



Achieving universal energy access in a low-carbon future

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The IEA works around the world to support
accelerated clean energy transitions that are

enabled by real-world **SOLUTIONS**

supported by **ANALYSIS**

and built on **DATA**



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World Energy Outlook 2018

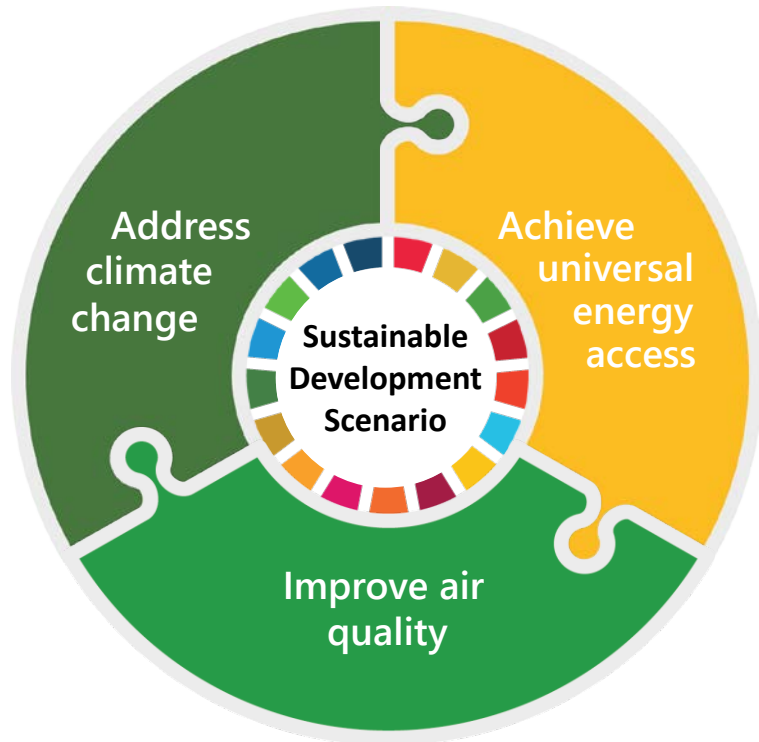


**Achieving universal energy access
in a low-carbon future**

Context: Energy and sustainable development

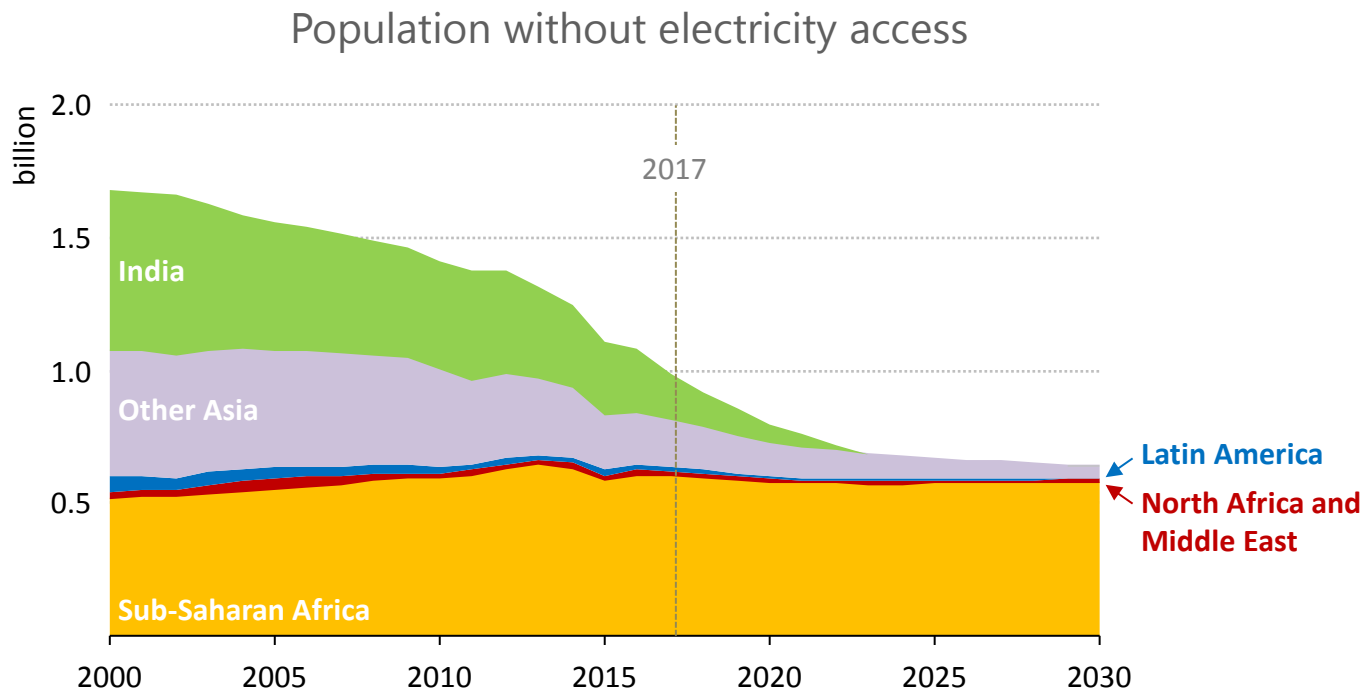
- Energy access is the “golden thread” that weaves together development, economic growth & sustainability
- Latest data show mixed progress on energy and sustainable development:
 - For the first time, the global population without access to electricity fell below 1 billion
