



TURANOR PlanetSolar

CANDINO

W8W

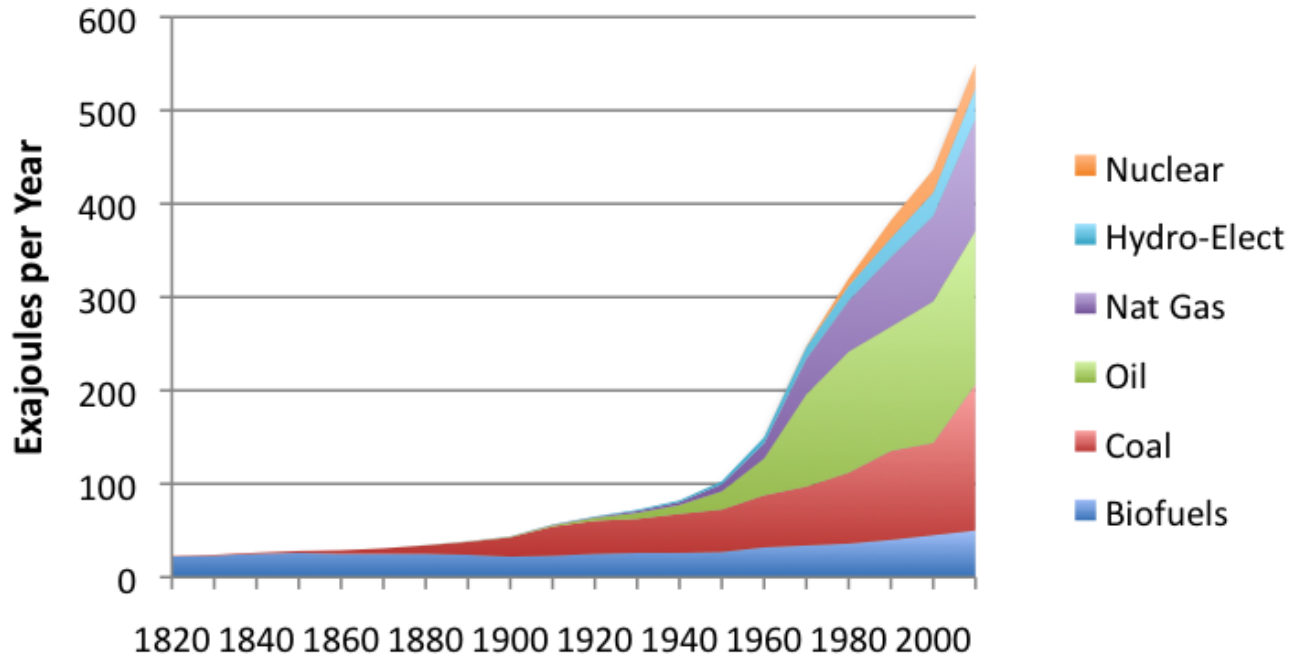
WALLINGER WERKSTÄTTEN

MIPICOLA

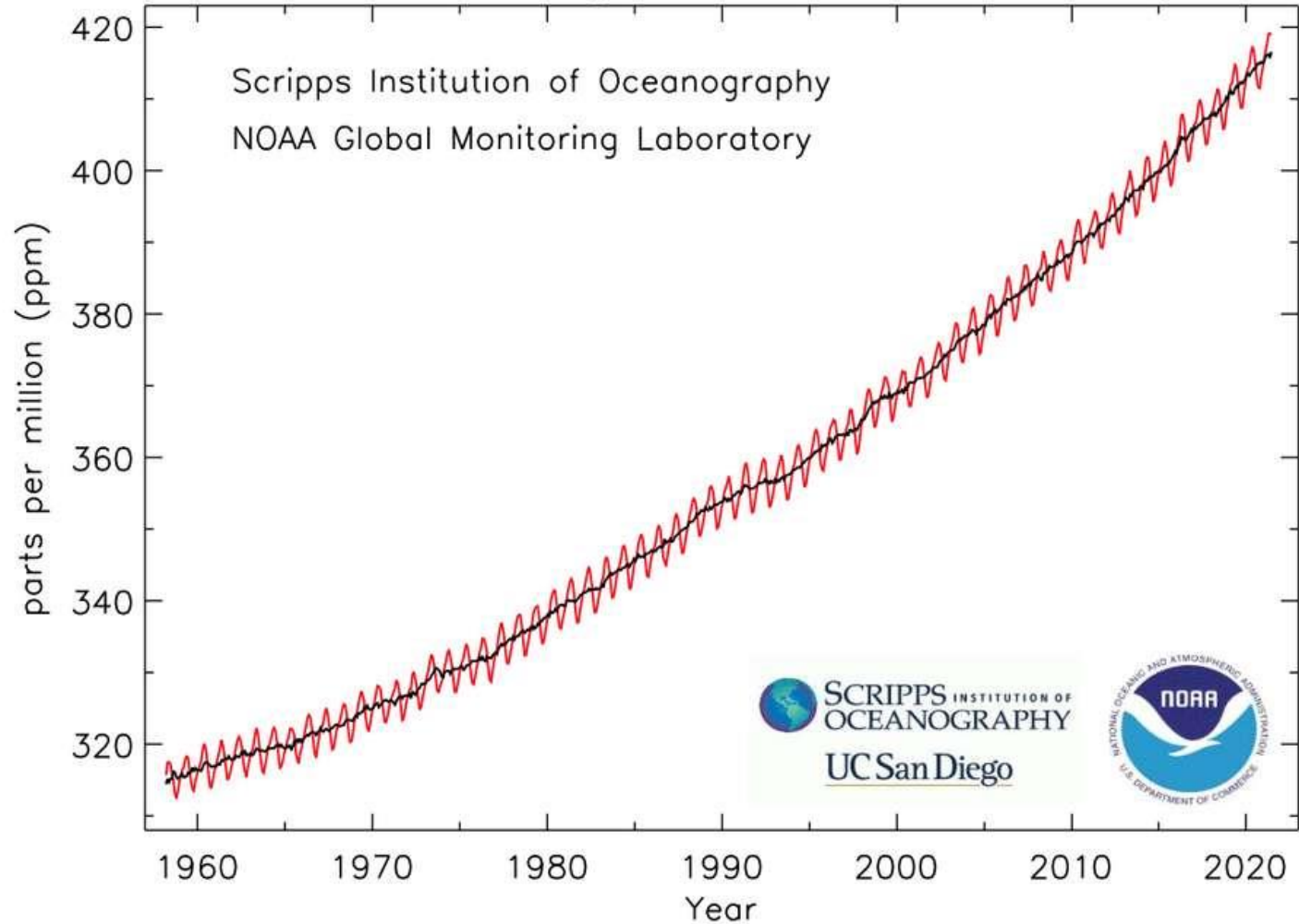




World Energy Consumption



Atmospheric CO₂ at Mauna Loa Observatory



SUSTAINABLE ENERGY SOURCES

Solar

