

# World Risk Poll 2021

## Focus On: Fossil fuel dependency and perceptions of climate change

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### What the data tells us:

- Globally people are concerned about climate change, but it is not their most immediate safety concern.
- People in countries with a significant reliance on fossil fuels for internal energy needs or for export are less likely to view climate change as a threat.
- This lack of concern can often be tightly linked to regions within countries with a high dependence on fossil fuel production.

### What we can do about it:

- Encourage economic diversification in fossil fuel producing countries and incentivize low-carbon technologies and renewable energy.
- Support middle and low-income countries in this diversification.
- Create and implement transitional plans to re-skill fossil fuel industry workers for a post-carbon future.
- Better communicate the link between increasingly extreme weather events and climate change, to make the threat feel less abstract.



## Introduction

Climate change poses a dire and imminent threat to our planet and future generations. The consequences of unchecked global warming are already becoming increasingly evident, with rising sea levels threatening coastal communities, extreme weather events wreaking havoc, and ecosystems collapsing at an alarming rate. The risk of climate change extends far beyond environmental concerns; it threatens human health, food security, and economic stability on a global scale.

However, public perception of the threat that climate change represents varies widely. The 2021 Lloyd's Register Foundation World Risk Poll is a unique global dataset covering 121 countries and interviewing over 125,000 people including regions, countries and people whose attitudes are often overlooked. It is therefore the ideal tool to understand how and why people's perceptions of climate change varies between and also, importantly, within countries.

The Poll asks respondents whether they think climate change will be a threat to people in their country in the next 20 years, and at the global level 41% of respondents said climate change is a 'very serious threat'. This increases to 67% when people who see climate change as a 'somewhat serious threat' are included. People were most concerned about climate change in Chile, where 87% of respondents said they saw climate change as a 'very serious threat', rising to 94% when including those who view it as a 'somewhat serious threat'. At the other end of the scale was Saudi Arabia where only 8% of respondents saw climate change as a 'very serious threat', rising to 31% when including those who view it as a 'somewhat serious threat'.

**87%**  
of people in Chile view  
climate change as a  
'very serious threat' yet

**< 1%**  
view it as the biggest  
threat to them  
personally.

## Public perceptions of climate change vary globally

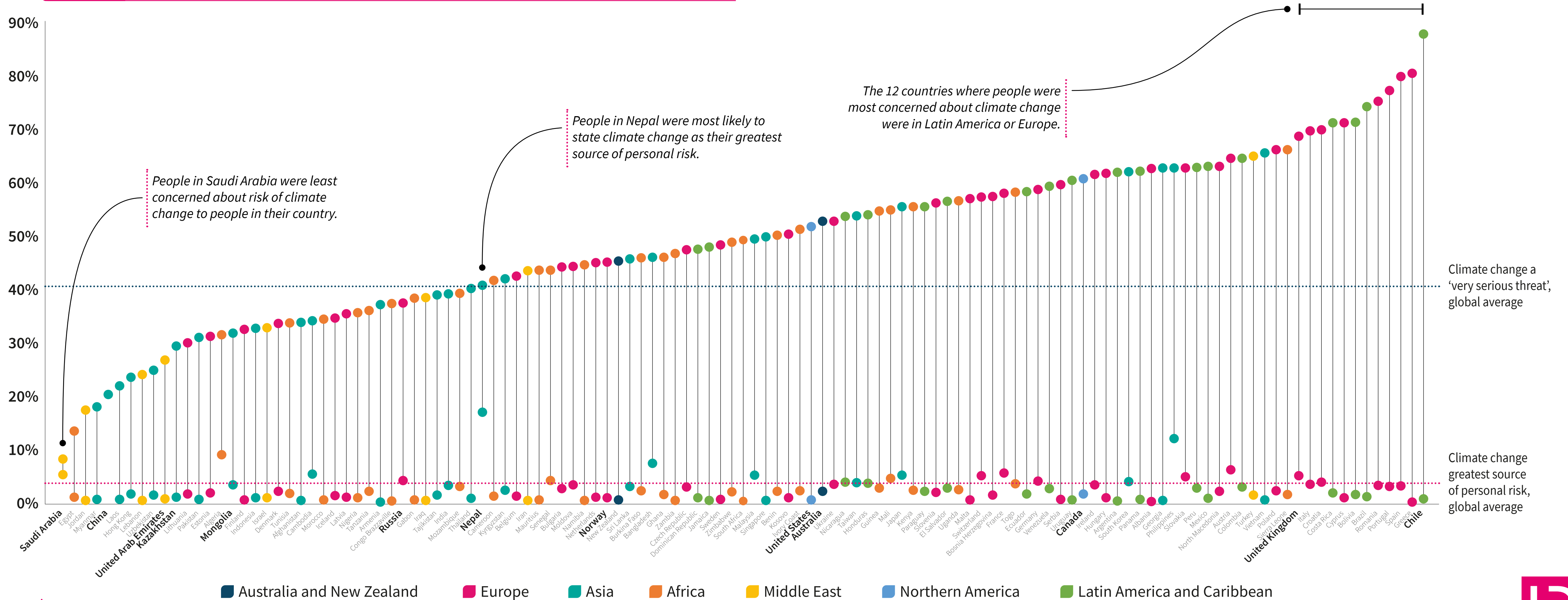
Public perceptions of climate change may vary due to a complex interplay of factors. Sociocultural and political influences, coupled with differences in education and access to information, shape individual perspectives. Additionally, the sheer scale and long-term nature of climate change make it challenging to grasp its immediate relevance to our daily lives. Disinformation campaigns and vested interests seeking to downplay the severity of the problem further muddy the waters, sowing doubt and confusion. Moreover, the

