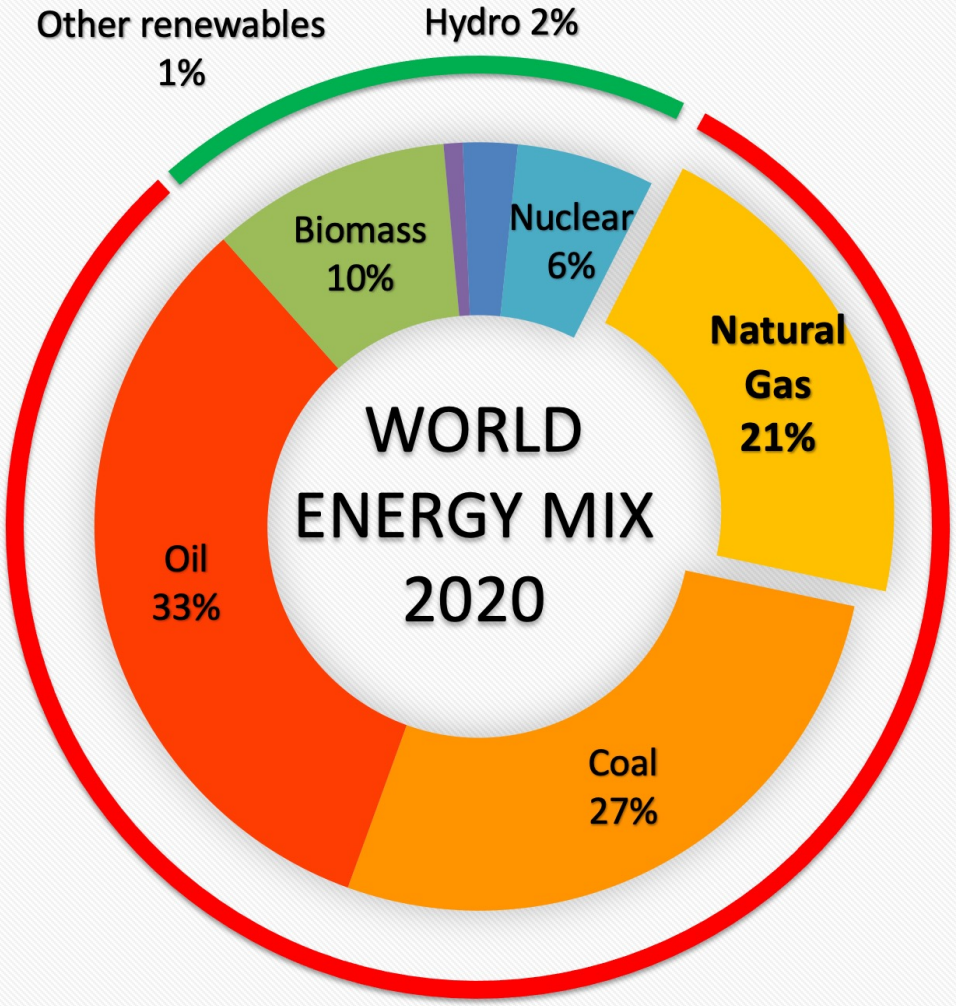
Energia Renovável do Oceano: Introdução

2023

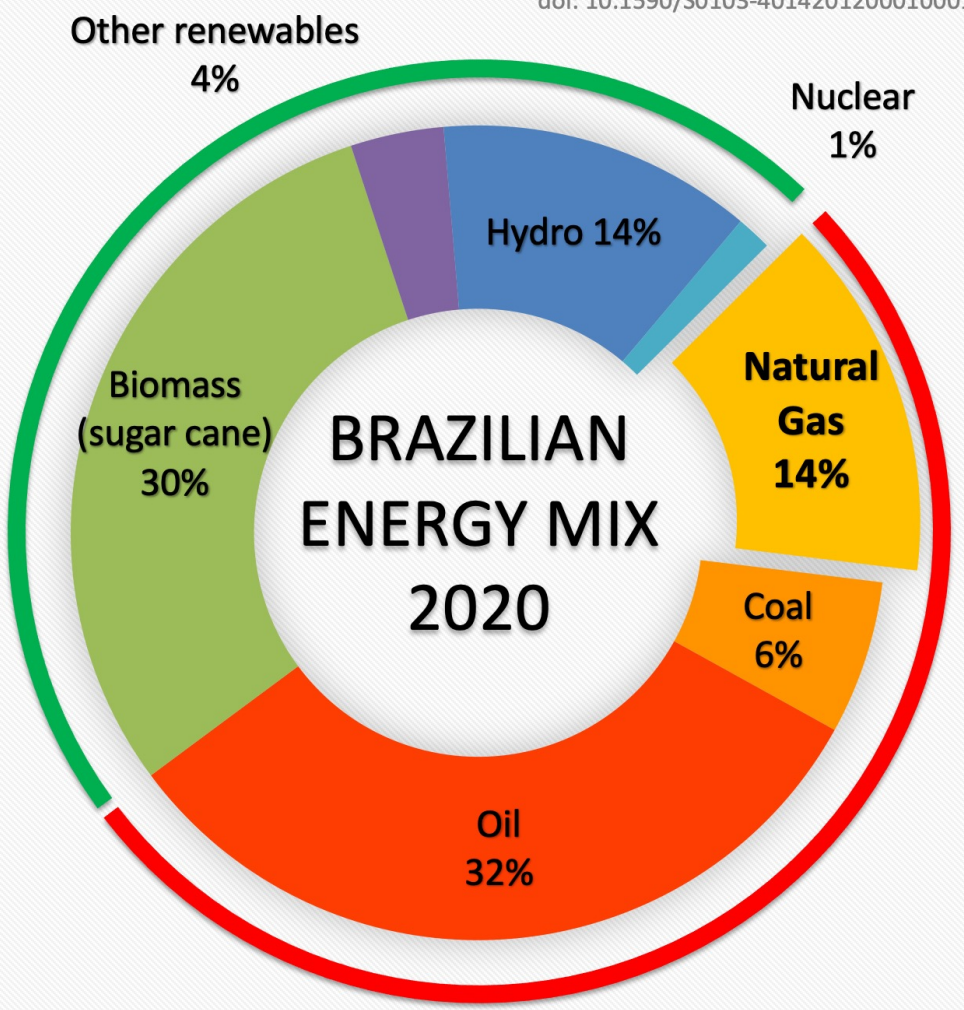
PNV USP