 - Despite growth in renewables, energy-related CO₂ emissions rose in 2017 (and likely in 2018)
 - New policies tackle air pollution, which continues to cause millions of premature deaths
- Policy makers need well-grounded insights about different possible futures & how they come about. The *WEO* provides two key scenarios:
 - New Policies Scenario
 - Sustainable Development Scenario

An integrated strategy for energy & sustainable development



The Sustainable Development Scenario reduces CO₂ emissions while also tackling air pollution, achieving universal energy access, and assessing implications for water

Progress and outlook for electricity access

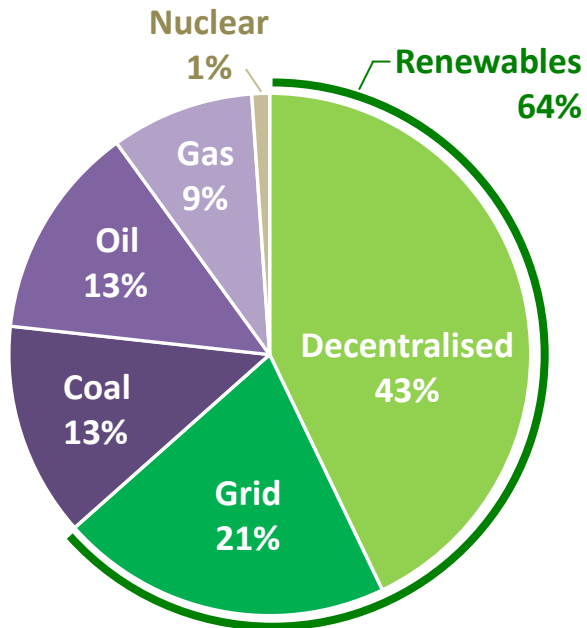


The world population without electricity access fell below 1 billion in 2017, led by India; but despite recent progress, efforts in sub-Saharan Africa need to accelerate

