

# Diversifying the energy grid

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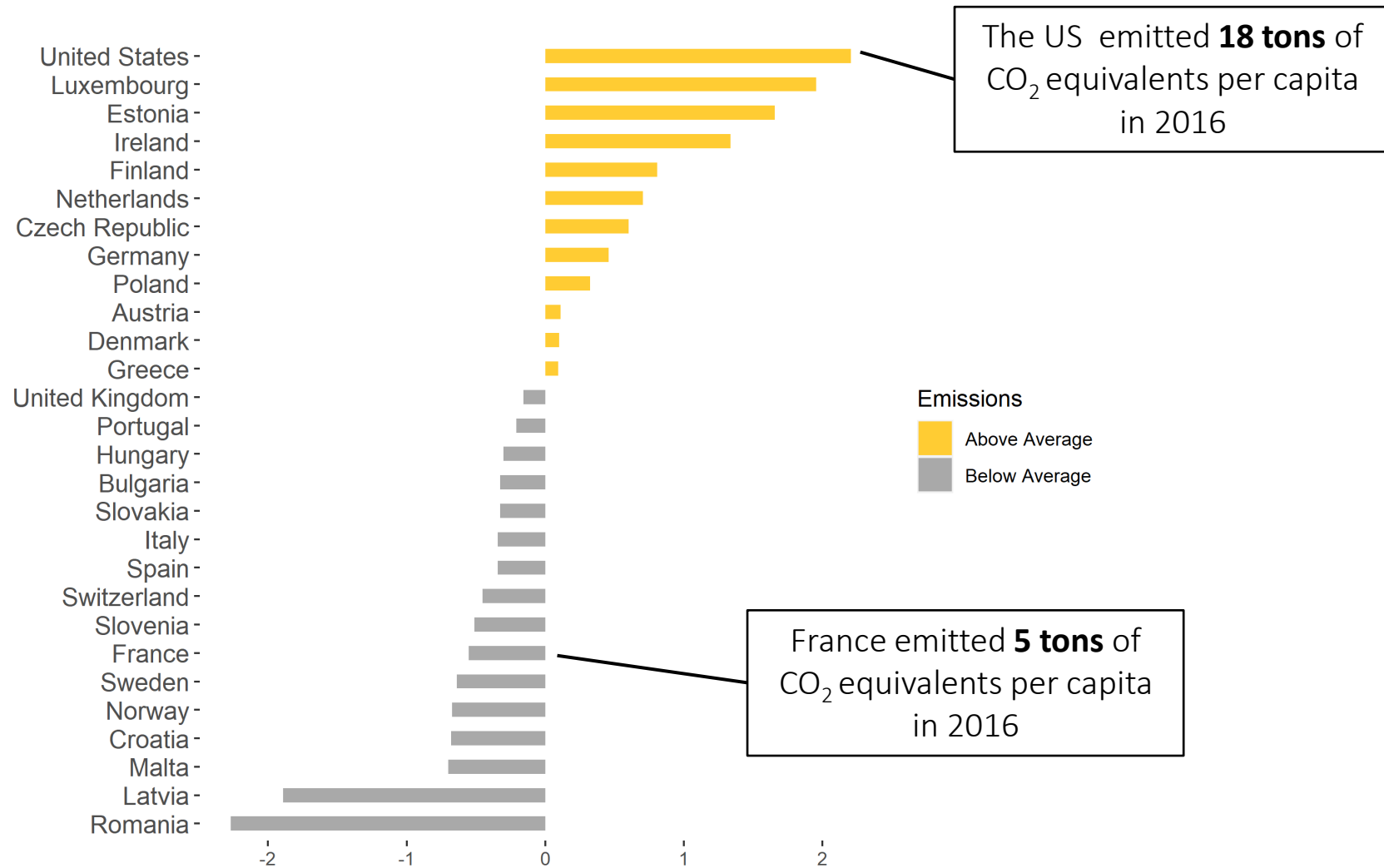
# Overview

How does the US compare in greenhouse gas emissions?

