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Recent developments and new challenges in commodity markets: Energy

By

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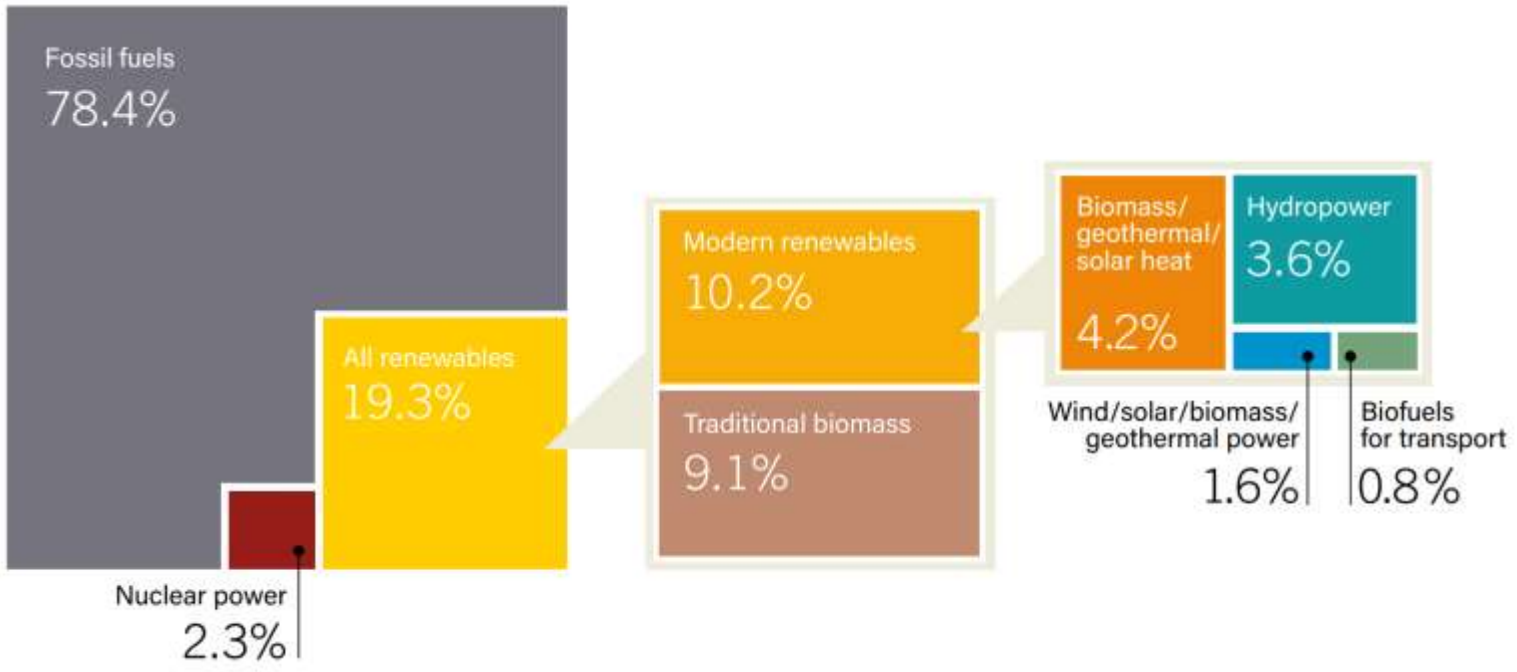
Rethinking Energy

