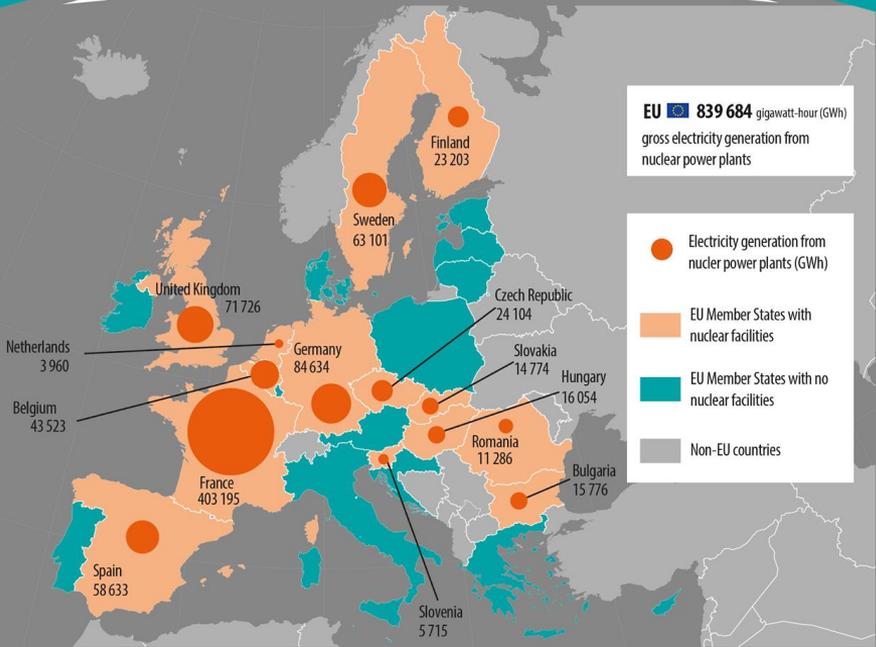




UK Nuclear Energy

By Toby, Callum, Quinn, Julie and Lucy

Nuclear electricity in the EU

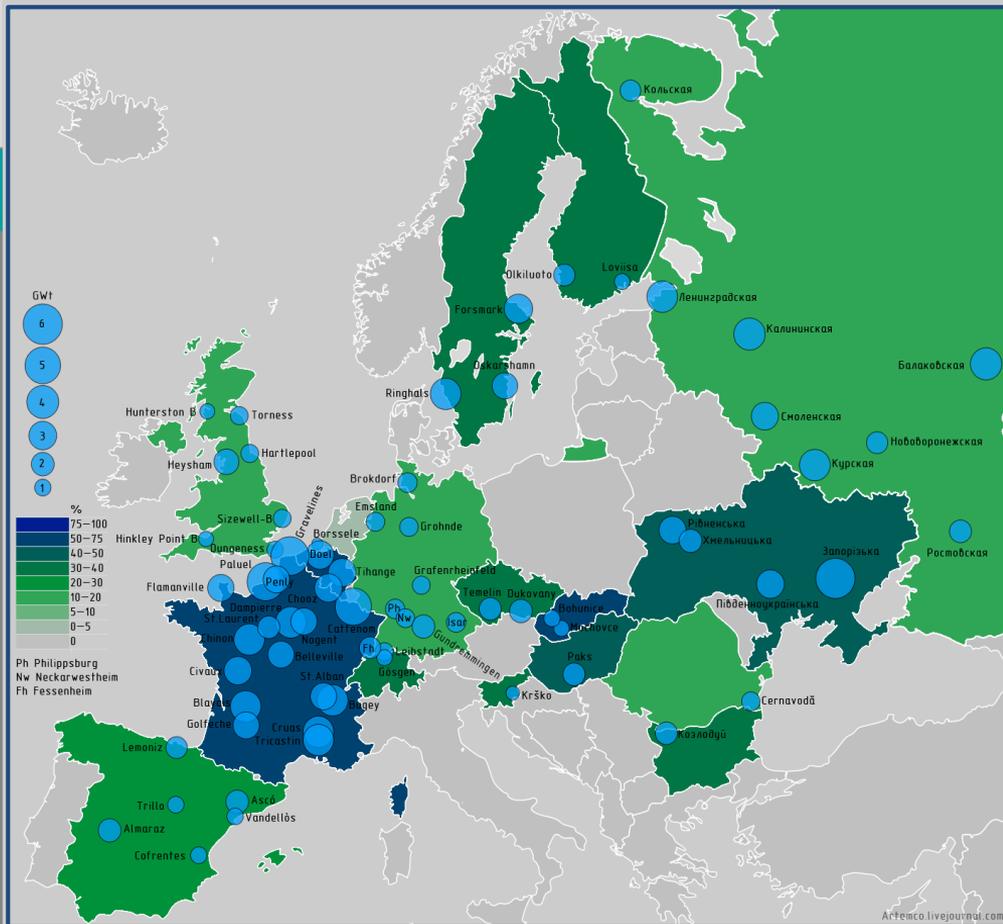


The EU Member States with no nuclear power production:
