Total $\text{g-CO}_2/\text{kJ}$

Coal-CCS (309-573)

Blue = low estimate
Blue + red = high estimate

(Accounts for LCA, opportunity cost, loss of carbon sequestration, leakage, etc. See subsequent panels for breakdown)


updated with loss of carbon sequestration and new values for wind and CSP. Last update 12/20/15

**Ratio of nuclear:wind = 6.3-24.1**
Emissions from standard LCA only (ignores opportunity cost, lost carbon storage, leakage, other emissions)

Blue = low estimate
Blue + red = high estimate

Coal-CCS (255-442)
Emissions from background grid due to difference in time-lag between planning and operation of technology versus that of technology with shortest time lag.

Blue = low estimate
Blue + red = high estimate
Due to covering land on ground with energy facility, reducing carbon sequestration in soil:

- Wind (0.0004-0.0009)
- Solar-PV (0.19-0.55)
- Geothermal (0.22-0.24)
- Tidal (0)
- Wave (0)
- Hydro (0.006-0.009)
- Nuclear (0.3-0.72)
- Coal-CCS (1-1.8)

Blue=low estimate
Blue+red=high estimate
Coal-CCS (1.8-40.2): 1-18% leakage of sequestered carbon dioxide in 1000 years

Nuclear (0-4.1): One exchange of 50 15-kt weapons over 30 y due to expansion of uranium enrichment/plutonium separation in nuclear-energy facilities worldwide

Blue = low estimate
Blue + red = high estimate