Recent developments and new challenges in commodity markets: Energy

Geneva, 25 April 2018

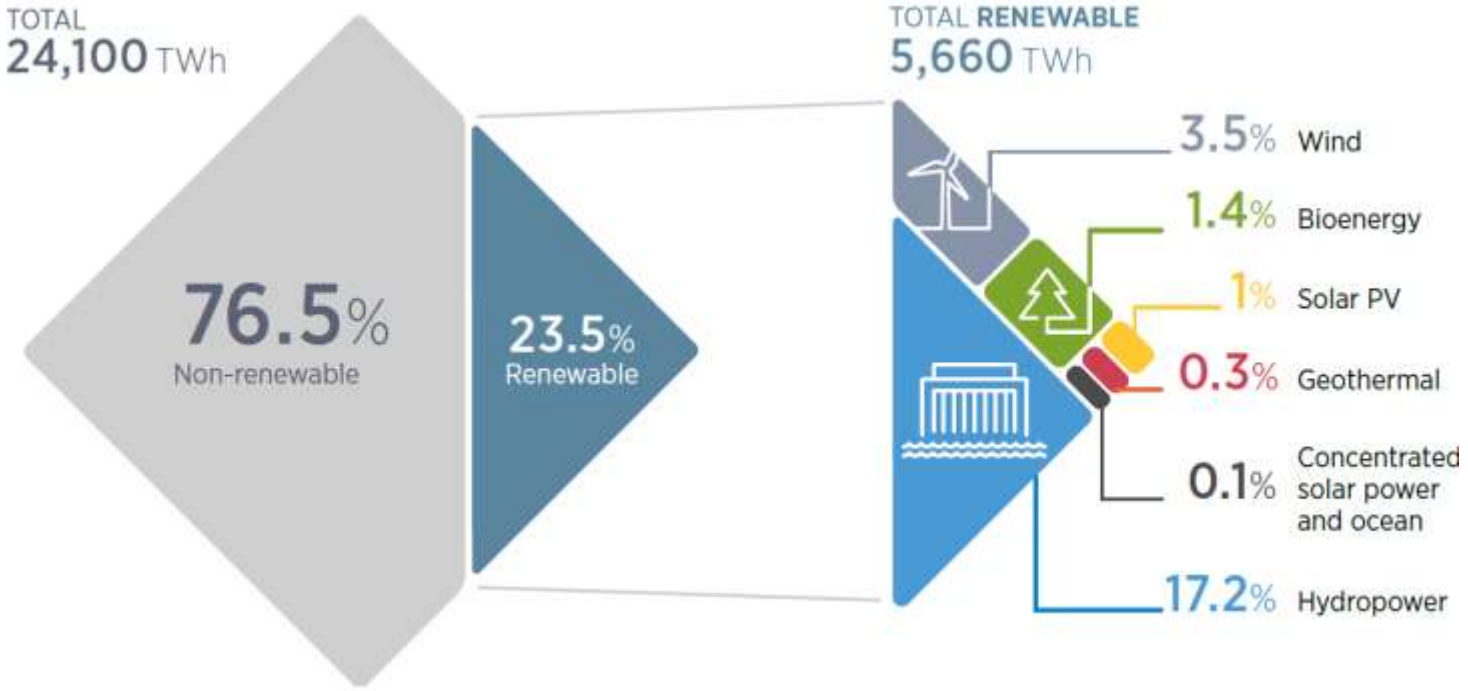
Total final energy consumption by source, 2015



Today, one out of every five units of energy delivered to consumers comes from renewable sources.

