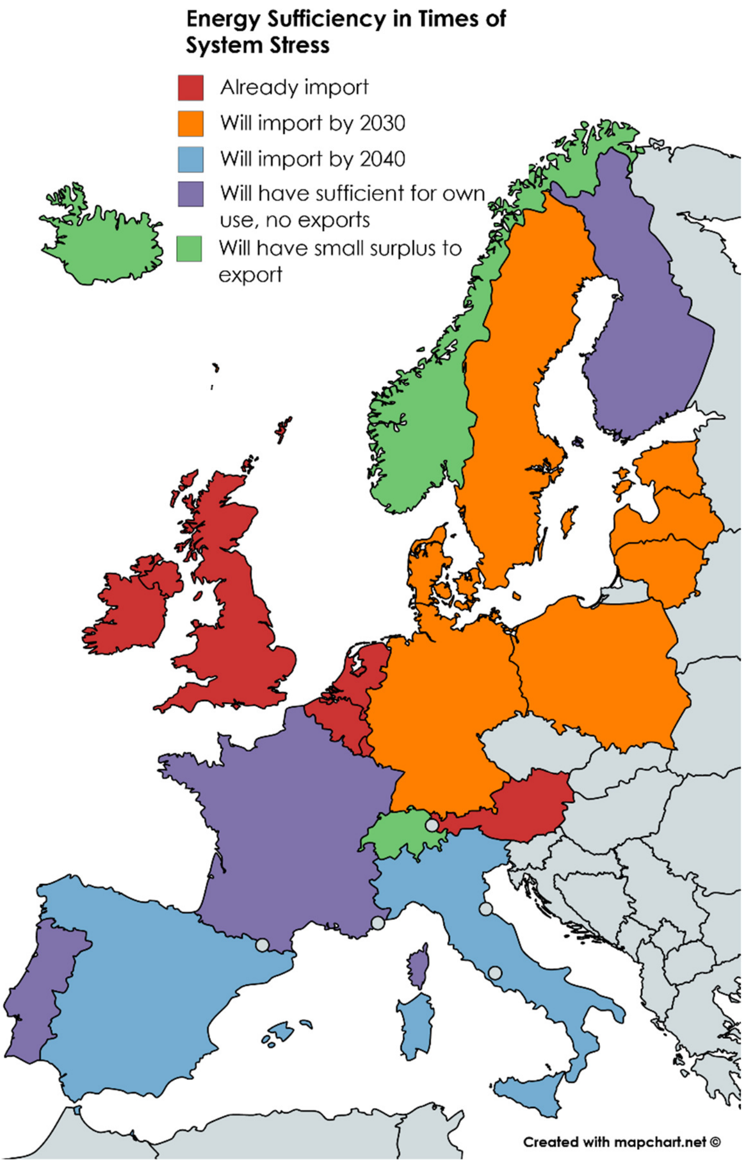
Grid-scale electricity storage
using an innovative form of
Compressed Air Energy Storage

Interconnectors in Europe

We have studied the energy transition plans of 6 countries in detail (UK, DE, FR, IT, ES, NL - who account for 75% of pre-Brexit EU GDP - please forgive the number of abbreviations!) and are aware in general terms of the plans of most of our other neighbouring countries. As can be seen from the map, during "times of system stress" (i.e. high demand and/or low renewable generation) the UK, NL, BE, EI and AT already rely on electricity imports through interconnectors. By 2030 these will be joined by DE, PL, SE and the Baltic states. By 2040 Spain and Italy will join them. France and Finland will have enough for their own needs due to nuclear, and Portugal due to hydro - but no surplus to export. Only Norway, Switzerland and Iceland will have electricity to export - and a 1GW interconnector to Iceland is expected to cost £5-10bn, 7-14 times the cost of Storelectric's CAES.



Given that these "times of system stress" are largely concurrent (e.g. after sunset on a windless winter evening), this means that there will not be enough spare electricity for all the countries that rely on the imports, yielding rolling black-outs and brown-outs (euphemism: enforced DSR) in all of them. And no grid operator will politically be able to say "I caused this black-out because we could earn millions by exporting what we needed".

So the only way for each of these importing countries to keep the lights on, and especially for the UK to do so, is large amounts of large-scale long-duration storage. Storelectric's CAES is a similar cost per GW to the BritNed interconnector and can be relied upon in ways in which (as we have seen) interconnectors cannot.

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