PNV3523 – Energia renovável do Oceano

Matriz Energética

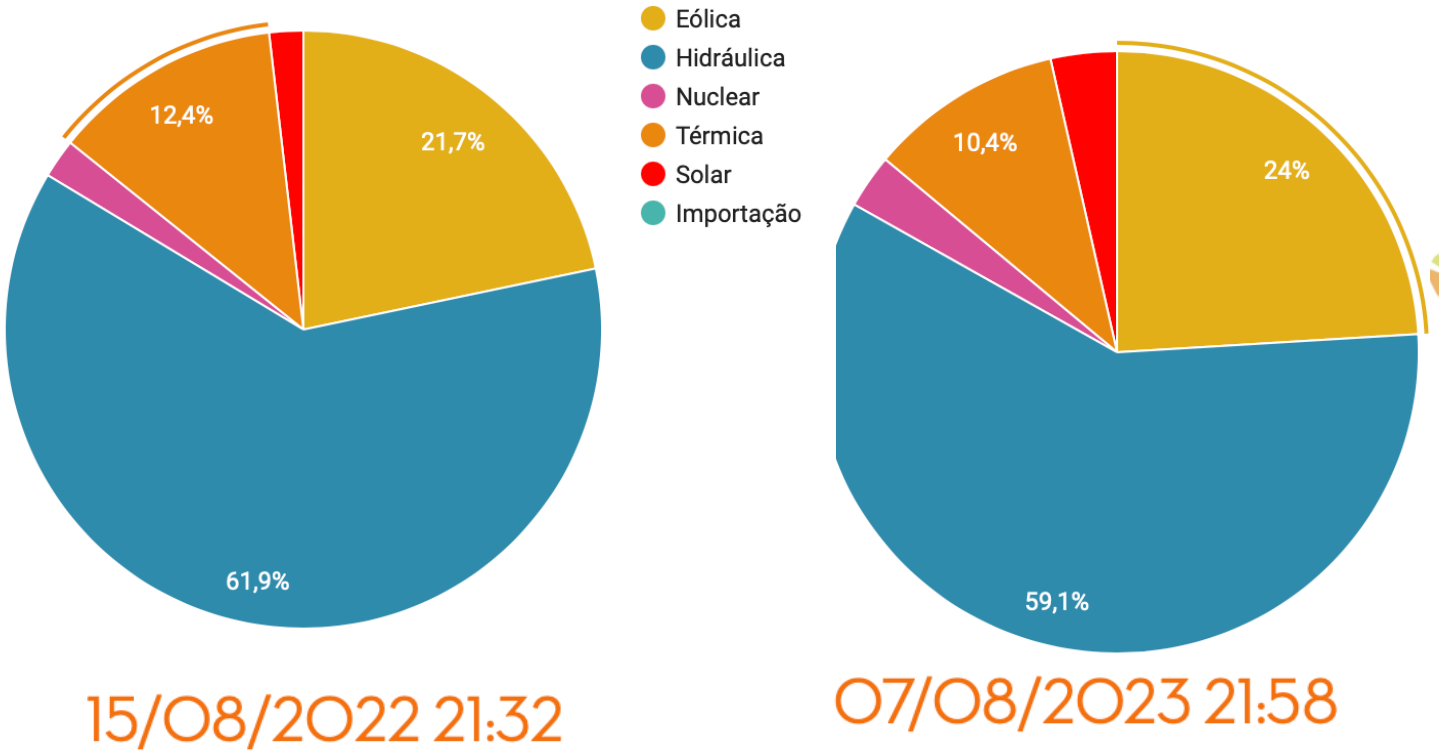


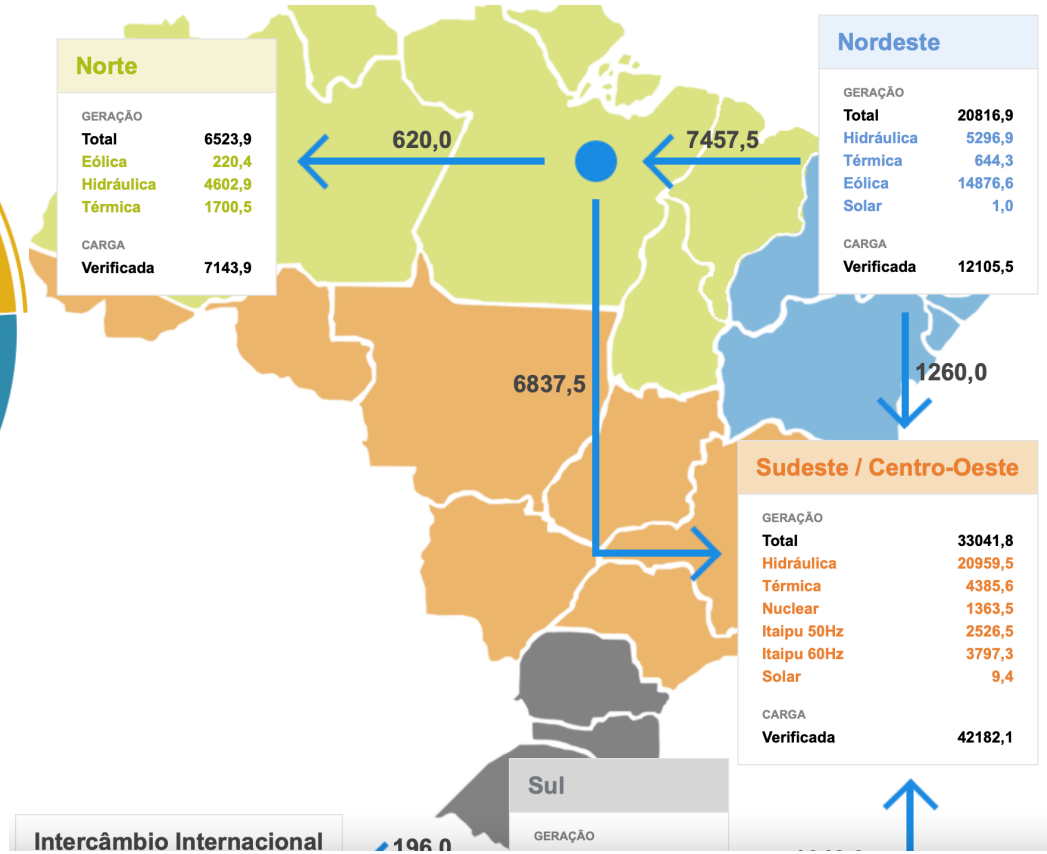
OECD/IEA Statistics (2009)