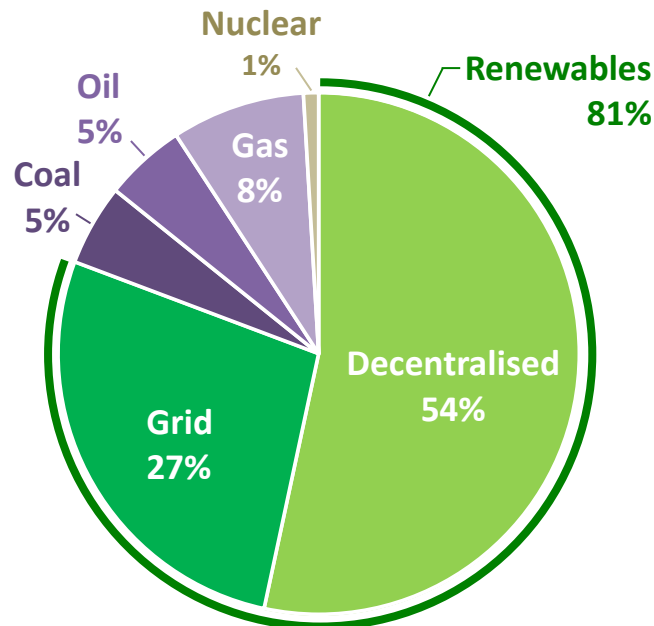
Renewables will be central for providing access

Population gaining access to electricity by source, 2018-2030

New Policies Scenario



Sustainable Development Scenario



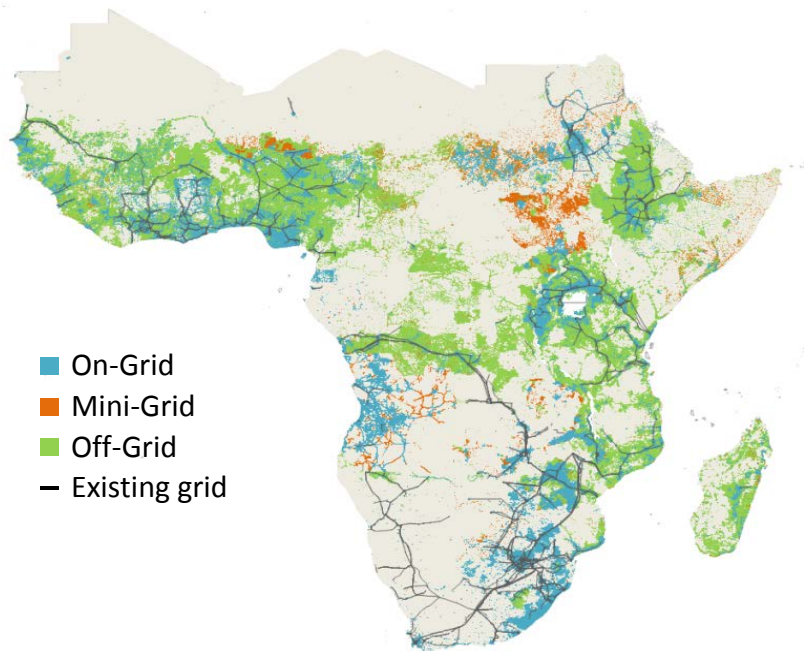
*Renewables will play a major role in delivering electricity access,
in particular via decentralised systems*

Achieving access for all by 2030



An IEA strategy to universal electricity access

Least-cost solution for delivering universal electricity access in sub-Saharan Africa by 2030