Denmark, Estonia, Ireland, Greece, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Austria, Poland, Portugal.

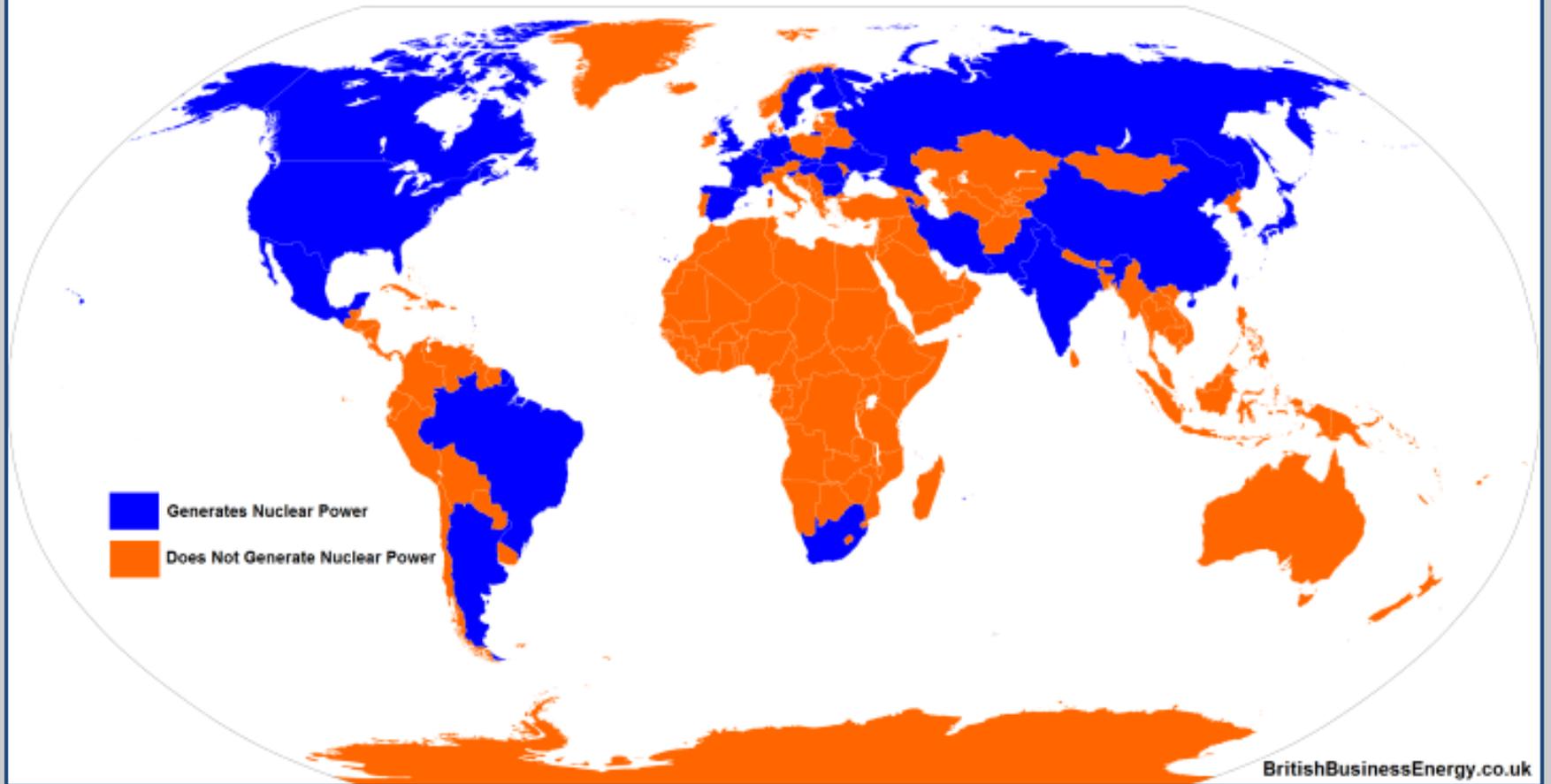
How do we compare in Europe?