Talmasquim (2012)
doi: 10.1590/S0103-40142012000100017

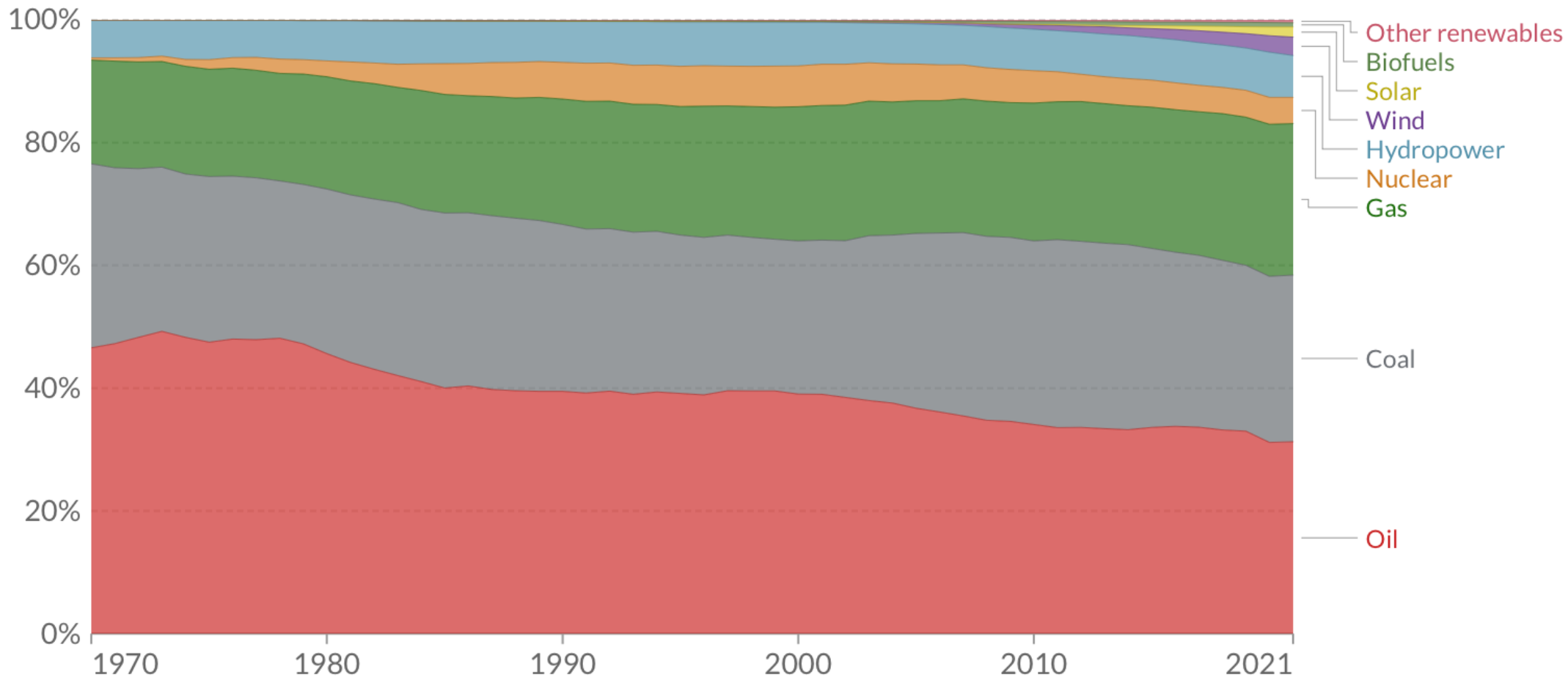
Sistema Interligado Nacional





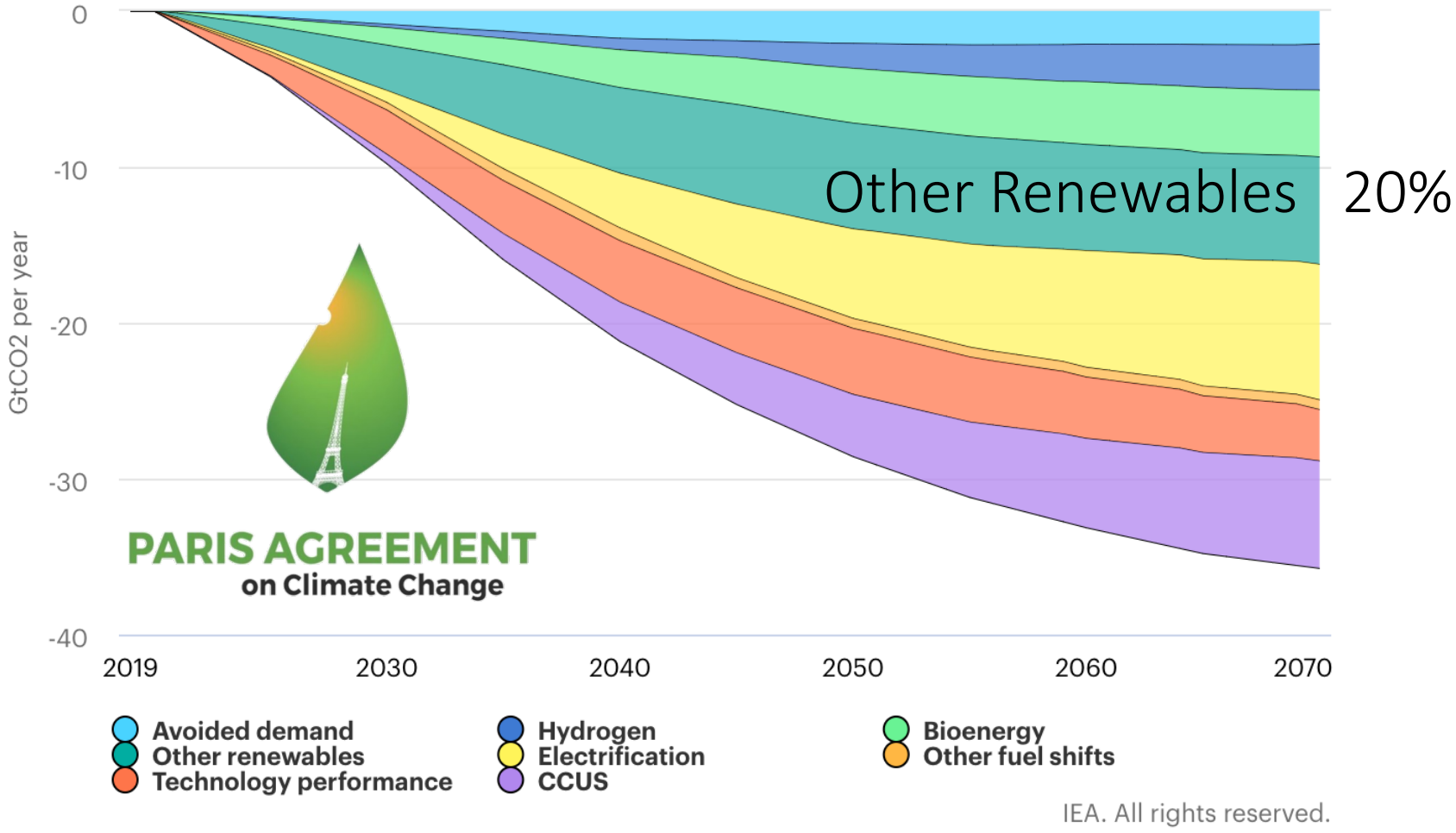
http://www.ons.org.br/paginas/energia-agora/carga-e-geracao

Evolução da Matriz Energética



Source: BP Statistical Review of World Energy
Note: 'Other renewables' includes geothermal, biomass and waste energy.