Source: REN21, Global Status Report

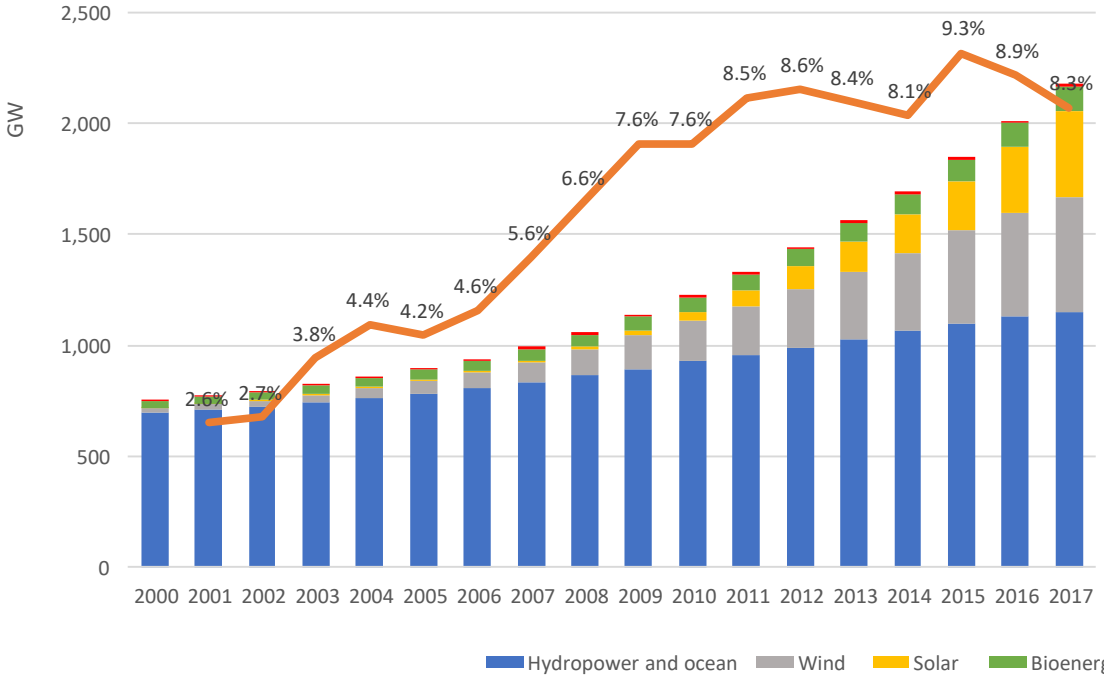
Global power generation by source, 2015



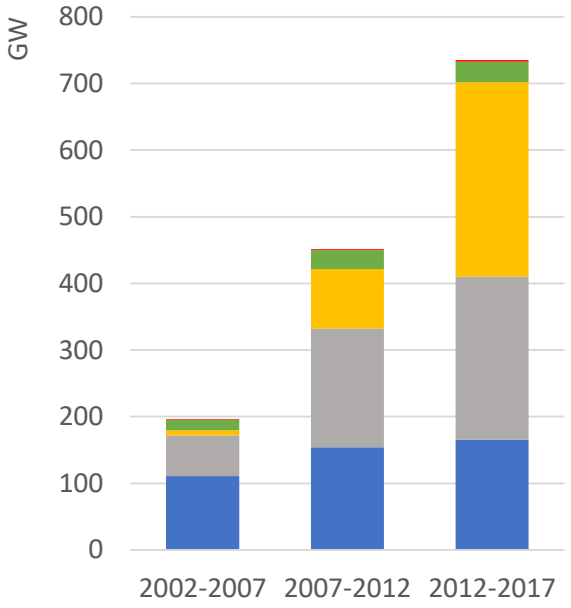
One quarter of the electricity in the world is produced from renewable sources; hydropower holds a historic predominance in the renewables sector.

