

Supplementary Information

Table S1. Literature on the WF of electricity from different energy sources.

Energy source	Data sources regarding WF of energy
Coal	DOE ¹ ; Gleick ² ; Evans et al. ³ ; Inhaber ⁴ ; BLM ⁵ ; NETL ⁶ ; Fthenakis and Kim ⁷ ; Macknick et al. ⁸ ; Meldrum et al. ⁹ ; Williams and Simmons ¹⁰ ; Spang et al. ¹¹
Lignite	DOE ¹ ; Gleick ² ; Evans et al. ³ ; BLM ⁵ ; NETL ⁶ ; Meldrum et al. ⁹ ; Williams and Simmons ¹⁰ ;
Conventional oil	Gleick ² ; Inhaber ⁴ ; Williams and Simmons ¹⁰ ; Spang et al. ¹¹ ; WU et al. ^{12, 13}
Unconventional oil (oil sand)	Gleick ² ; Williams and Simmons ¹⁰ ; Spang et al. ¹¹ ; WU et al. ^{12, 13} ;
Unconventional oil (oil shale)	Gleick ² ; Williams and Simmons ¹⁰ ; WU et al. ¹² ;
Natural gas	Gleick ² ; Inhaber ⁴ ; Fthenakis and Kim ⁷ ; Macknick et al. ⁸ ; Meldrum et al. ⁹ ; Williams and Simmons ¹⁰ ; Spang et al. ¹¹
Shale gas	Gleick ² ; Meldrum et al. ⁹ ; Williams and Simmons ¹⁰ ; Spang et al. ¹¹
Nuclear	Gleick ² ; Inhaber ⁴ ; Fthenakis and Kim ⁷ ; Macknick et al. ⁸ ; Meldrum et al. ⁹ ; Williams and Simmons ¹⁰ ; Spang et al. ¹¹ ; Mudd ¹⁴ ; Murray ¹⁵ ; Schneider et al. ¹⁶ ; Stempien et al. ¹⁷ ;
Biomass (crops)	Fthenakis and Kim ⁷ ; Gerbens-Leenes et al. ¹⁸ ; Mekonnen and Hoekstra ¹⁹
Biomass (firewood)	Fthenakis and Kim ⁷ ; Meldrum et al. ⁹ ; Van Oel and Hoekstra ²⁰
Hydropower	Gleick ² ; Inhaber ⁴ ; Fthenakis and Kim ⁷ ; Macknick et al. ⁸ ; Meldrum et al. ⁹ ; Torcellini et al. ²¹ ; Pasqualetti and Kelly ²² ; Gerbens-Leenes et al. ²³ ; Herath et al. ²⁴ ; Arnøy ²⁵ ; Yesu ²⁶ ; Tefferi ²⁷ ; Mekonnen and Hoekstra ²⁸ ; Bakken et al. ²⁹ ; Demeke et al. ³⁰
Concentrated solar power	Inhaber ⁴ ; Fthenakis and Kim ⁷ ; Macknick et al. ⁸ ; Meldrum et al. ⁹ ; Spang et al. ¹¹
Photovoltaics	Inhaber ⁴ ; Fthenakis and Kim ⁷ ; Macknick et al. ⁸ ; Meldrum et al. ⁹ ; Spang et al. ¹¹
Wind	Inhaber ⁴ ; Fthenakis and Kim ⁷ ; Macknick et al. ⁸ ; Meldrum et al. ⁹ ; Spang et al. ¹¹
Geothermal	Inhaber ⁴ ; Fthenakis and Kim ⁷ ; Macknick et al. ⁸ ; Meldrum et al. ⁹ ; Spang et al. ¹¹ ; NETL ³¹

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