Redução Relativa das Emissões de CO_2 em um Cenário de Desenvolvimento Sustentável



IEA (2021), *CCUS around the world*, IEA, Paris www.iea.org/reports/ccus-around-the-world

Contribuição das Energias Renováveis à Matriz Energética (IPCC-2012)

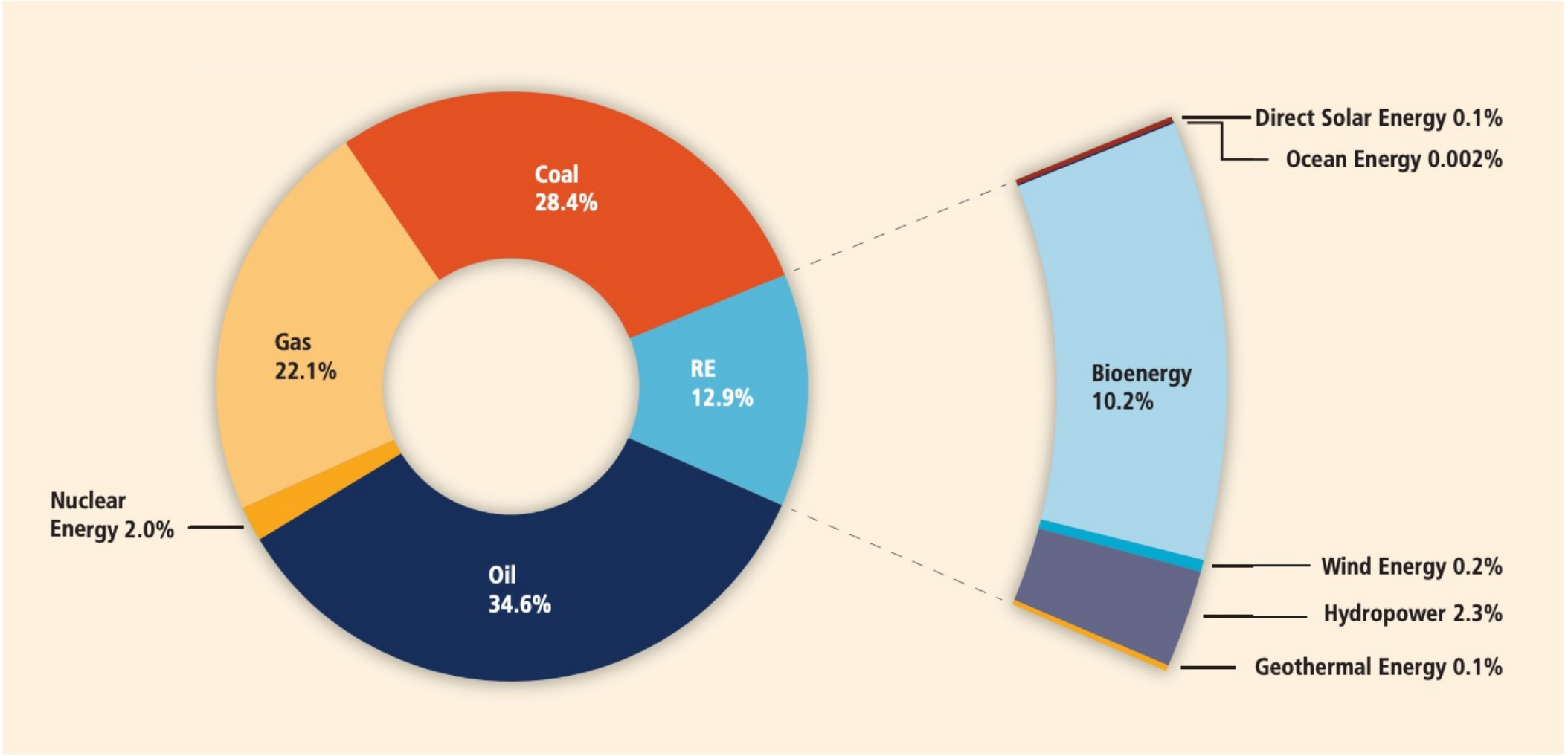
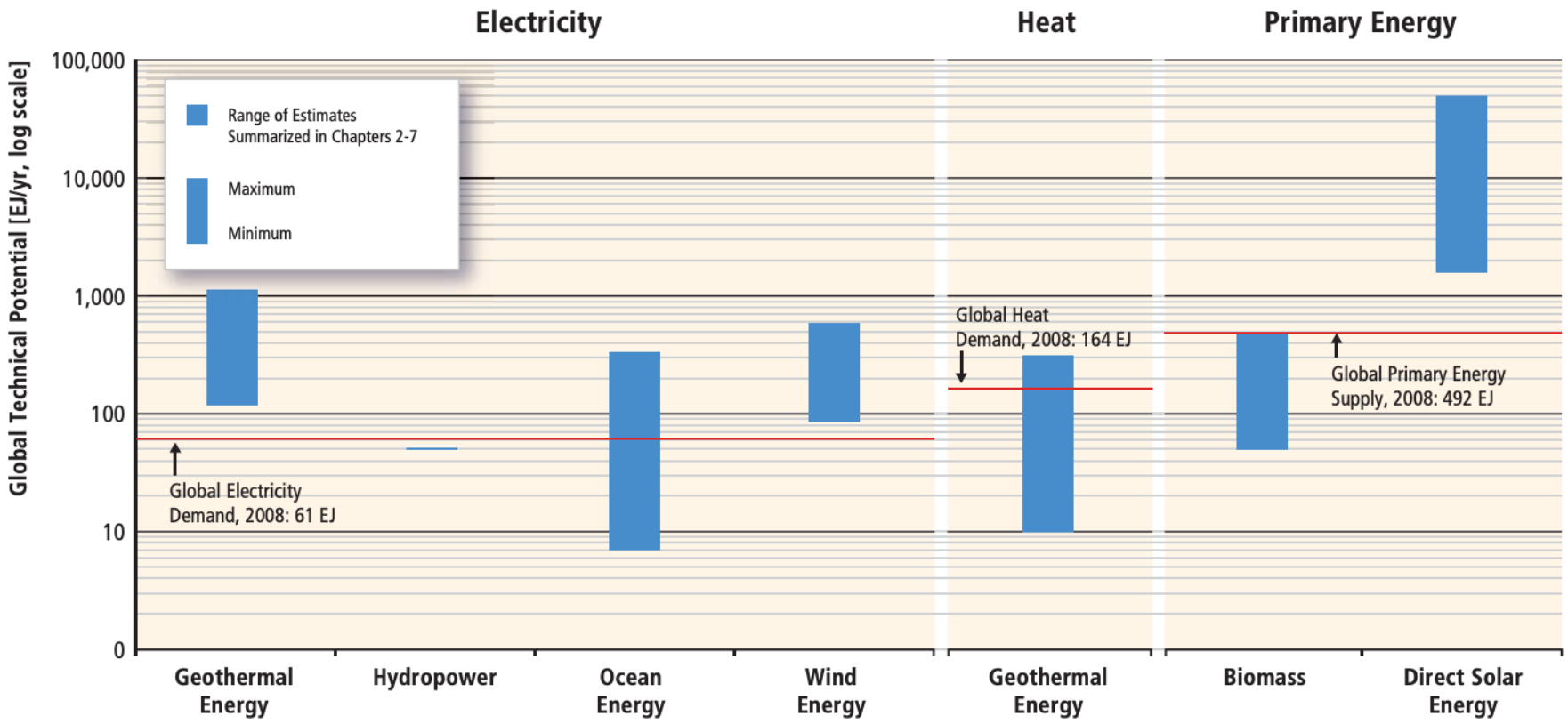