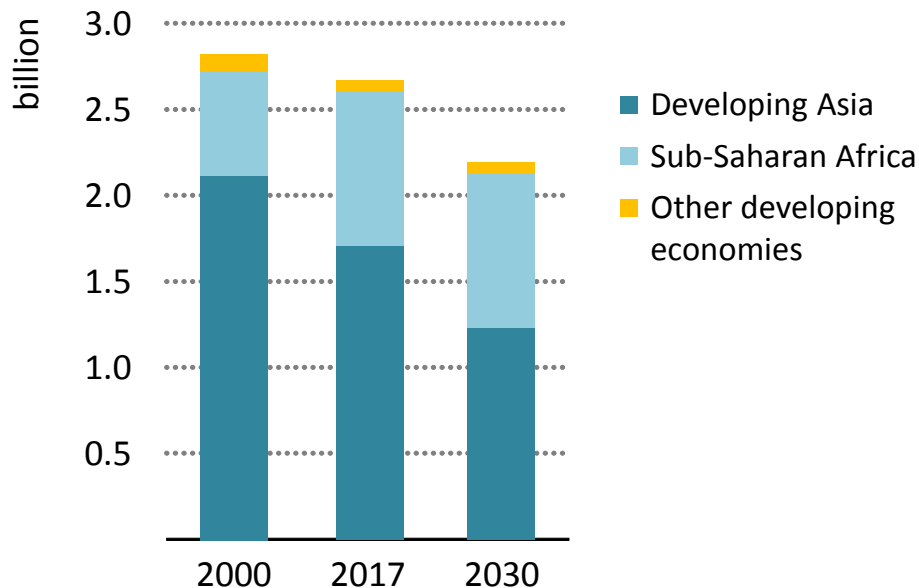


- **Grid extension** for 210 million additional people, with hydro accounting for most
- **Decentralised solutions**, mainly solar PV, for the remaining 370 million people in rural areas
- An **additional \$18 billion per year** is needed in electricity generation and grids

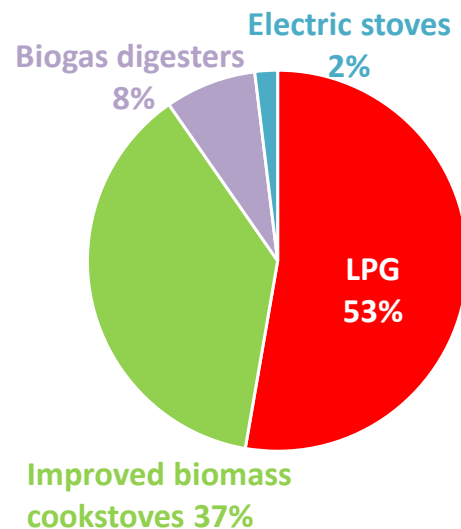
In 2030, 90% of those without access in sub-Saharan Africa are in rural areas; electricity for all needs an acceleration in the deployment of decentralised systems

Clean cooking for all: planned effort lags behind

Population without access to clean cooking



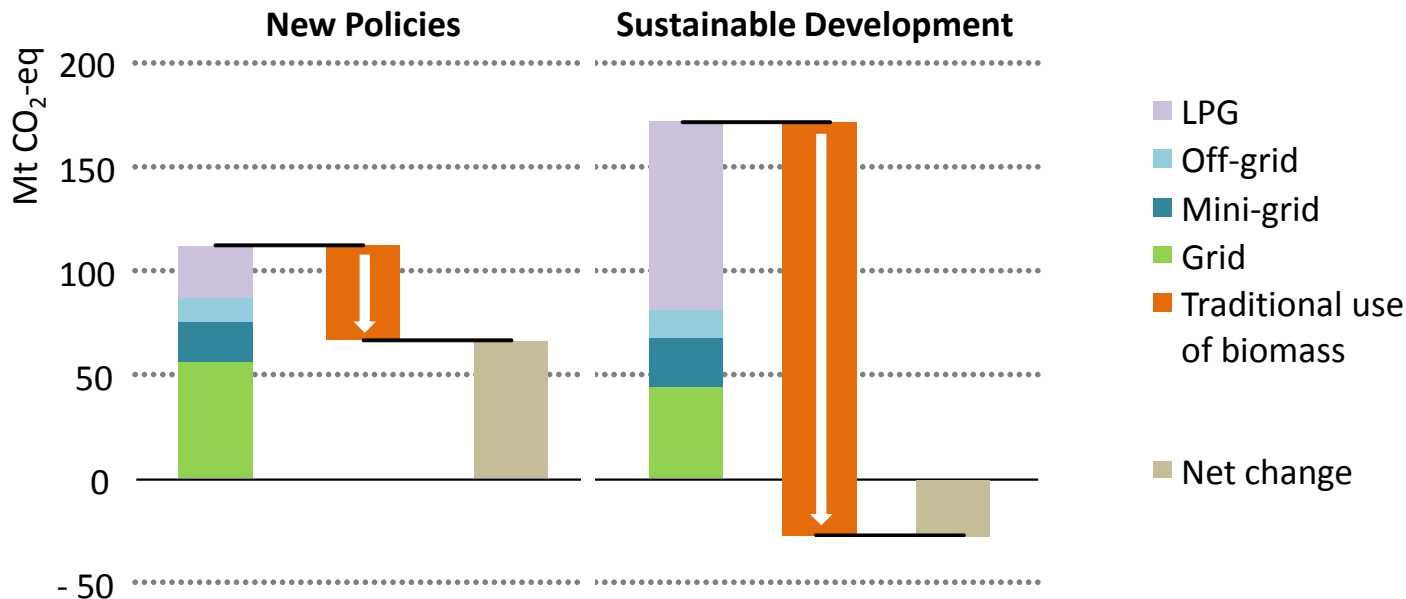
Clean fuels and technologies used in the Sustainable Development Scenario, 2030



