

Russia: the fossil fuel 'superpower'

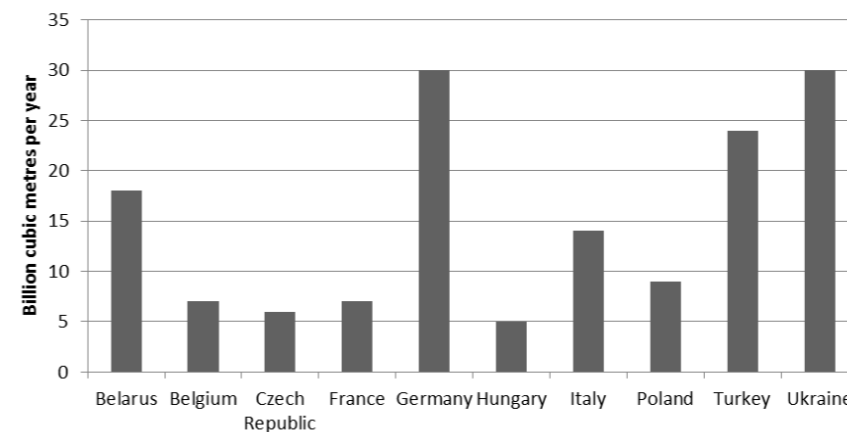
Royal Geographical Society with IBG

ENERGY PATHWAYS can be drawn as arrows on a map that show how places are **linked together** by **flows** of natural gas or oil. The pathway links the **exporting** country (in this case Russia) with the country which is **importing** the Russian oil

ENERGY DEPENDENCY shows how reliant an individual country becomes on imports of gas or oil from elsewhere. If a country is highly dependent then it can be important to maintain a good relationship with the country it buys its energy from.

In this exercise, you will use a range of graphical techniques to show how Russian oil and gas is used by other countries. By placing Russia at the heart of a **network** of energy flows, we will see how dependent many countries are on Russian energy.