Quinn

Left is 2016 data

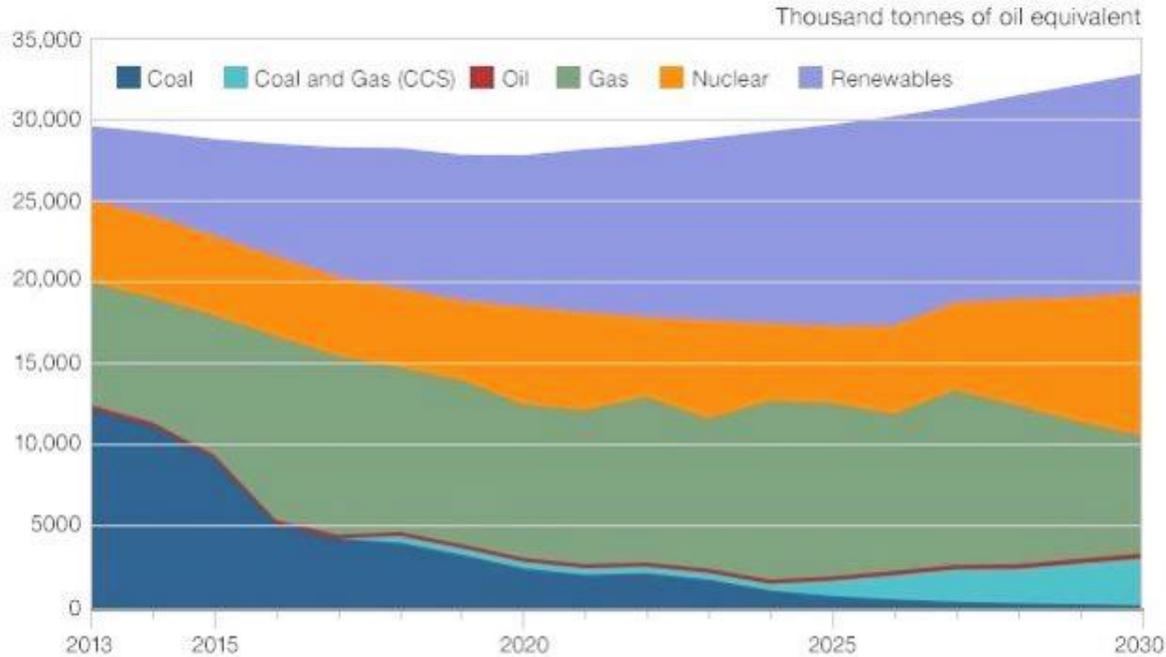


Nuclear Vs Non-Nuclear Countries in 2016



UK energy mix over time - Tohy

Future sources of electricity (2013 – 2030)

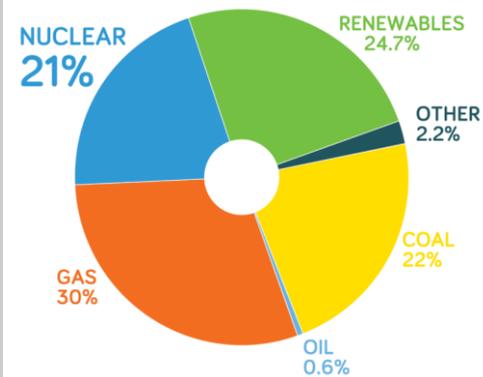


Source: DECC

- Coal used to be the most common source of energy in the UK
- Coal is now less common as coal became less used in industry, transport and at home
- Also, competition from Asian coal mines and preference for natural gas damaged the coal industry in the UK
- Since natural gas was cheaper and burnt cleaner it has become the most common source
- In the future, renewables, alternative energy sources (like shale gas) and nuclear are predicted to increase in popularity
- A deal between the UK and the wind industry means 30% of electricity will be from offshore wind by 2030

The current situation - Toby

- Transport is still the largest cause of energy use, then in the home, then industry
- Transport isn't fueled by nuclear energy (at least until electric cars become more common), this may be why nuclear energy isn't more common
- The UK has 15 running nuclear reactors at seven power plants
- This provides 21% of the UK's electricity but almost half of this capacity is going to be retired by 2025
- Currently there are 8 power stations in development
- Hinkley Point C is one major new site being developed by EDF energy



Sites for new nuclear power stations by 2025



Government policy - Toby

- “The government believes that nuclear energy has an important role to play to deliver our long term objective of a secure, low carbon, affordable, energy future.”
- The UK is a member of The Nuclear Energy Agency, it is a part of the Organisation for Economic Co-operation and Development and aims to develop nuclear energy as a safe and cheap energy source
- Government policy is likely to change due to leaving the EU
- In the letter to the President of the European Council that began the Brexit process, the UK said it wanted to leave the European Atomic Energy Community



Hinkley Point C: Where is it?