Figure SPM.2 | Shares of energy sources in total global primary energy supply in 2008 (492 EJ). Modern biomass contributes 38% of the total biomass share. [Figure 1.10, 1.1.5]

Potencial Ténico Global (IPCC - 2012)

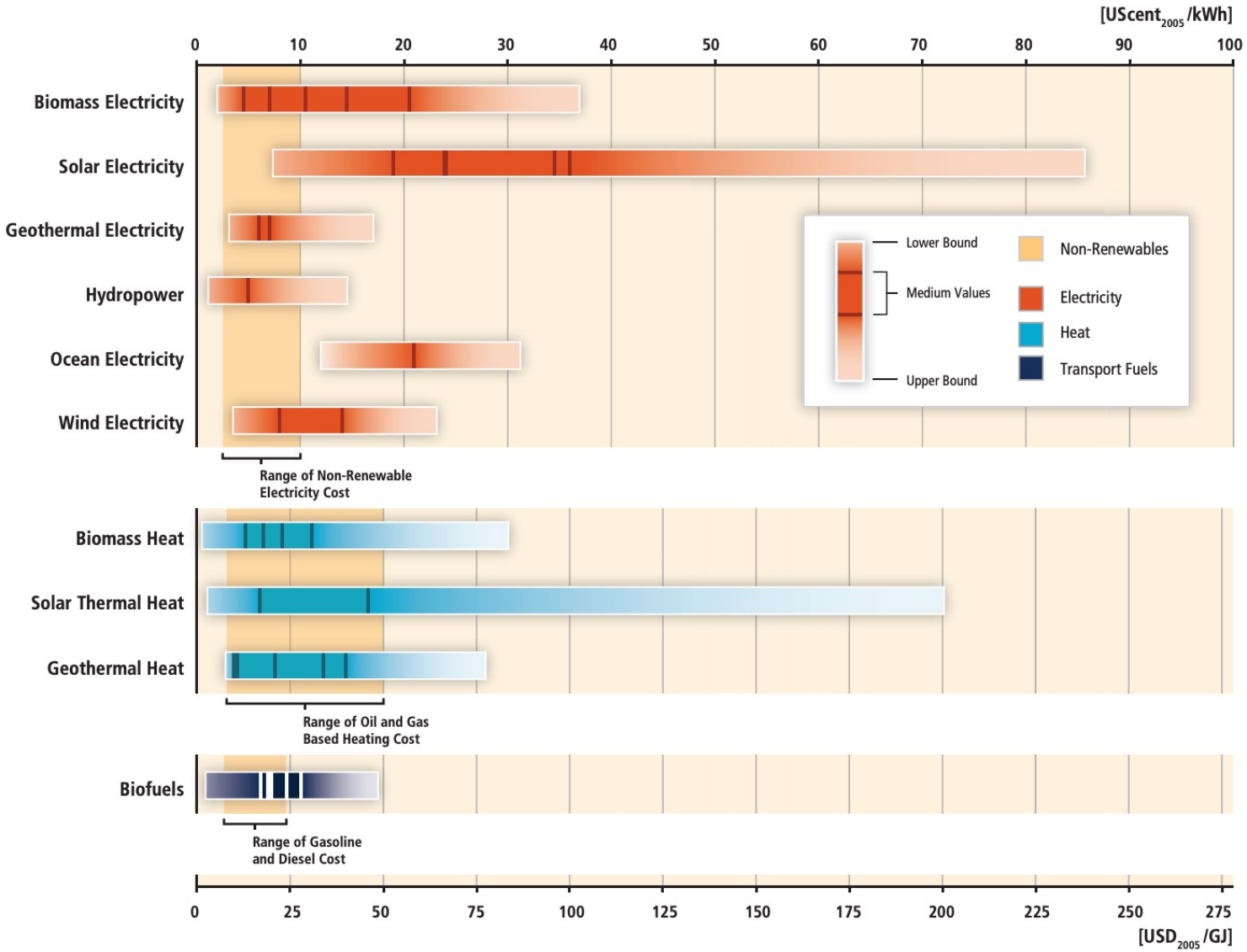


Range of Estimates of Global Technical Potentials

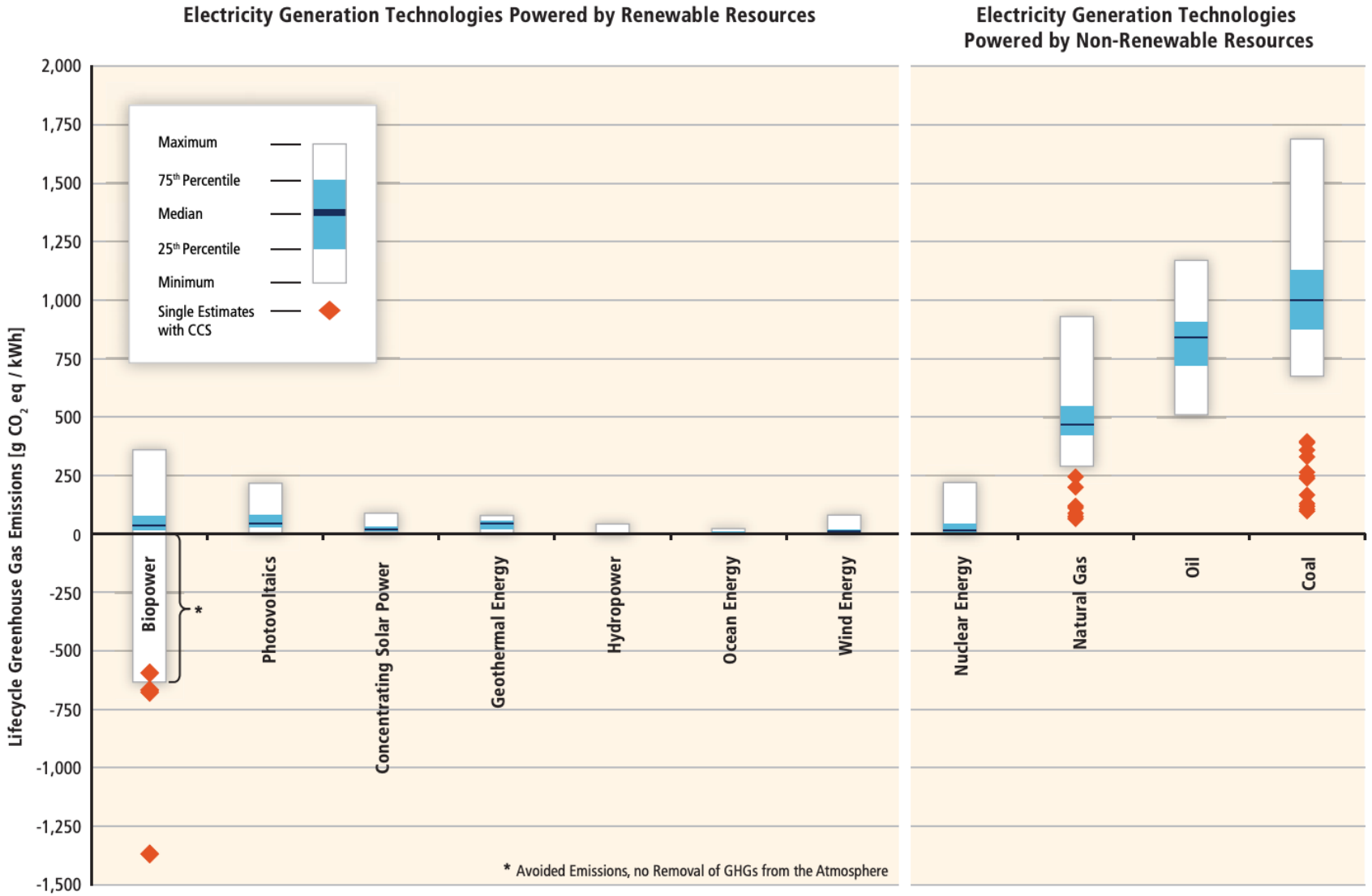
Max (in EJ/yr)	1109	52	331	580	312	500	49837
Min (in EJ/yr)	118	50	7	85	10	50	1575

Figure SPM.4 | Ranges of global technical potentials of RE sources derived from studies presented in Chapters 2 through 