Renewable energy deployment in the power sector

Renewable power capacity and annual growth rate, 2000-2017



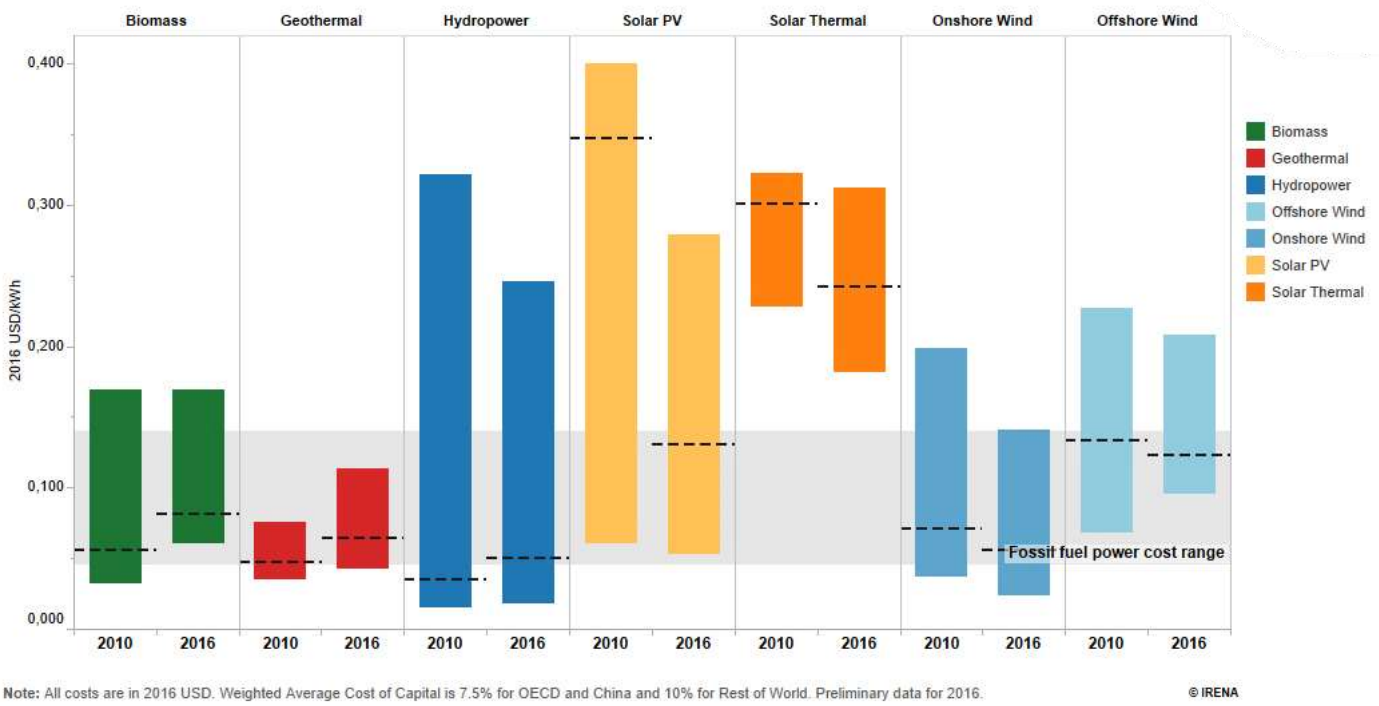
Net capacity additions over 5 year period, 2002-2017