Hinkley Point C is located in Somerset, in the South West of England. It's closest significant location is the town of Bridgewater, which is approximately 10 miles South of Hinkley point.

Advantages & disadvantages - Callum

	Pros	Cons
Nuclear	<ul style="list-style-type: none">- Fuel can be reprocessed- Low pollution- Lots of uranium around the world- Lots of jobs associated with the use of nuclear energy including maintenance and construction (good for Somerset)	<ul style="list-style-type: none">- High level of nuclear waste- High risk associated with nuclear energy- Difficult to dispose of waste- Can't make a standardised nuclear power plant because of regulations in other countries- Not cost effective- Unreliable (particular type of reactor)- Cost of fuel varies- Reactors can cost more than first predicted, for example Flamanville could cost 5bn Euros, rather than 3.3bn originally estimated*- Controversy within in situ leaching as acids in ground may contaminate water supply- Hinkley Point C - investment by China and France - form of hard power being exerted upon the UK?

'Flamanville Fiasco'

The third-generation "European Pressurized Reactor" (EPR), built by EDF and Areva, was supposed to be in operation by 2012 and is meant to be one of the safest reactors in the world, and the most energy efficient.

It was commissioned as part of France's nuclear renaissance programme that will see the country's ageing nuclear plants replaced over time.

However Flamanville 3, as it is known, is unlikely to start producing power anytime soon after being hampered problems and incidents, including the death of a construction worker in 2011.

April 2015 - it was revealed that "a very serious fault" had been detected in the steel of the "pressure vessel" - a key component of the reactor, meaning another delay of at least a year was likely. "It is a serious fault, even a very serious fault, because it involves a crucial part of the nuclear reactor," said Pierre-Franck Chevet, head of France's nuclear safety agency (ASN).



Causes strong viewpoints - Quinn

Against

**The £18bn Hinkley gamble:
Nuclear deal will cost every UK
family an extra £1,000 as May
signs off on the plans to protect
Britain's national security**

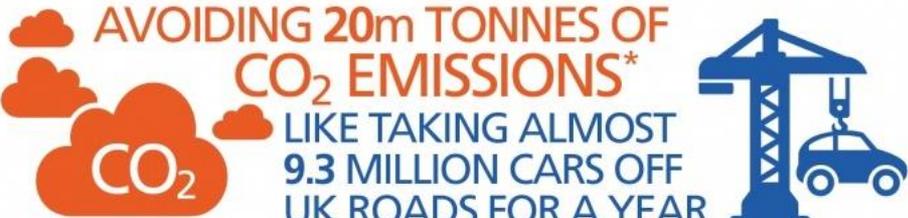
<https://www.dailymail.co.uk/news/article-3791895/The-18bn-Hinkley-gamble-nuclear-deal-cost-UK-family-extra-1-000-signs-plans-protect-Britain-s-national-security.html>

For

**IN 2018 EDF ENERGY'S 8 NUCLEAR
POWER STATIONS GENERATED ENOUGH
LOW CARBON ELECTRICITY FOR
56% OF UK
HOMES**



**AVOIDING 20m TONNES OF
CO₂ EMISSIONS***
LIKE TAKING ALMOST
9.3 MILLION CARS OFF
UK ROADS FOR A YEAR



*WHEN COMPARED TO DIRECT EMISSIONS OF COMBINED CYCLE GAS TURBINES | ALL FIGURES ROUNDED TO NEAREST HUNDRED THOUSAND

Protesters blockaded site in 2011 and 2015

<https://www.bbc.co.uk/news/uk-england-somerset-33915826>

<https://www.theguardian.com/environment/2011/oct/03/hinkley-point-protest-nuclear-power>

**Strong viewpoints are presented for
both sides of the argument, with some
taking drastic measures to get their
points across.**

“Nuclear energy provides the best solution to Europe’s impending energy gap”

Can we reach a consensus internationally?

Strongly
agree



Strongly
disagree