What is the current percent of energy being generated by renewable sources in the US?

But won't increasing renewable sources lead to less reliability on the grid?

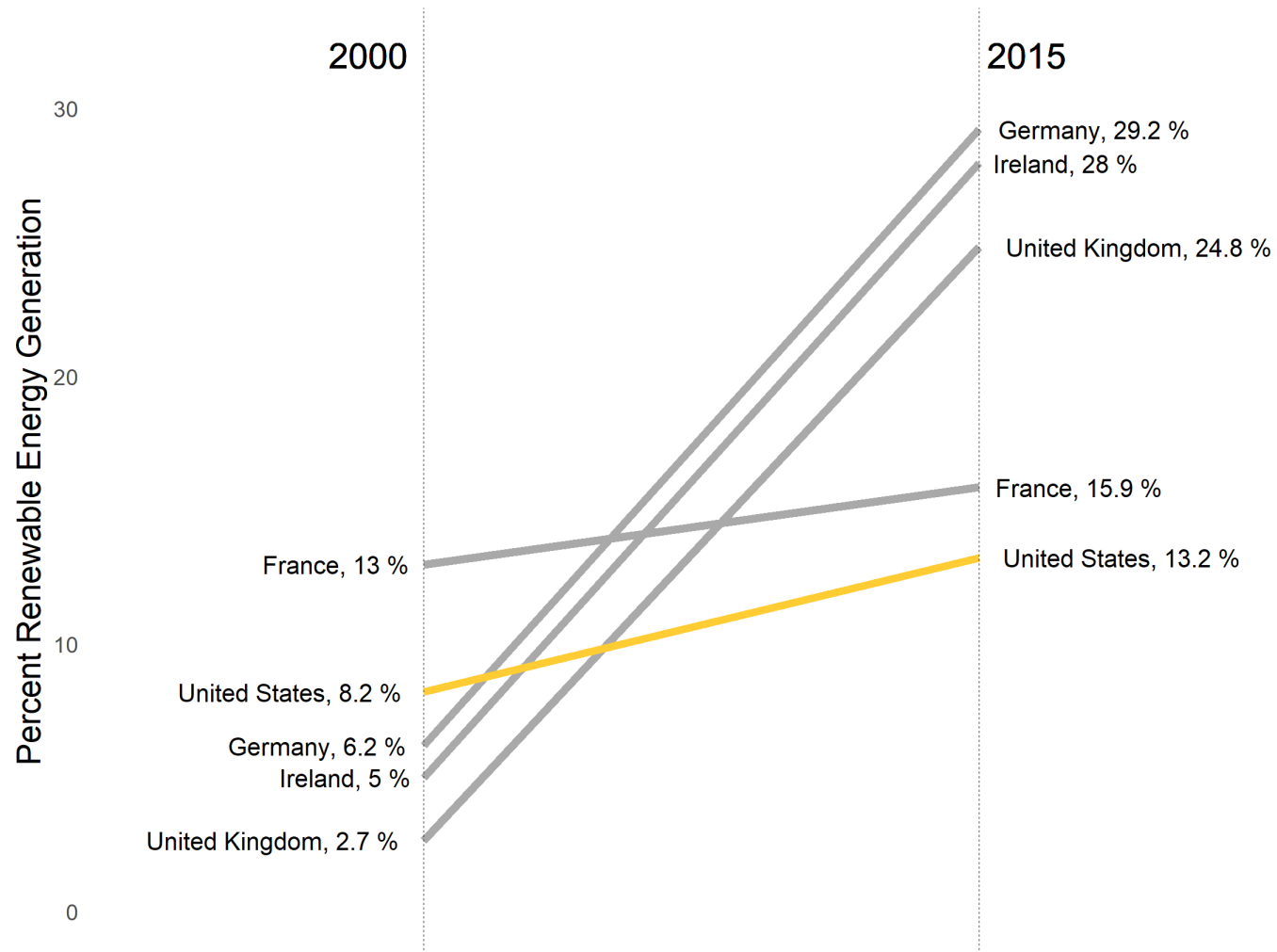
Areas of opportunity



Source: [8]

The US leads in greenhouse gas emissions at a per capita level compared to most of Europe. In 2016, the United States total greenhouse gas emissions were **2 times** the average of the European countries listed above.