Hydropower and ocean | Wind | Solar | Bioenergy | Geothermal | Growth

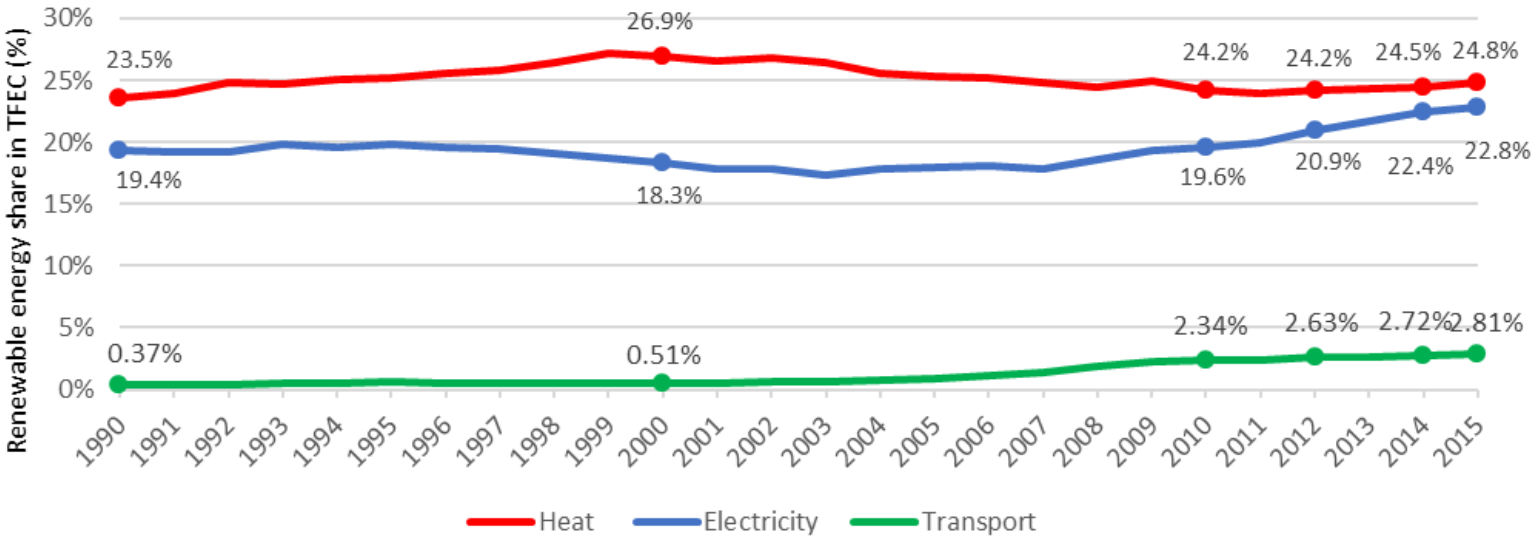
The global power sector transition moves forward at a fast pace, driven primarily by variable renewables.

Global levelised cost of electricity, 2010-2016



Renewables have reached parity with traditional sources of energy for many technologies.

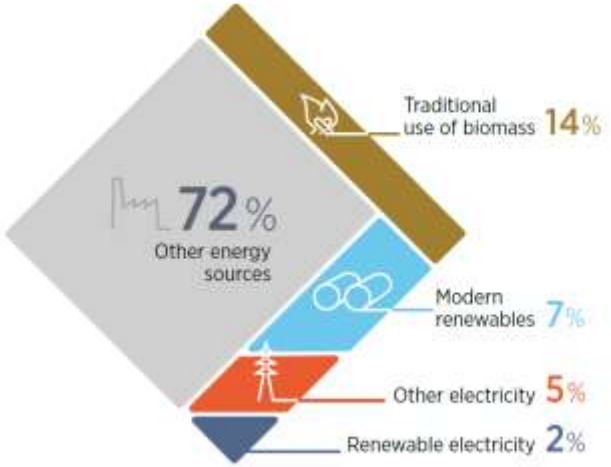
Renewable energy shares of total final energy consumption by sector, 1990-2015



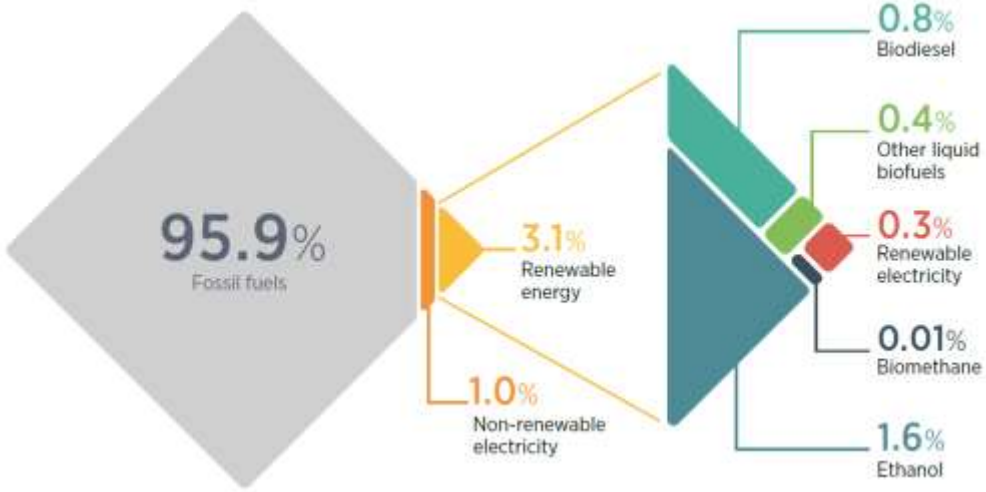
Progress in the electricity sector is not being matched in transport and heating – which together account for 80% of global energy consumption.