1.2×10^5 TW at Earth surface
600 TW practical

energy gap
~ 14 TW by 2050
~ 33 TW by 2100

Wind

2-4 TW extractable

Biomass

5-7 TW gross
using all cultivable
land that is not used
for growing food

Tide/Ocean Currents

2 TW gross



Hydroelectric

4.6 TW gross
1.6 TW technically feasible
0.9 TW economically feasible
0.6 TW installed capacity

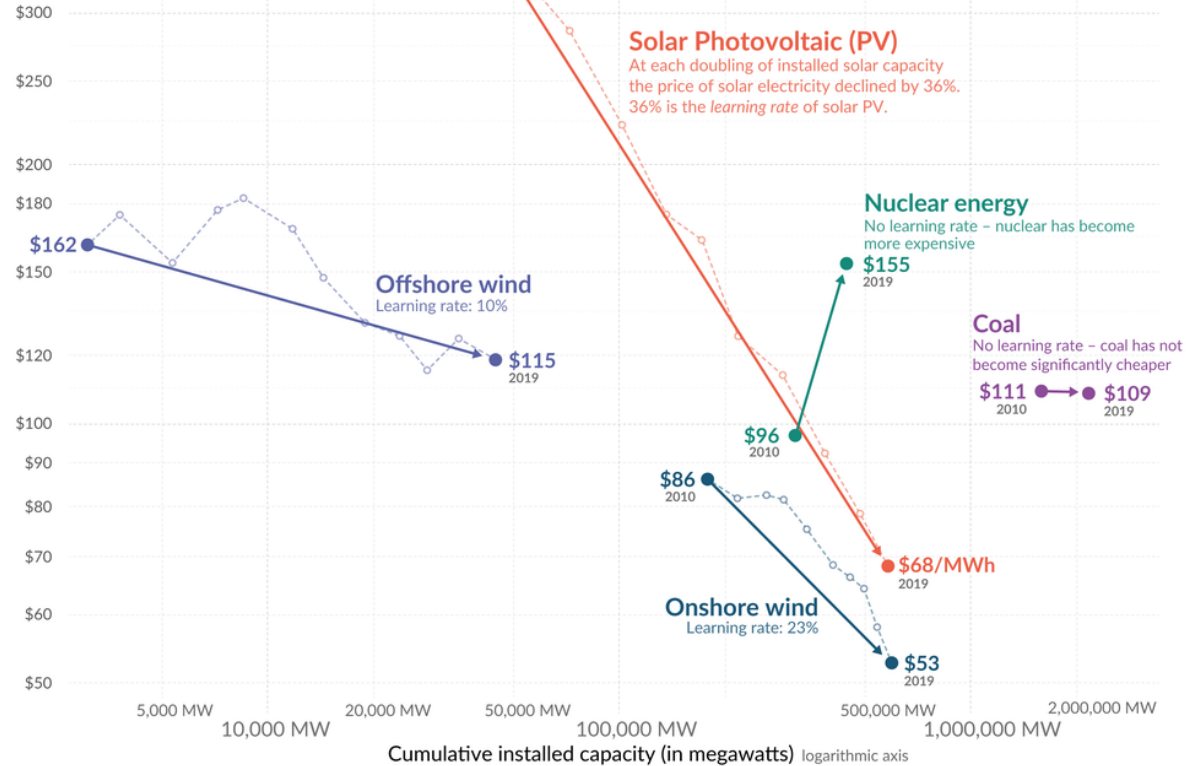
Geothermal

12 TW gross over land
small fraction recoverable

Electricity from renewables became cheaper as we increased capacity – electricity from nuclear and coal did not

