

Comparative “Deaths per Terawatt Hour”

A useful metric (and industry standard) to compare relative impact of various energy technologies is “Deaths per Terawatt Hour”, which allows for assessing real impacts of various energy sources.

Here’s a comprehensive look at **deaths per unit of electricity** — typically expressed per TWh (terawatt-hour) or per billion kWh (equivalent to TWh) — comparing coal and nuclear power:

⚠ Coal vs. Nuclear – Deaths per TWh (Energy Production + Air Pollution + Accidents)

Our World in Data / Wikipedia summary (EU averages):

- **Coal:** 24.6 deaths per TWh
- **Nuclear:** 0.07 deaths per TWh [world-nuclear.org+10Our World in Data+10Our World in Data+10Our World in Data+7Wikipedia+7ResearchGate+7](#)

Global WHO figures (mortality per billion kWh $\approx$ per TWh):

- **Coal:** 100 deaths
- **Nuclear:** 0.04 deaths [Reddit+4ResearchGate+4WIRED+4](#)

This shows coal is $\sim 2,500$ times more fatal than nuclear per unit electricity.

Additional Studies & Context

- **Health-Related Risk (China-focused):**
 - Coal chain: ~ 57 deaths/GW-year (~ 57 per TWh)
 - Nuclear chain: ~ 4.6 deaths/GW-year (~ 4.6 per TWh)
[Wikipediade.wikipedia.org+6iaea.org+6Wikipedia+6PubMed+1de.wikipedia.org+1](#)
- **Range across regions** (coal: 6–98; nuclear much lower)
 - In Europe: Coal averages ~ 25 deaths per TWh; nuclear averages ~ 0.07
[Wikipedia](#)
- **Visual Capitalist & Our World in Data:**

- Coal, oil, and gas are in the tens of deaths per TWh; wind, solar, and nuclear are under 0.1 per TWh [Our World in Data+5Visual Capitalist+5Our World in Data+5](#)
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Summary Table

Energy Source Deaths per TWh

Coal	~25 – 100
Oil	~18 – 36
Natural Gas	~3 – 4
Nuclear	~0.04 – 0.1
Wind & Solar	~0.02 – 0.44

Interpretation

- **Coal is by far the deadliest**, reducing to around 25-100 lives lost per TWh due to mining accidents and air pollution.
 - **Nuclear is extremely safe**: commonly cited at **0.04 to 0.1 deaths per TWh** — 200 to 2,500 times lower risk than coal.
 - These figures include **operational accidents, healthcare effects from pollution, and long-term radiation**.
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Bottom Line

- **Per MWh** (1 MWh = 0.001 TWh),
 - Coal kills around **0.025–0.1 people**,
 - Nuclear kills around **0.00004–0.0001 people**.

That's approximately **1 death per 10,000 MWh for coal**, vs **1 death per 10 million MWh for nuclear**.