abstract nature of climate change, often experienced indirectly through distant events or statistical data, can make it difficult for people to connect with its tangible impacts.

This disconnect is visible in the Poll dataset itself. In a question which asked people about the greatest source of risk to them in their daily life, only 3% of respondents globally named climate change. In Chile, where 87% of people viewed climate change as a ‘very serious threat’, less than 1% named it as their biggest threat.

An important caveat is the phrasing of the questions; the question about daily life suggests an immediate threat to the individual, whereas the climate change question focuses on the population of the country in the next 20 years. It is likely that this somewhat influences

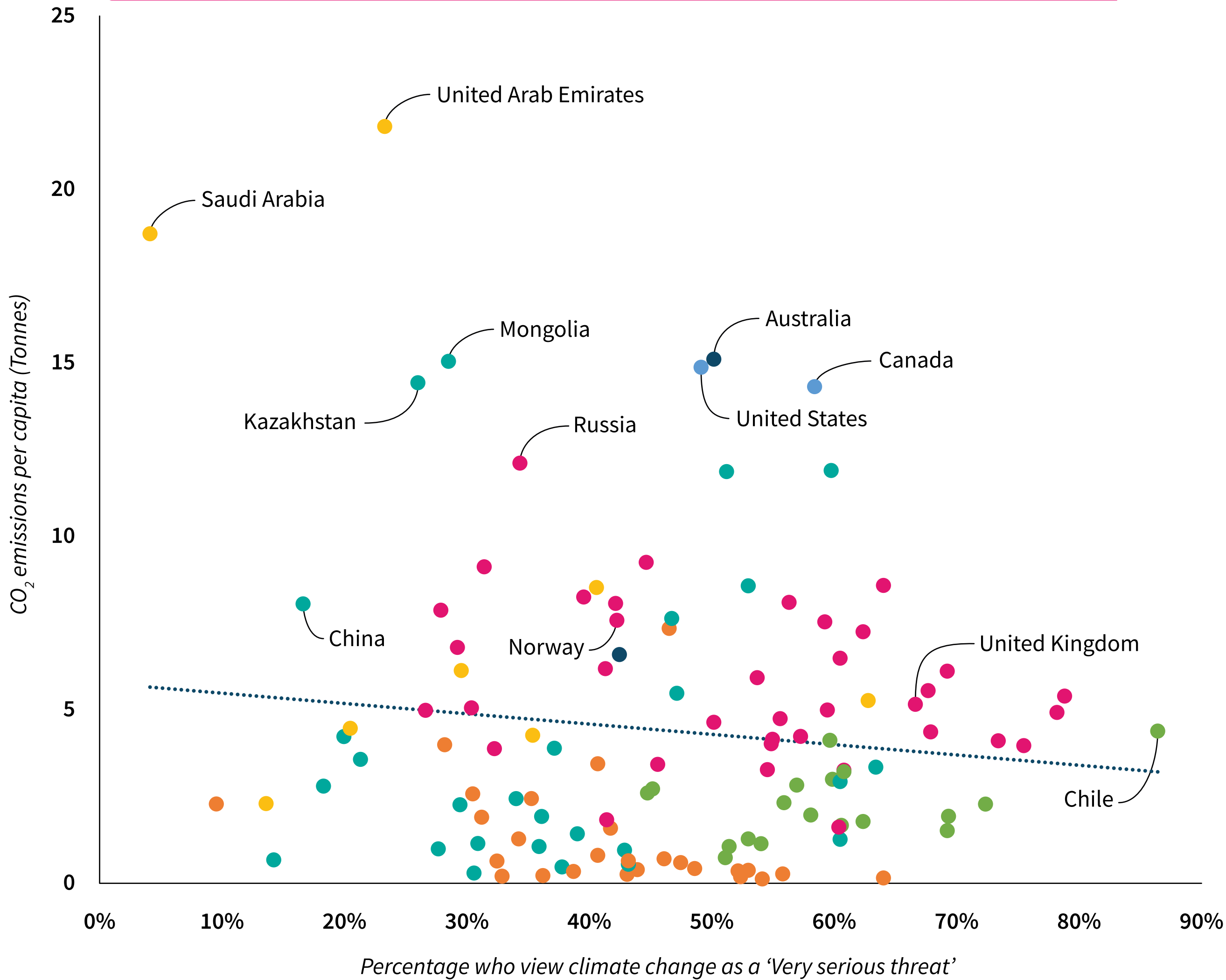
**Chart 1** Perceptions of climate change, as a risk to own country and as greatest source of risk to own personal safety



results. Focusing on people’s immediate concerns or identifying ways to link them with climate change could be a powerful tool to influence perceptions.

Recognizing and addressing these variations in perception and peoples’ other concerns that may legitimately seem more pressing is crucial to fostering broader public understanding and support for decisive action on climate change.