Clean cooking access is best achieved through LPG and improved biomass cookstoves, and could significantly lower annual premature deaths related to household air pollution

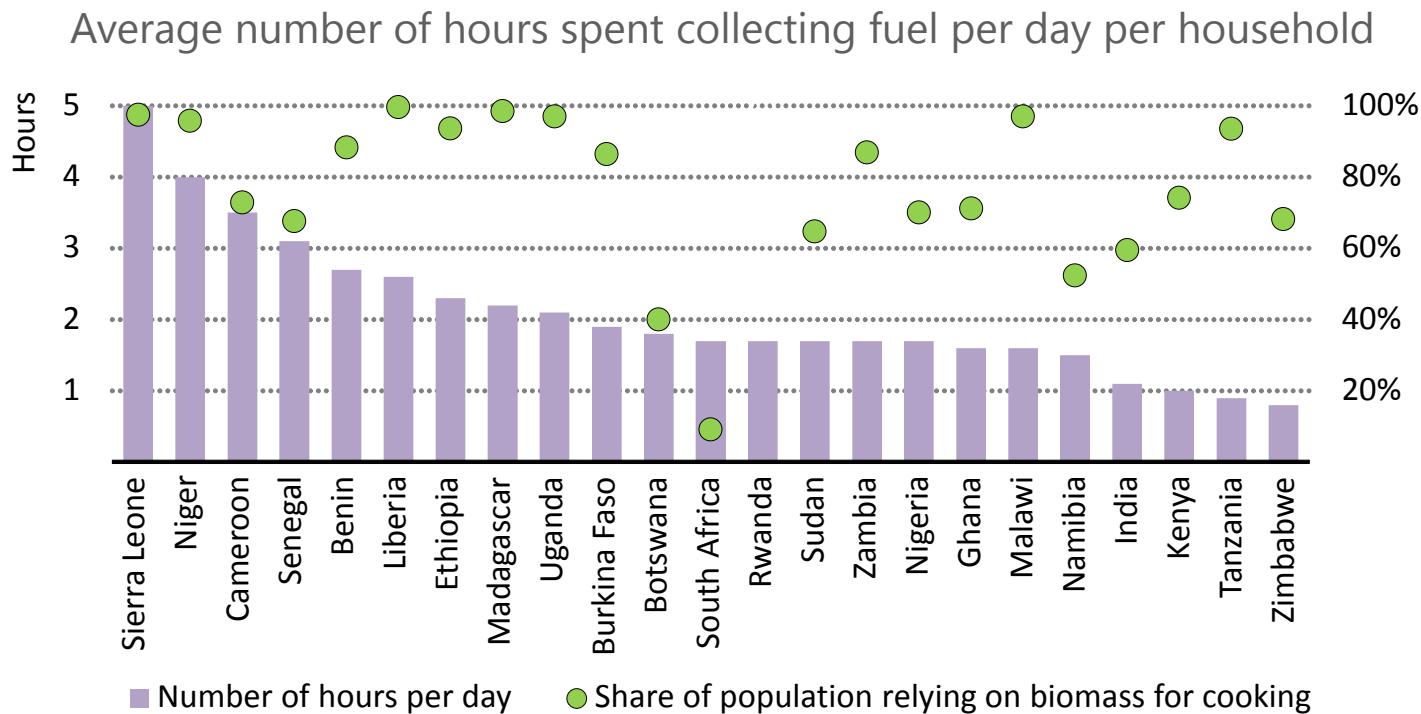
Synergies between energy access and GHG mitigation