7. Biomass and solar are shown as primary energy due to their multiple uses; note that the figure is presented in logarithmic scale due to the wide range of assessed data. [Figure 1.17, 1.2.3]

Levelized Cost of Energy (LCOE)



Fontes de Energia e Geração Elétrica



Energia Renovável do Oceano

Wave

Tidal range

Tidal current

Ocean current

Thermal gradient

Salinity gradient

Wind

Solar

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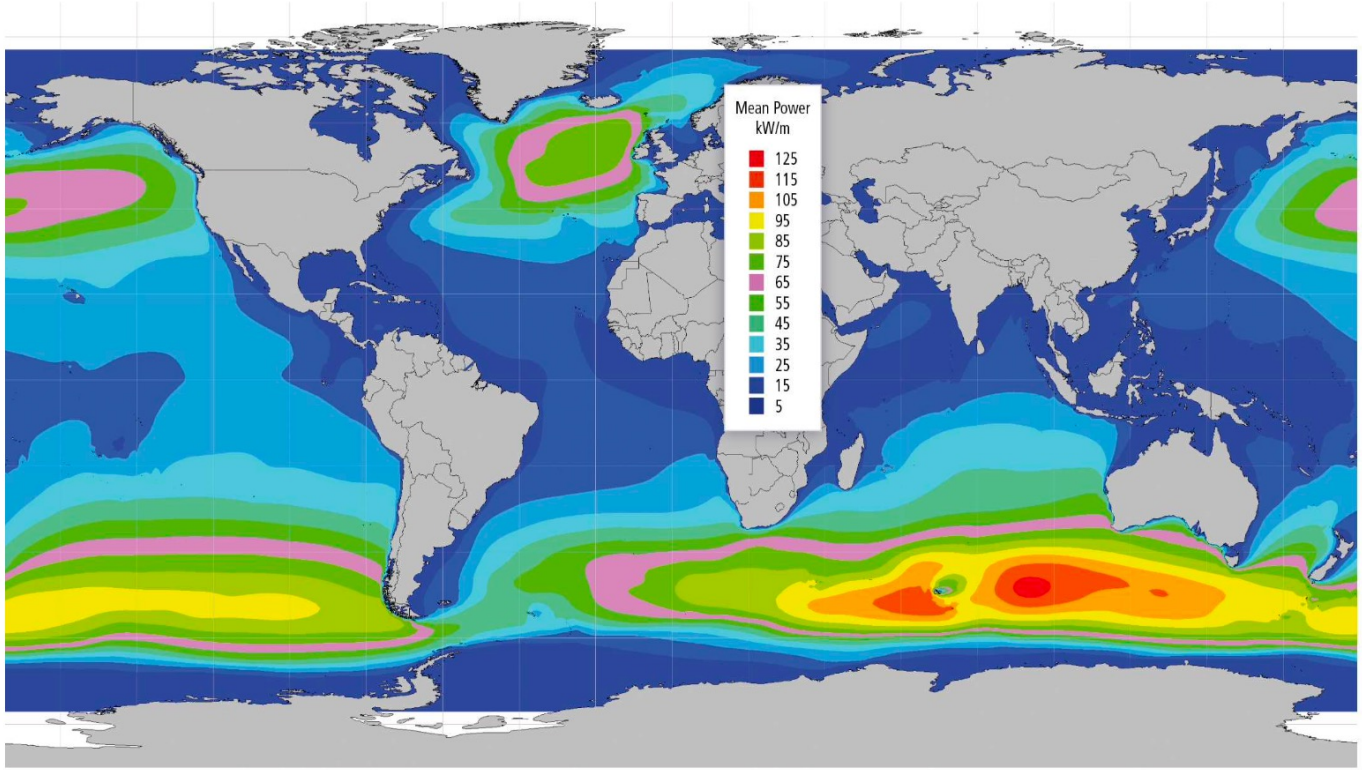
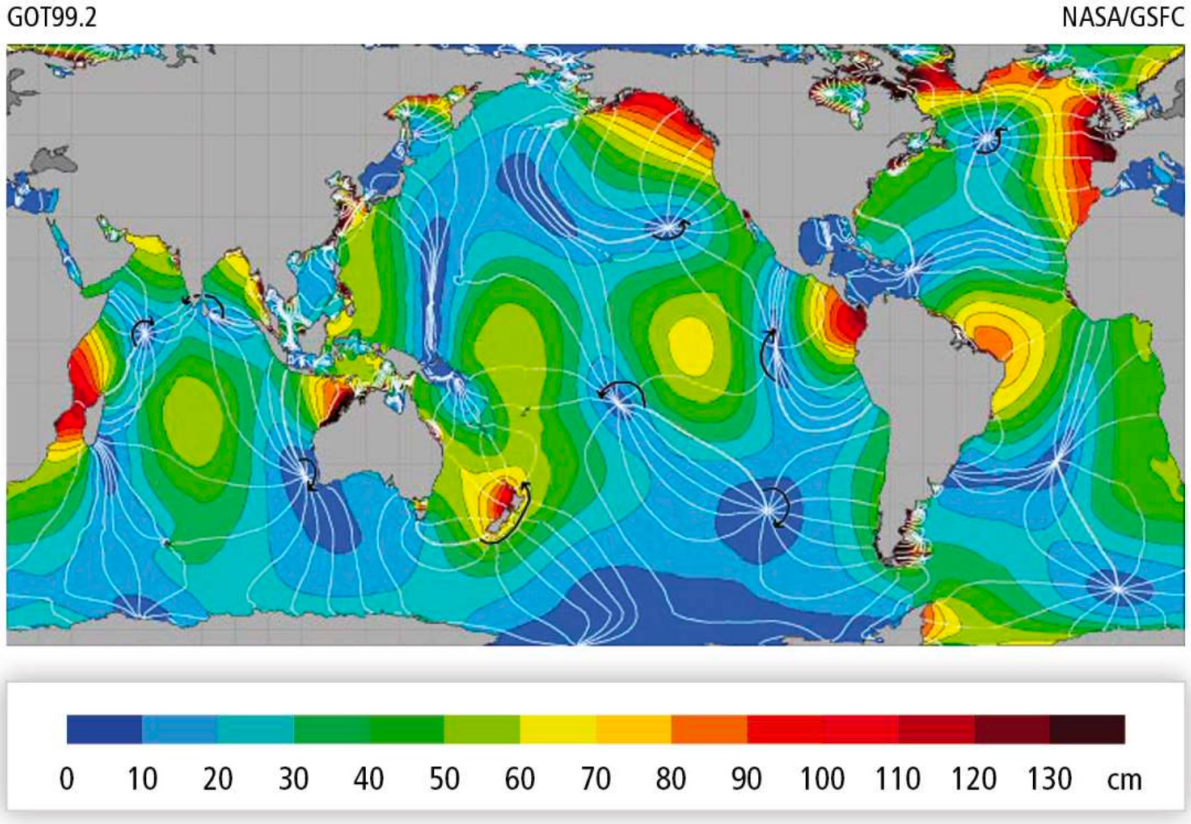
Energia Undimotriz