**Chart 2** Correlation between CO<sub>2</sub> emissions per capita and perceptions of climate change



## Identifying factors that associate with climate change perceptions can guide policy

Identifying and understanding the factors that associate with varying perceptions of climate change is crucial for shaping effective policy and communications, as it allows policymakers and campaigners to develop targeted strategies that address specific barriers, foster consensus, and engage diverse stakeholders in meaningful ways.

One potential associating factor could be CO<sub>2</sub> emissions per capita in the country in question. Public perceptions may be influenced by a sense of responsibility and guilt associated with high carbon footprints, leading to increased awareness and acceptance of the urgent need for emission reductions. On the other hand, regions heavily reliant on carbon-intensive industries may have economic concerns and resistance to adopting stricter emission regulations.

In the World Risk Poll data, we see a very slight association where countries with a higher level of CO<sub>2</sub> emissions per capita are less likely to see climate change as a ‘very serious threat’.



- Australia and New Zealand
- Europe
- Asia
- Africa
- Middle East
- Northern America
- Latin America and Caribbean

Survey question:

Do you think climate change will be a threat to the people in your country in the next 20 years?

Additional data from OurWorldInData.org<sup>1</sup>

Whilst CO<sub>2</sub> per capita corrects for population size as a metric it doesn't account for differing levels of economic development which is shown by the strong positive correlation between CO<sub>2</sub> emissions per capita and gross domestic product (GDP) per capita.