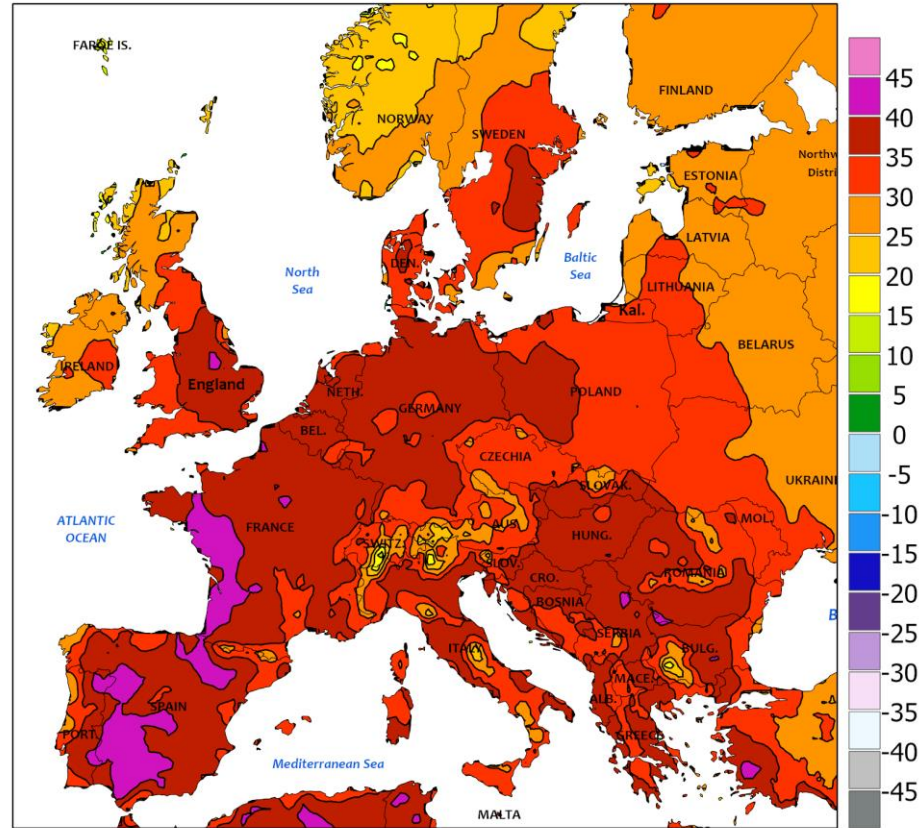
Price per megawatt hour of electricity

This is the global weighted-average of the levelized costs of energy (LCOE), without subsidies logarithmic axis and adjusted for inflation



Source: IRENA 2020 for all data on renewable sources; Lazard for the price of electricity from nuclear and coal – IAEA for nuclear capacity and Global Energy Monitor for coal capacity. Gas is not shown because the price between gas peaker and combined cycles differs significantly, and global data on the capacity of each of these sources is not available. The price of electricity from gas has fallen over this decade, but over the longer run it is not following a learning curve.

EUROPE
Extreme Maximum Temperature (C)
July 17 - 23, 2022

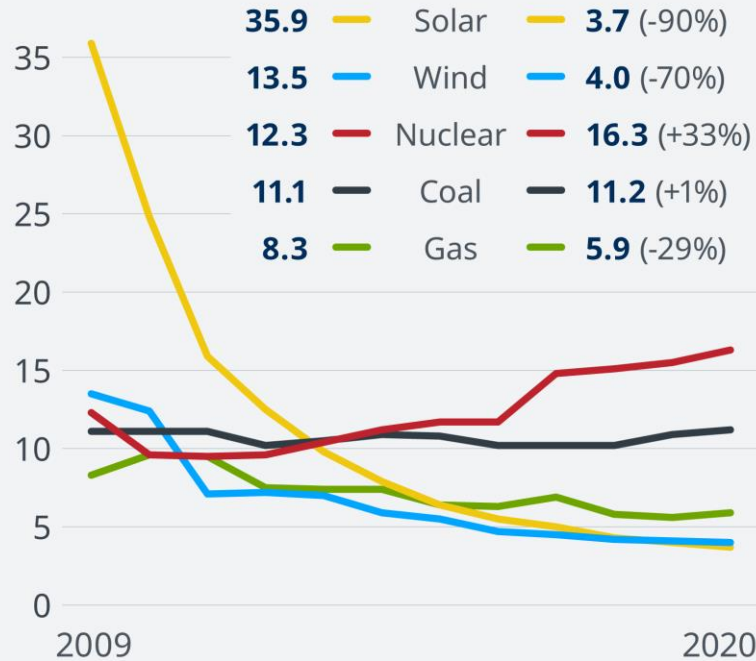


CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data



Worldwide energy prices over the last decade

Generation costs in cents (US\$)