Russia's top ten gas export destinations 2012

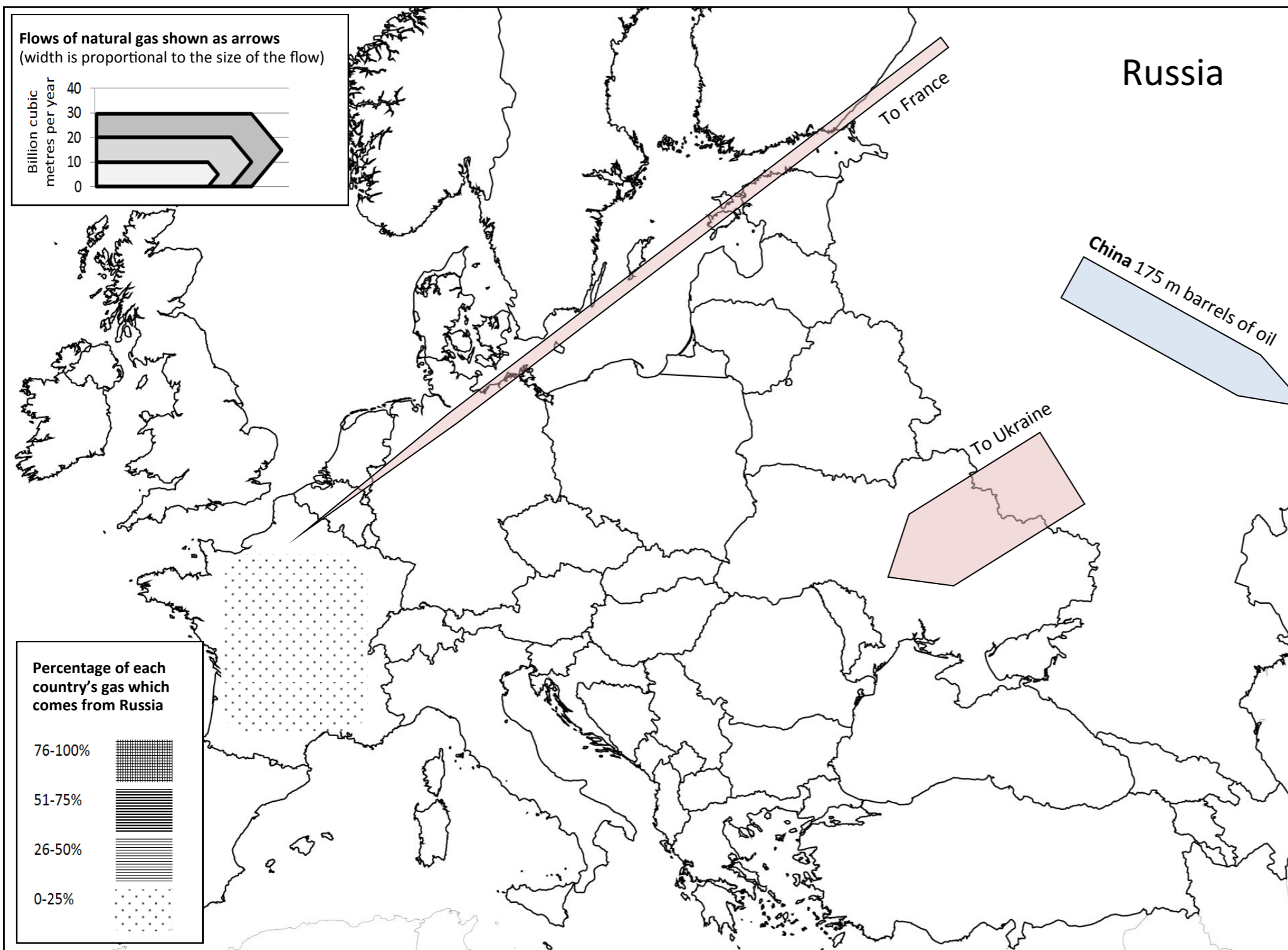


Imports of natural gas from Russia as a percentage of total imports of natural gas (2012)

Austria	71
Bulgaria	100
Czech Republic	100
Estonia	100
Finland	100
France	16
Germany	36
Greece	60
Hungary	44
Italy	28
Latvia	100
Lithuania	100
Netherlands	11
Poland	80
Romania	86
Slovakia	99
Slovenia	28
Ukraine	100

Russia's top five oil export destinations (2012)

Country	Million barrels per year
Belarus	157
Poland	172
China	175
Netherlands	201
Germany	250



Classroom exercises

(1) Illustrating energy pathways

1. Draw **proportional arrows** to link Russia with its top ten gas customers. France and Ukraine have already been completed for you. Use the data in the bar chart and the scale shown on the map to work out how wide the remaining eight arrows should be.
2. Identify the countries that the arrows should point towards using a world map or atlas which your teacher can provide.
3. Colour in your gas arrows using the same colour, for example red.
4. Label each arrow with the name of the country it is directed towards.
5. Draw five additional arrows, in a different colour (blue is suggested), to illustrate the oil exports shown in the small table. Write the number of millions of barrels next to the arrow (China has been shown as an example).

(2) Illustrating energy dependency

Locate the countries shown in the large table on the map. Shade in part of each of them using the shading scheme shown on the map. In each case, you must first identify which category the country belongs in. For instance, France is in the lowest category of 0-25%. It is not especially dependent on Russian gas. Therefore it has been shaded in lightly (as an example). Whereas other countries are more dependent in Russia and should be shaded darker.

(3) Discussion

What does your completed map tell you about the pattern of energy pathways in Europe? What does it tell you about dependency on Russian energy? How might this affect the relationship that European governments have with their Russian neighbour? Recently, Russia annexed (seized) a part of one of its neighbour states, Ukraine. Foreign governments had difficulty deciding how to react to this event. Can you suggest why?