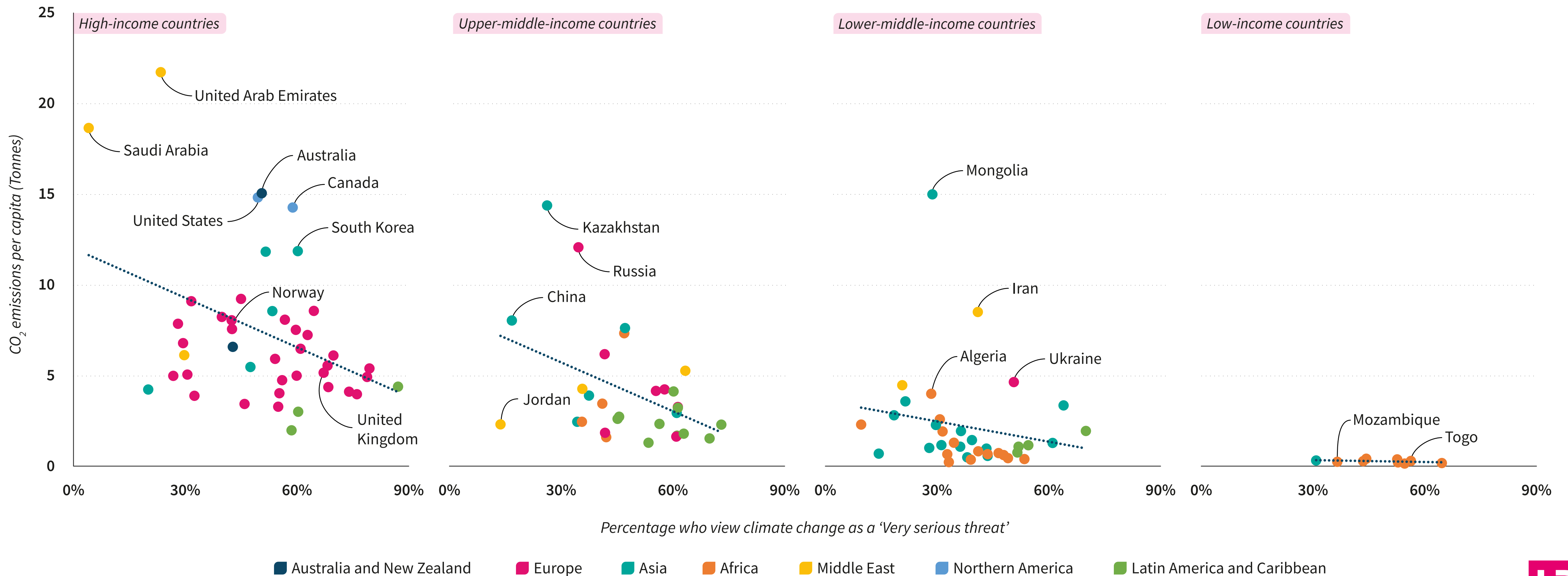
One way to address this is to split countries by their World Bank country income classification. Here we see a much stronger correlation, especially in the high and upper-middle income countries. Perhaps most interesting are the countries in the upper left quadrant of the charts – such as Saudi Arabia, the United Arab Emirates, Kazakhstan,

Mongolia, and Russia – which have both high levels of CO<sub>2</sub> emissions and low levels of climate change concern relative to their income group peers.

There is also a distinct cluster of Anglosphere countries including Australia, the United States and Canada which all display high levels of CO<sub>2</sub> emissions per capita yet have populations that are more concerned about climate change, with over 50% of people saying they view it as a 'very serious threat'.

One commonality amongst all these countries is that they have established fossil fuel industries. Could this influence how people view climate change?

**Chart 3** Correlation between CO<sub>2</sub> emissions per capita and perceptions of climate change, split by World Bank country income groupings



**Survey question:**

Do you think climate change will be a threat to the people in your country in the next 20 years?