# State of the Union's Emissions

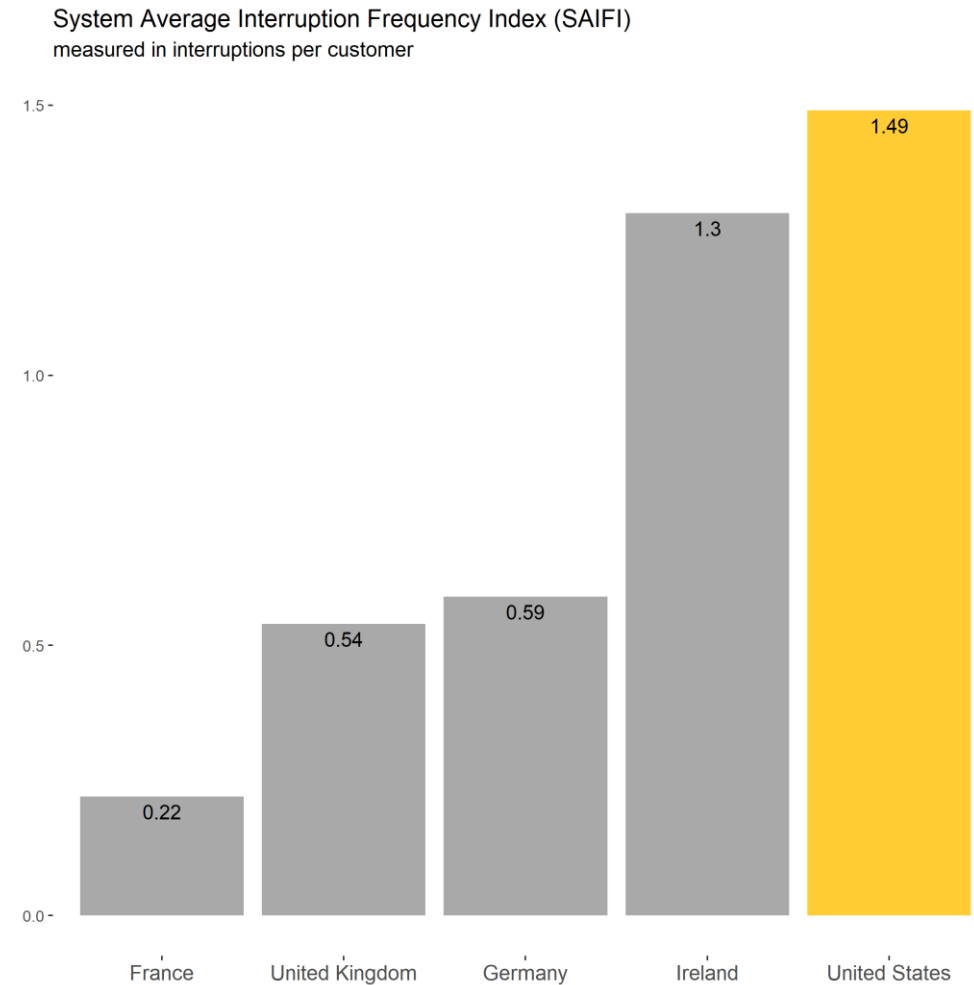
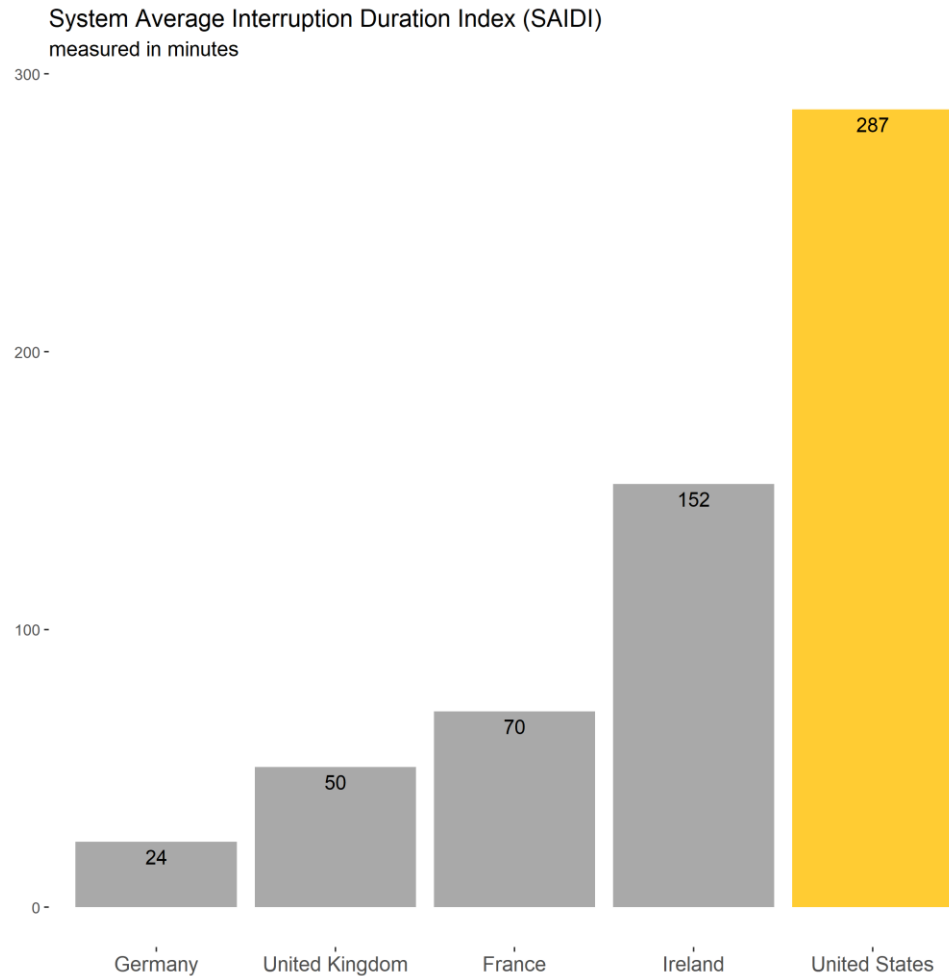


