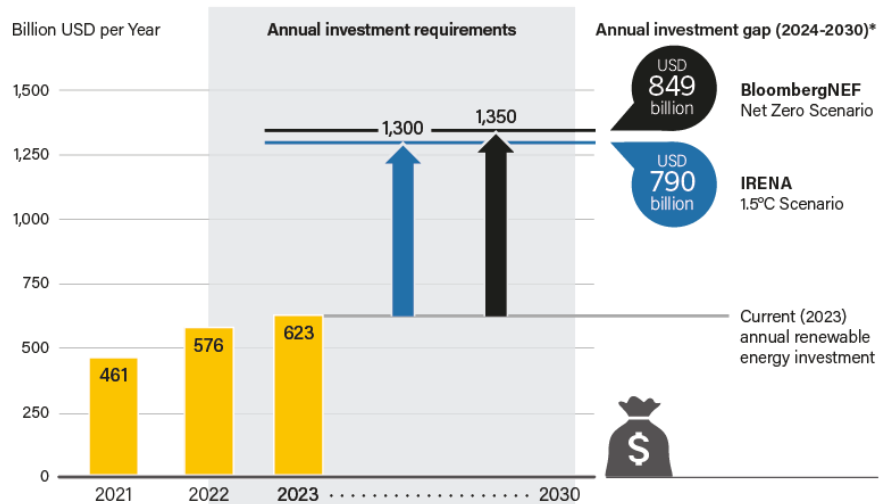
FINANCE

RECORD INVESTMENT BUT MASSIVE INCREASE NEEDED

MASSIVE INCREASE IN RENEWABLE ENERGY INVESTMENT NEEDED

AMBITIOUS ACTION NEEDED TO CLOSE INVESTMENT GAP

Range of Annual Renewable Energy Investment Needed in Climate Change Mitigation Scenarios, Compared to Recent Investments



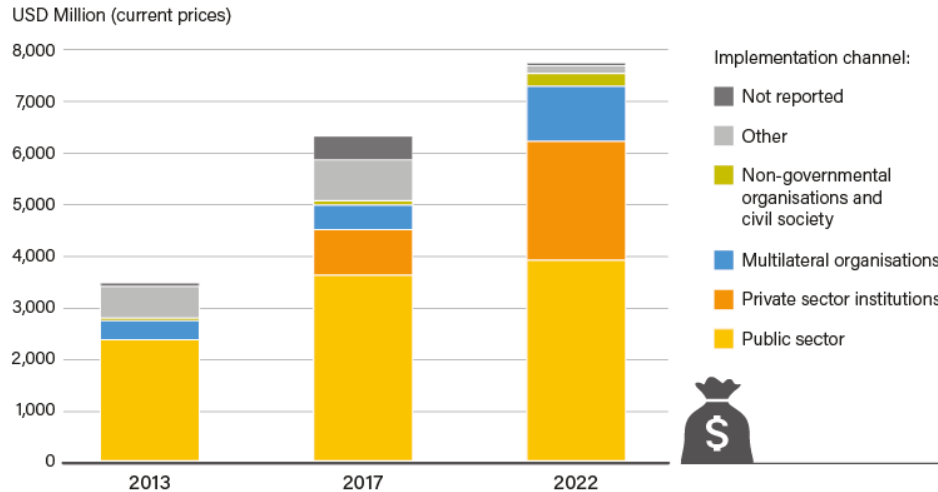
Source: REN 21 based on IRENA and BloombergNEF

Only 17.7% of global investment in Africa, Asia (excl. China) and Latin America & Caribbean, despite representing two-thirds of global population.

GROWTH OF DEVELOPMENT FINANCE FOR RENEWABLES

PUBLIC FINANCE NEEDED TO MOBILISE PRIVATE FINANCE

 Development Finance for Renewable Energy Generation by Channel, 2013, 2017 and 2022



Development finance for renewable energy in 2022: **USD 7.85 billion**

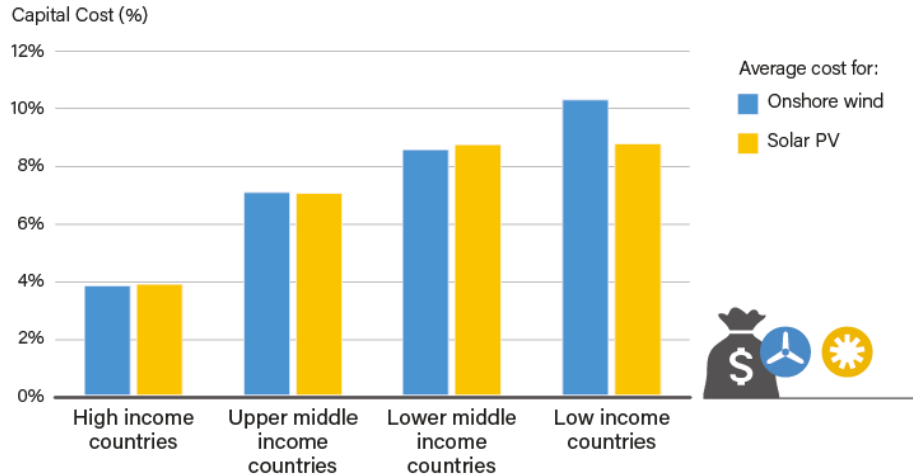
Representing **only 1.4%** of global renewable energy investment.

Source: OECD-DAC Creditor Reporting System (CRS) Database

GLOBAL DISPARITIES IN RENEWABLE INVESTMENT

DEVELOPING COUNTRIES FACE HIGHER COSTS OF CAPITAL THAN DEVELOPED ECONOMIES

 Weighted Average Cost of Capital for Onshore Wind Power and Solar PV, by Country Income Level, 2022



High cost of capital for onshore wind and solar PV in developing countries – partly due to legal and currency risks – **hampers financing for renewable energy projects**

Source: IRENA

SOLUTIONS & GOOD PRACTICES

- Jobs: training, reskilling, policy agendas
- Human rights: industry standards, reporting
- Finance: subsidies, feed-in tariffs, ESG criteria, blended finance
- Business models: PAYG, community energy

A wide range of policy instruments exist to promote energy justice



DATA & STORYTELLING

TELLING THE RENEWABLES STORY, ADVOCATING FOR AN EQUITABLE TRANSITION

DATA & STORYTELLING

- Inherent data collection challenges, e.g., energy access, off-grid renewables, economic benefits
- Need to go beyond numbers
 - Energy access -> Quality of energy
 - Jobs -> High quality jobs
 - Deployment -> Sustainability, Adaptation
- What stories do we want to tell?

Future studies and emerging issues require **relevant and reliable data**



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