Wave energy derived from the transfer of the kinetic energy wind to the upper surface of the ocean. Theoretical wave energy resource is estimated in 32,000 TWh/yr (115 EJ/yr), twice the global electricity supply in 2008.



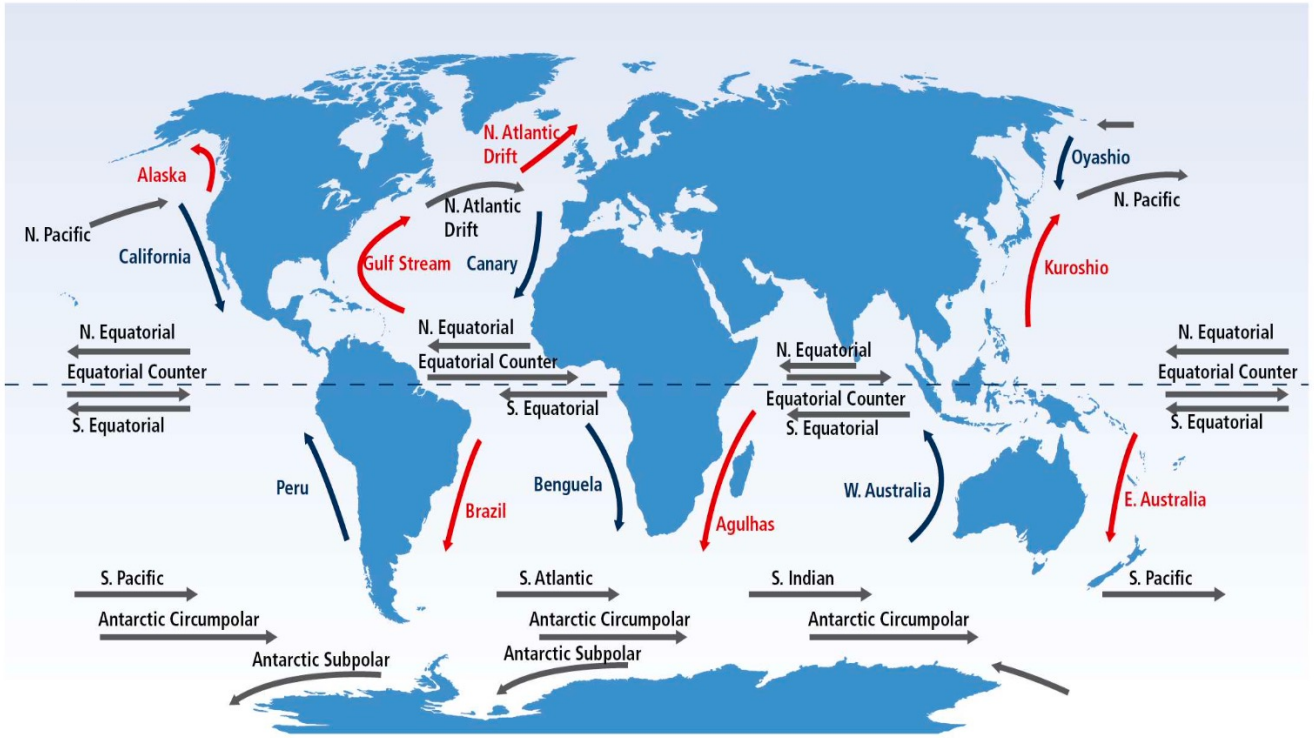
Energia das Marés

Tidal range (tidal rise and fall) derived from gravitational forces of the Earth-Moon-Sun system. Theoretical tidal power potential is in the range of 1 to 3 TW (4,730 TWh/year).