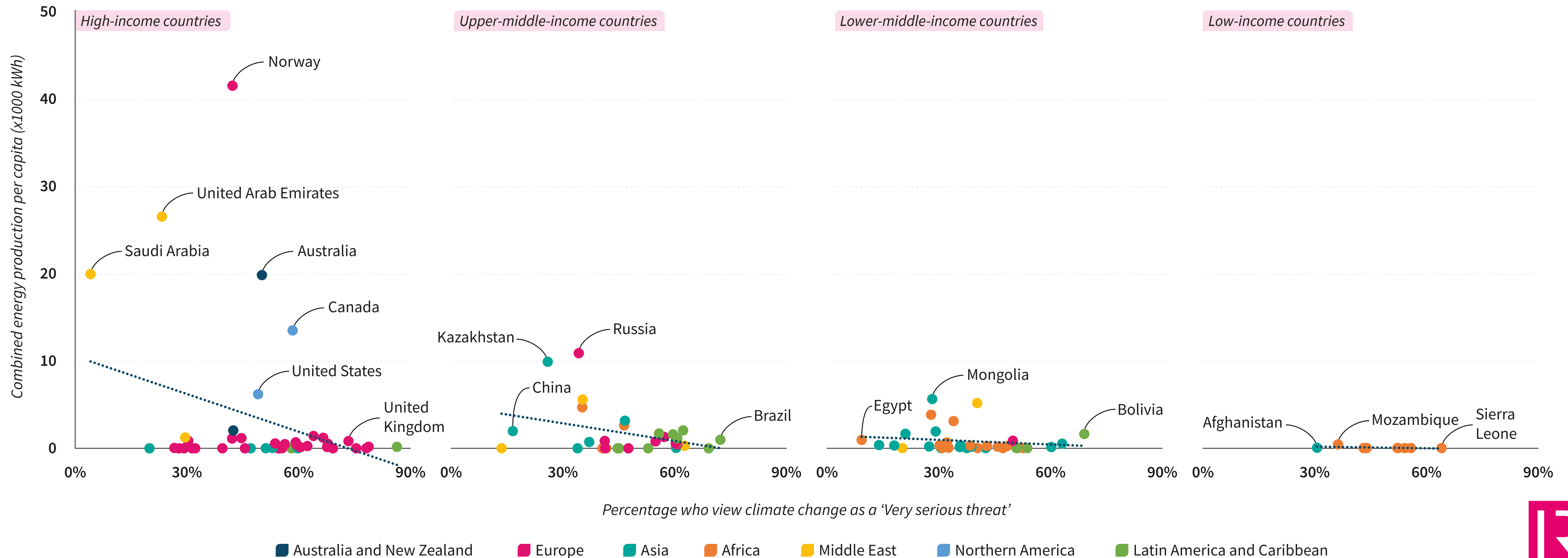
Additional data from OurWorldInData.org<sup>2</sup>

## Residents of countries that produce fossil fuels may be less concerned about climate change

If we compare the proportion of people who view climate change as a ‘very serious threat’ against combined fossil fuel-derived energy production per capita\* then most of the same countries – Saudi Arabia, the United Arab Emirates, Australia, Canada, Russia, Kazakhstan, and Mongolia – remain as outliers, with low numbers of people concerned about climate change coupled with high levels of energy production. They are joined by an additional, but quite distinct, country in Norway, a significant producer of fossil fuels which appears as an outlier in this comparison due to its low population.

\* This metric represents the energy value of extracted coal, oil and gas products per year and per capita.

**Chart 4** Correlation between combined energy production per capita and perceptions of climate change, split by World Bank country income groupings



**Survey question:**

Do you think climate change will be a threat to the people in your country in the next 20 years?