Total global energy consumption in the end-use sectors by fuel, 2015

Total global energy consumption for heat, 2015



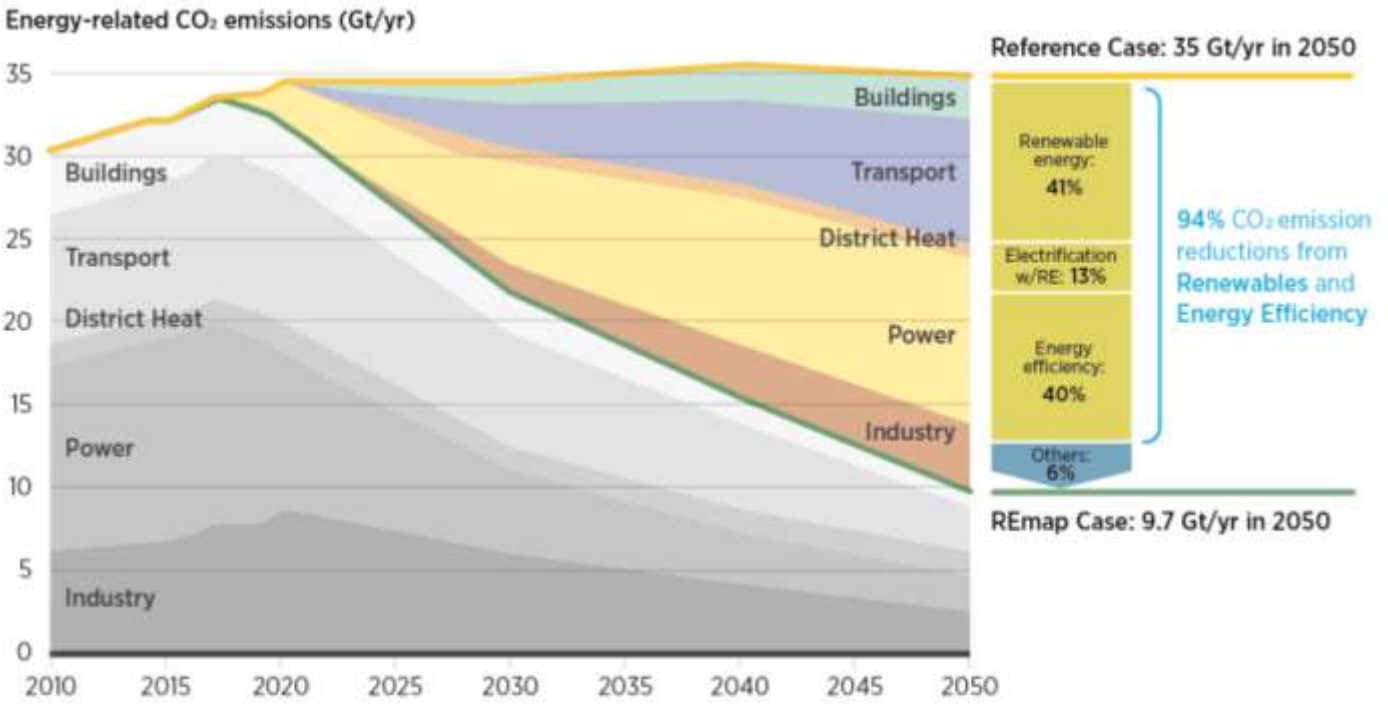
Transport energy use by transport fuel, 2015



Bioenergy and renewable electricity are the most relevant instrument for the decarbonization of the end use sectors; energy efficiency measures are however needed for achieve further progress.