Source [3] & [4]

# The US falls behind in renewable energy

From the years 2000 to 2015, the US increased the amount of energy it generates from renewable sources from **8.2%** to only **13.2%**. In contrast, Germany increased their renewable portion from **6.2%** to **29.2%** - an increase of almost 300%!

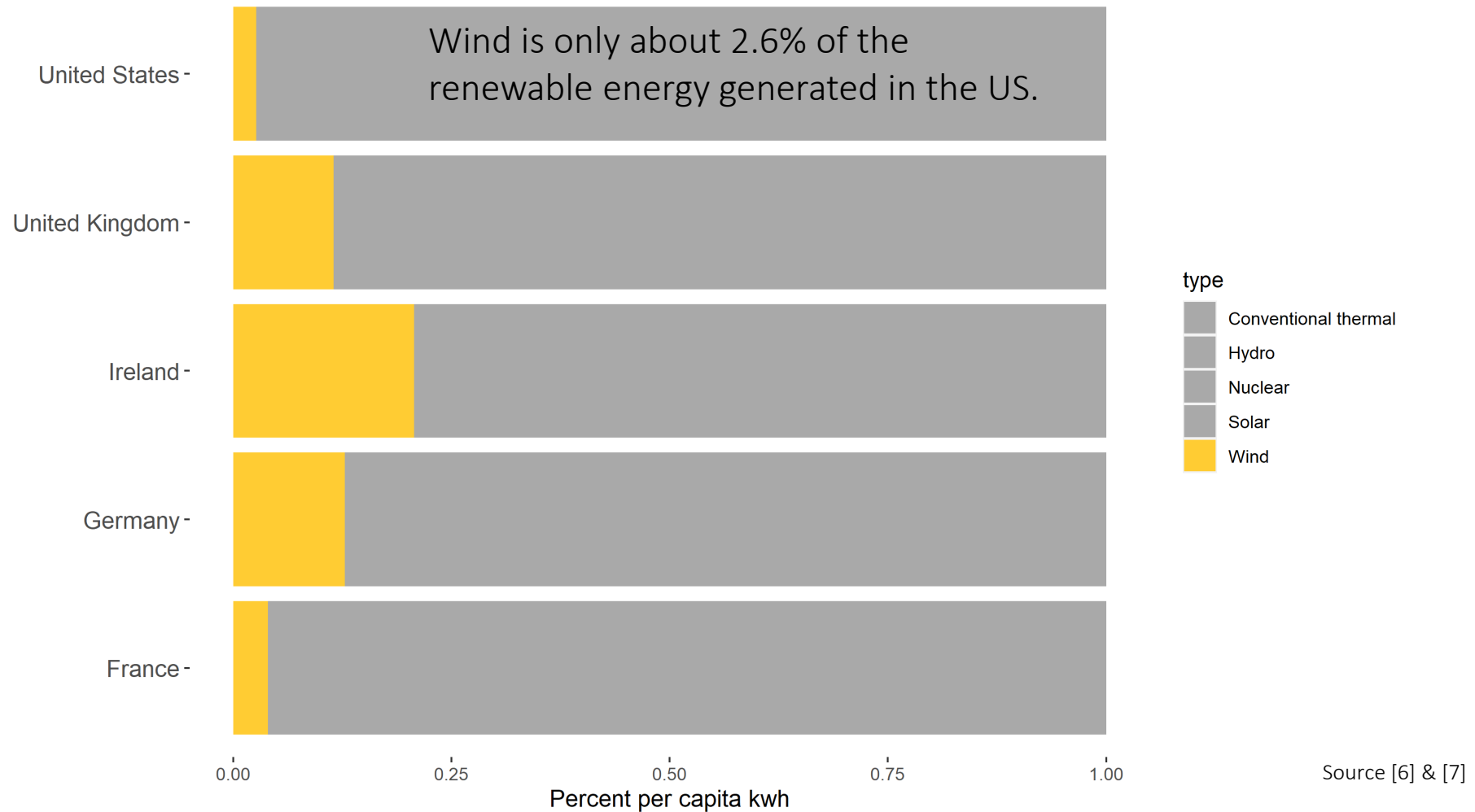
# Yeah, but isn't it less reliable?



Source [1] & [2]