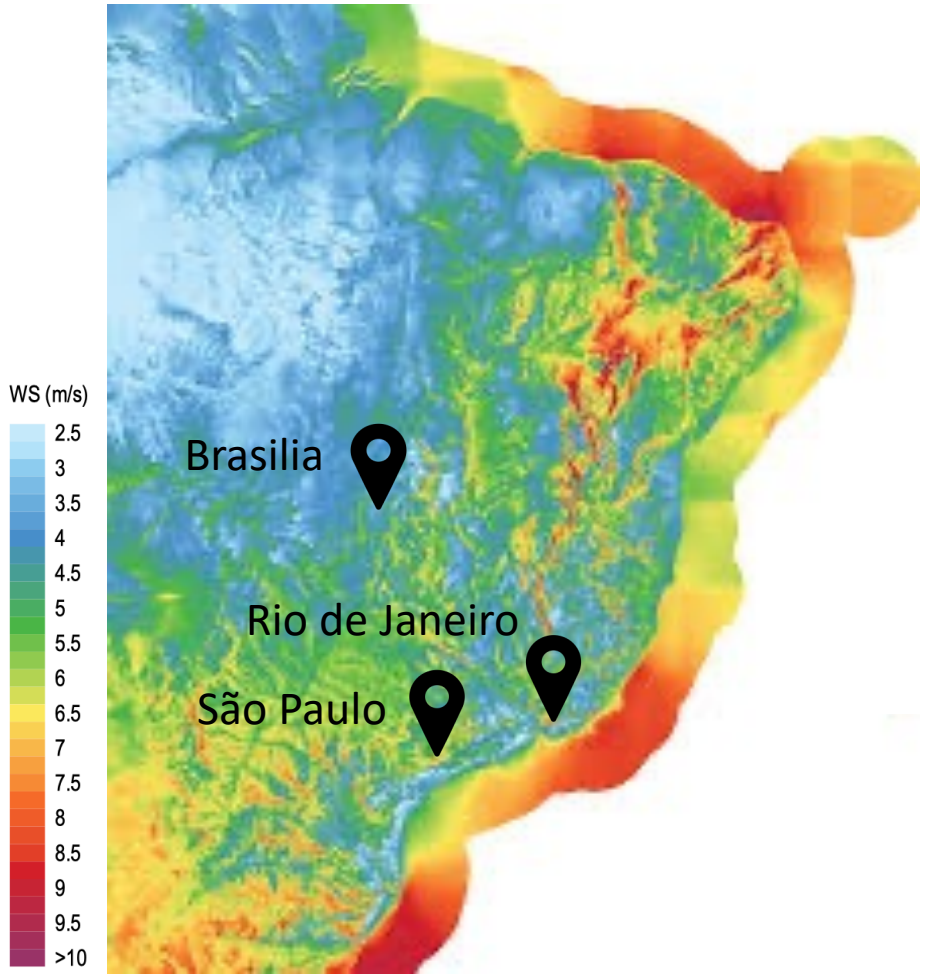
Energia das Correntes Marítimas

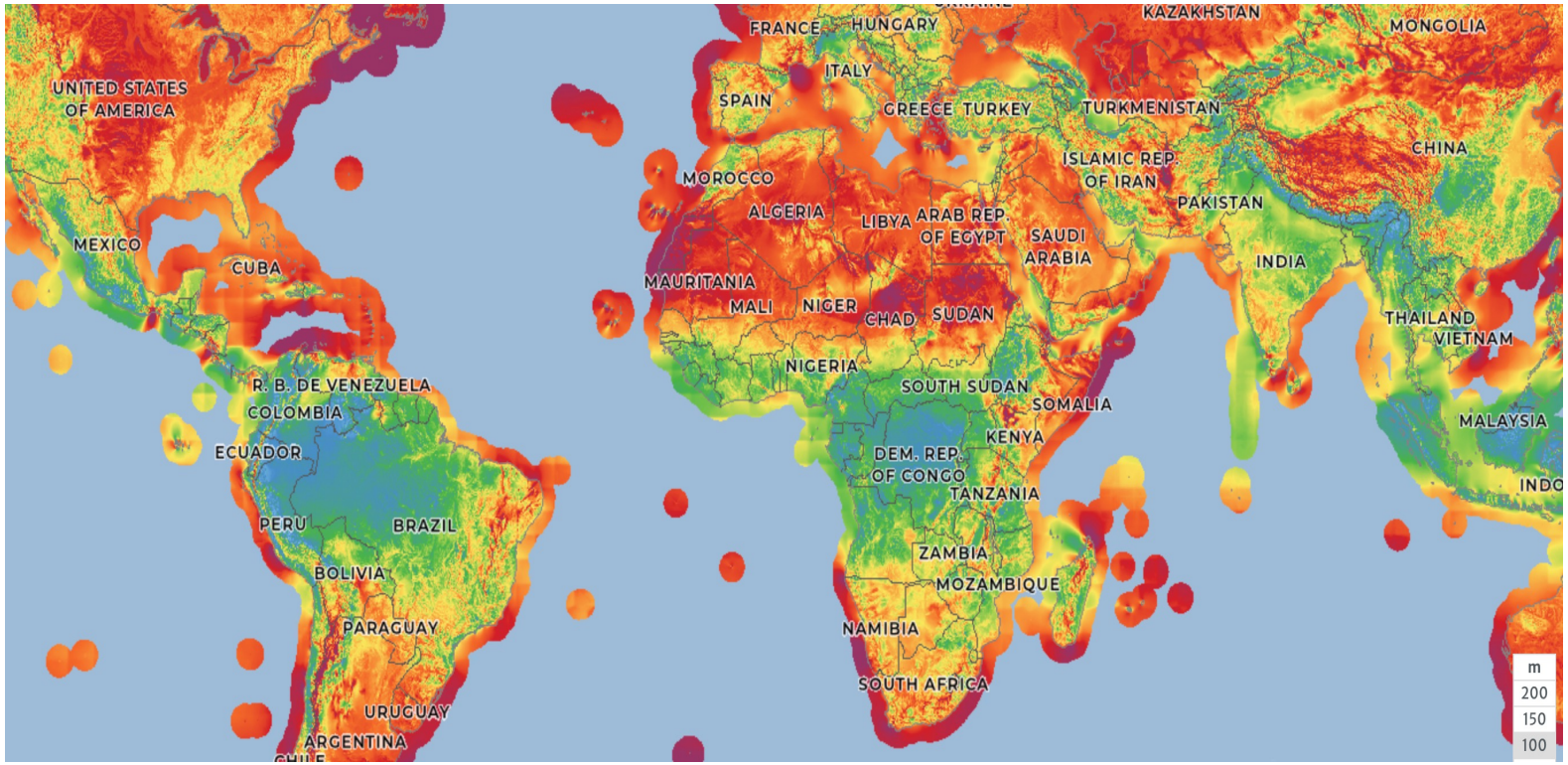
Ocean currents derived from wind-driven and thermohaline ocean circulation. The best-characterized system of ocean currents is the Gulf Stream in North America, where the Florida Current has a technical potential for 25 GW of electricity capacity.



Energia Eólica Offshore

https://globalwindatlas.info





Technology Readiness Level (TRL)