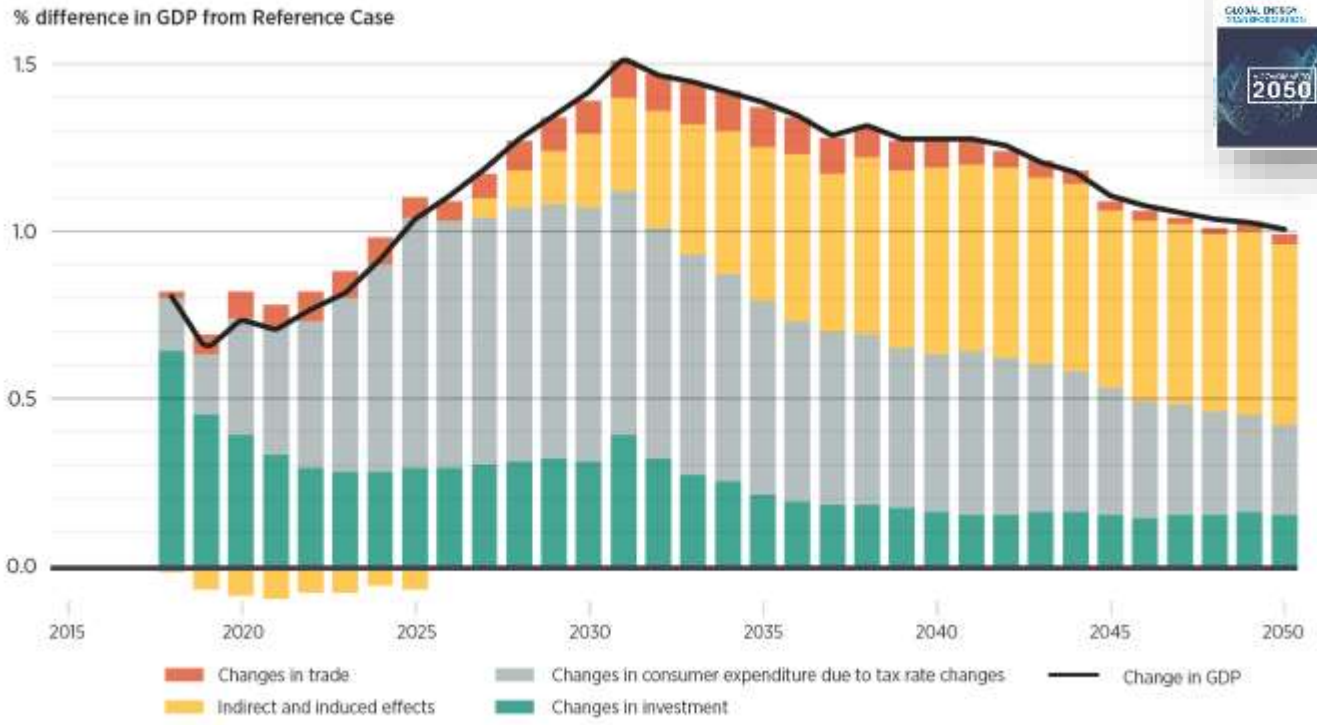
IRENA pathway to meet decarbonisation goal

Global energy related emissions, 2010-2050



Efforts need to be made in the end-use sectors (transport, heating, industry) to substantially reduce global CO2 emissions and reaching the 2° target. Renewables and energy efficiency provide over 90% of the reduction required

Global economic growth
(measured in GDP)



Investment
+0.31% compared to the Reference case in 2030
+0.15% compared to the Reference case in 2050