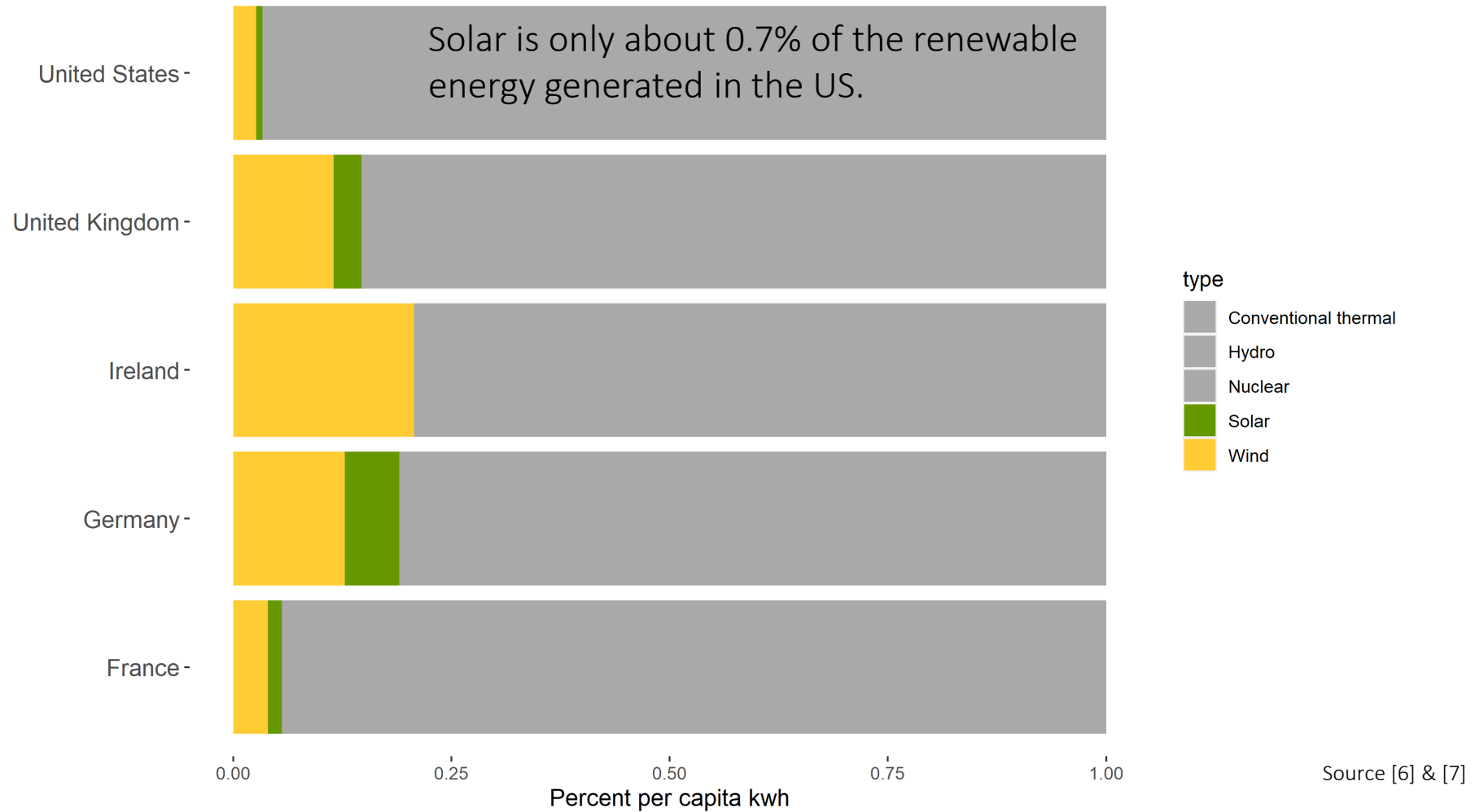
Despite its higher percentage of conventional thermal energy sources, the US has the **highest** SAIDI and SAIFI