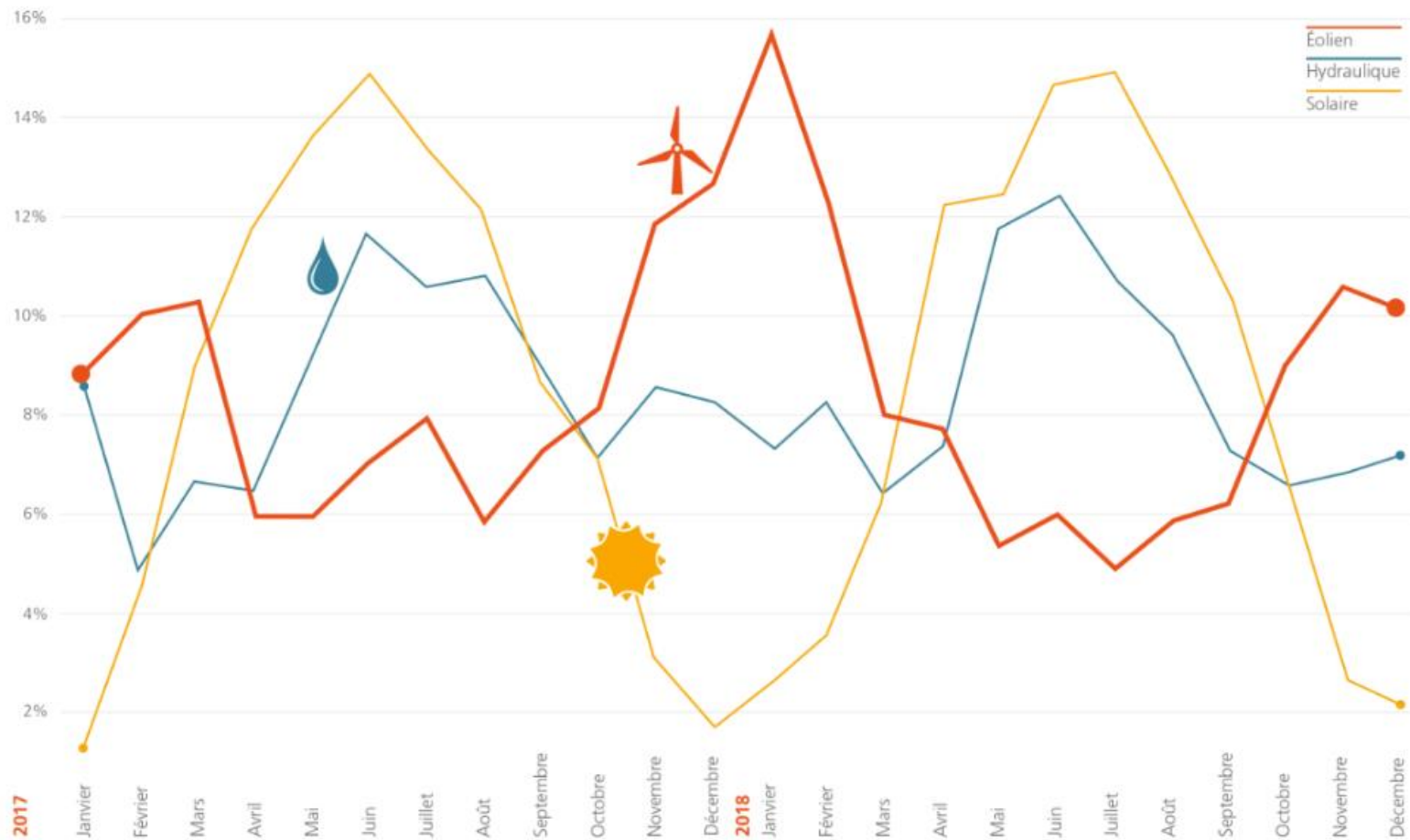






Profils de production d'électricité pour l'énergie hydraulique, éolienne et solaire

Suisse 2017-2018 (% de leur production annuelle)









HB-SXA

ACTIVE SOLAR

SOLARSTRATOC
TO THE EDGE
Pischer

bordier 1844
LONGINES
Bitcoin Suisse

Experimental

HB RAPHAEL DOMJAN





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