Energy access-related GHG emissions in 2030 compared to today by scenario



Higher CO₂ emissions from increased fossil fuel consumption for access are more than offset by a reduction in other GHGs from avoided traditional use of biomass

Clean cooking relieves a major time burden for women



A high reliance on biomass for cooking means that women and children without clean cooking access spend an average of 1.4 hours per day collecting fuel

- Progress is being made towards the SDGs, but under current trends, goals on climate change, air pollution and universal access will not be met
- Our strategy for sustainable energy shows that concerted action to address climate change is fully compatible with global goals on universal access & air quality
- Policy efforts are key to the attainment of universal electricity access and should enable a wide-range of fit-for purpose solutions
- Universal access to clean cooking won't be achieved unless it is elevated on the political agenda
- The IEA will continue to lead in providing data, analysis and policy guidance to support governments & the international community to achieve SDGs

Explore the SDG 7 data behind WEO-2018



Download country-by-country database covering 140+ countries:

www.iea.org/sdg



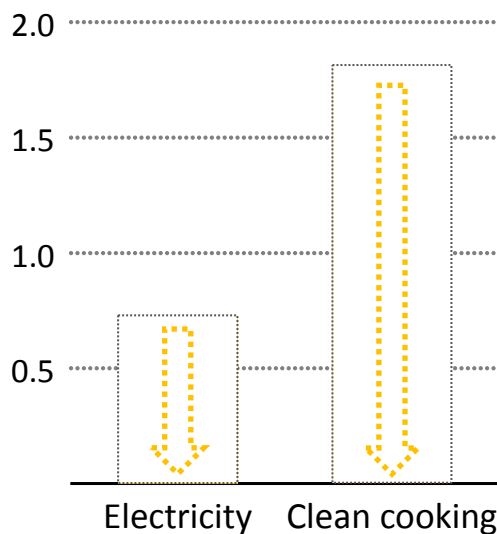
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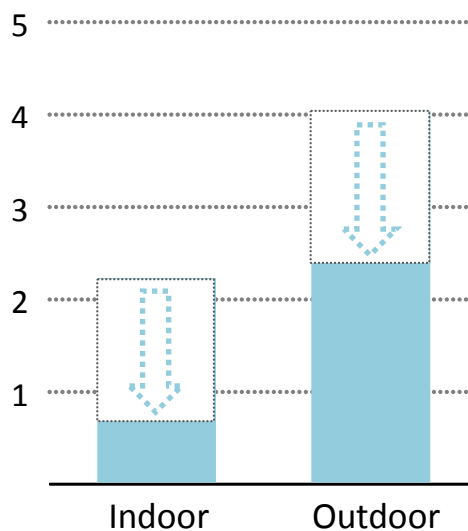
Benefits of the Sustainable Development Scenario

Outcomes of the Sustainable Development Scenario vs. New Policies Scenario, 2030

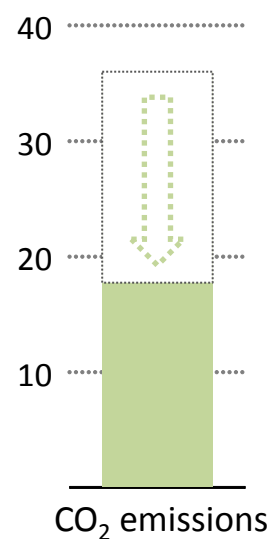
Population without access to modern energy (billion people)



Premature deaths related to air pollution (million)



Carbon dioxide emissions (Gt CO₂)



In an integrated approach, universal energy access can be reached while also achieving climate goals and reducing air pollutant emissions, at little extra cost