# Opportunities for Investment



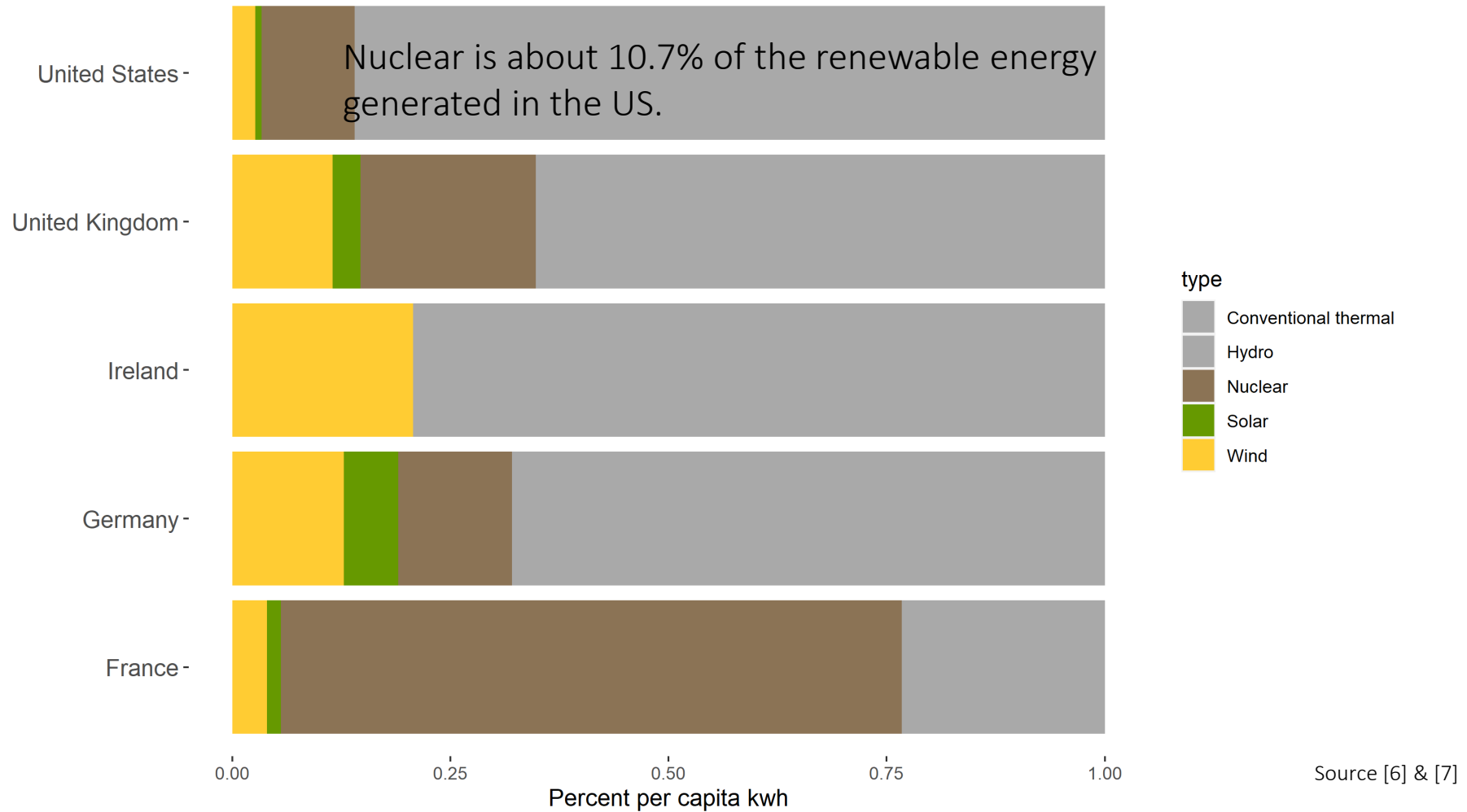
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