Trade
+0.10% compared to the Reference case in 2030
+0.03% compared to the Reference case in 2050

Tax rate
+0.76% compared to the Reference case in 2030
+0.27% compared to the Reference case in 2050

Indirect and induced
+0.22% compared to the Reference case in 2030
+0.54% compared to the Reference case in 2050

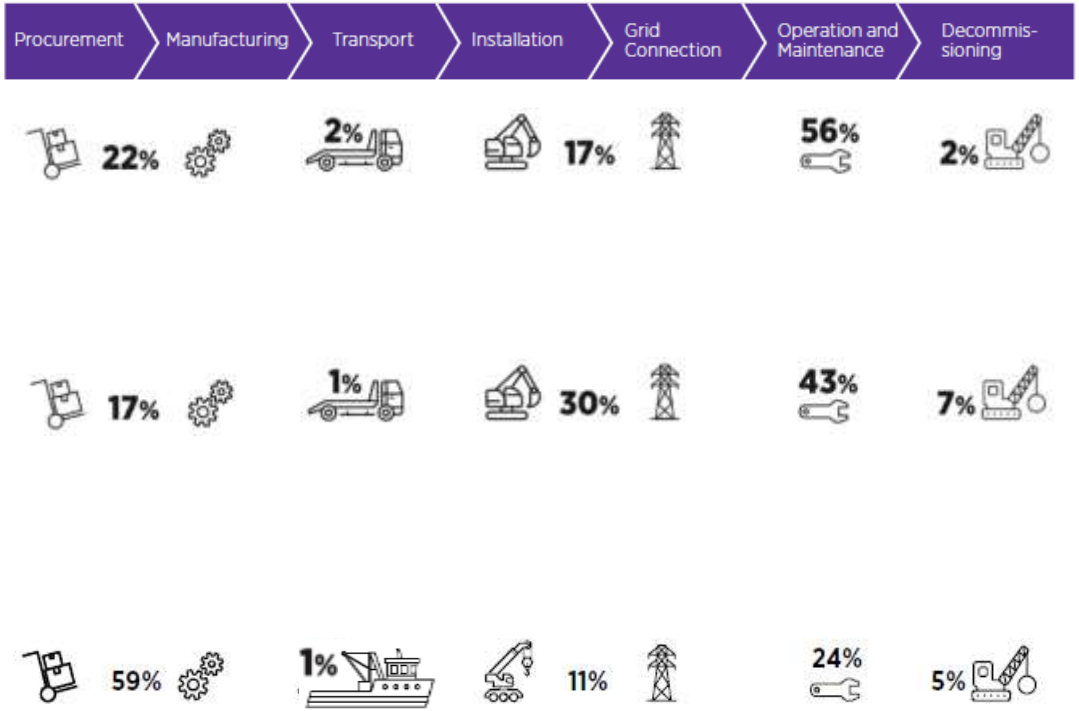
The energy transition is estimated to increase the global GDP by 1.0% in 2050, compared to the reference case. This is primarily driven by indirect and induced effects post 2035.

Solar PV and wind value chains

50 MW solar PV:
229 055 person-days

50 MW onshore wind:
144 420 person-days

500 MW offshore wind:
2.1 million person-days



Values beyond energy services

Renewables offer an unprecedented opportunity to grow the economy, create jobs & safeguard the future. Articulating the link between SDG 7 and the other SDGs is essential to maximise development co-benefits.

Conclusions and recommendations

- **Increase the ambition of the transition, which at the same time would provide climate alignment.**
- **Socio-economic structure should facilitate and unlock social participatory role for inclusive growth.**
- **Economic growth is found to be higher in economies with deep domestic supply chains.**
- **The transition creates net additional jobs, but policies should be in place to support necessary transfer of skills, between both energy and non-energy sector.**

The social, economic and environmental benefits of the energy transition can only be fully reaped through the introduction of fair and just transition considerations, and its associated socio-economic mechanism.

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