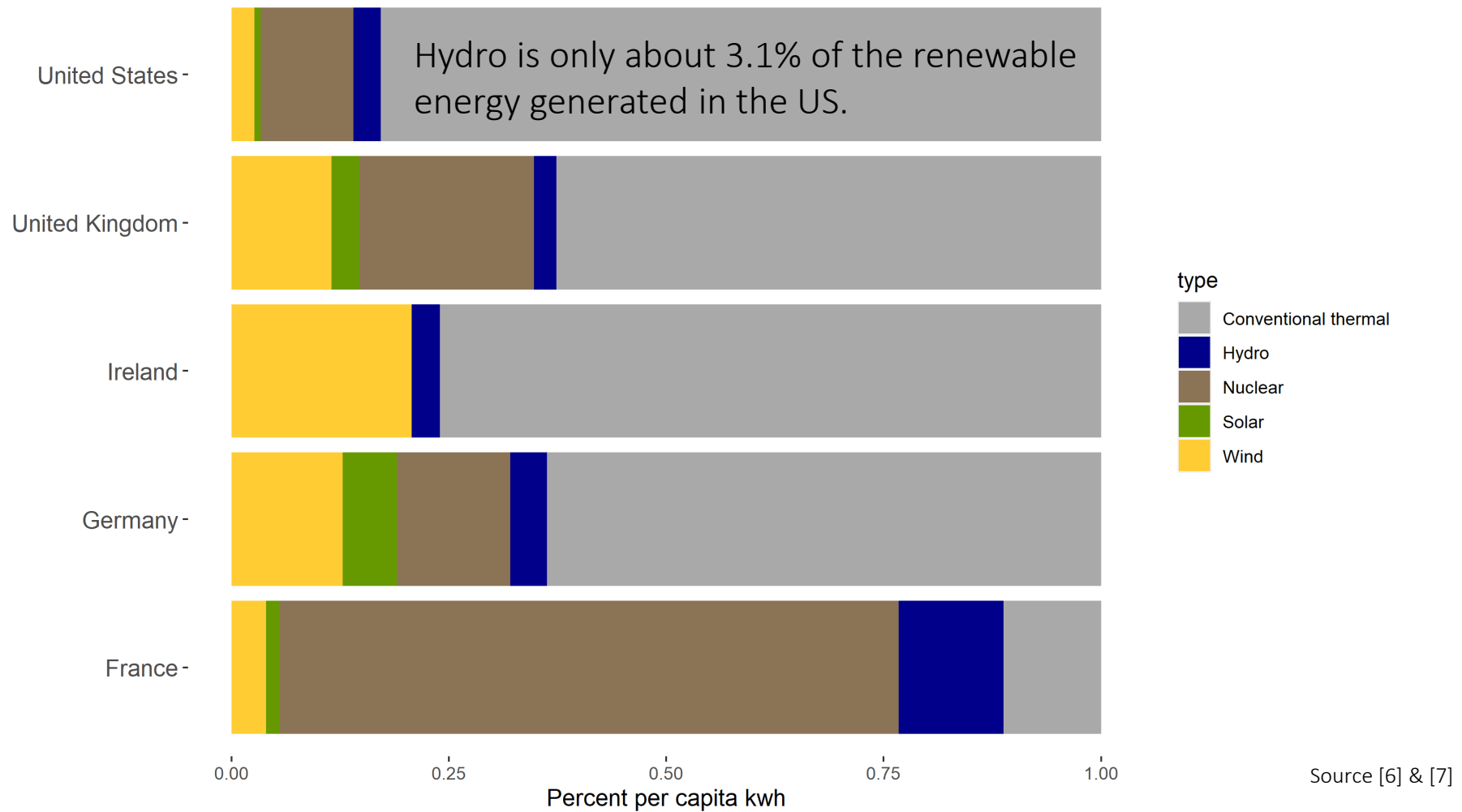
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# Summary

The US has one of the highest per-capita CO2 equivalent greenhouse gas emissions, compared to most of Europe

The US also lags behind in renewable energy sources

Based on SAIDI and SAIFI data, there is no reason to believe increasing renewable sources will lead to decreased grid reliability

The US has opportunities to invest much more in solar and wind energy

**We need more policies and incentives to increase the percent of energy generated by wind, hydropower, or solar within the United States.**

# Sources

- [1] Council of European Energy Regulators. (2018). CEER Benchmarking Report 6.1 on the Continuity of Electricity and Gas Supply. Retrieved from <https://www.ceer.eu/documents/104400/-/-/963153e6-2f42-78eb-22a4-06f1552dd34c>
- [2] US Energy Information Administration. (2020). Annual Electric Power Industry Report, Form EIA-861 detailed data files. Retrieved from <https://www.eia.gov/electricity/data/eia861/>
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- [4] World Bank, World Development Indicators. (2015). *Electricity production from hydroelectric sources (% of total)*. [Data file]. Retrieved from <https://data.worldbank.org/indicator/EG.ELC.HYRO.ZS>
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- [7] Tidy Tuesday. (2020). 2020-08-04 [Data file]. Accessed from GitHub repository <https://github.com/rfordatascience/tidytuesday/tree/master/data/2020/2020-08-04>
- [8] Mathieu, E., Ritchie, H. and Roser, M. (2021). co2-data. [Data file]. Accessed from GitHub repository <https://github.com/owid/co2-data>

World population: World Development Indicators/World Bank