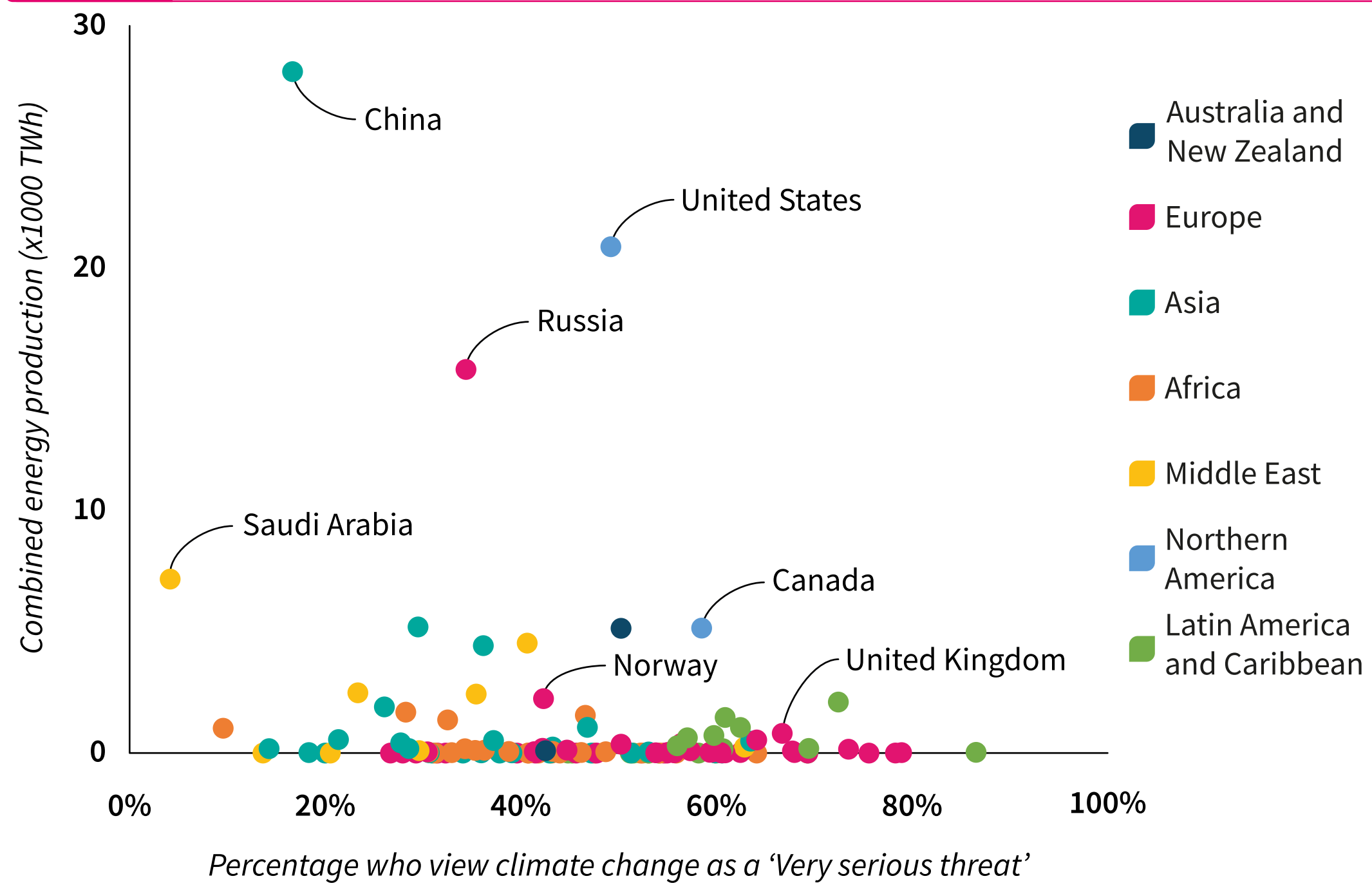
Additional data from OurWorldInData.org<sup>3</sup>

Given that this report focuses on individual perceptions, per capita views are useful for understanding the interplay between these factors; however, it is also worth taking a step back and looking at combined energy production without adjusting for population. Here China, the United States, and Russia emerge as the three biggest producers by far.

This shows the importance of global action on reducing fossil fuel production and dependency. Whilst China does not stand out in per capita measurements it is clearly a major producer of fossil fuels coupled with a population that is relatively unconcerned about climate change – only 20% of respondents viewing it as a ‘very serious threat’. Global action to influence people’s perception of climate change is much needed, but those actions should be tailored to individual circumstances.

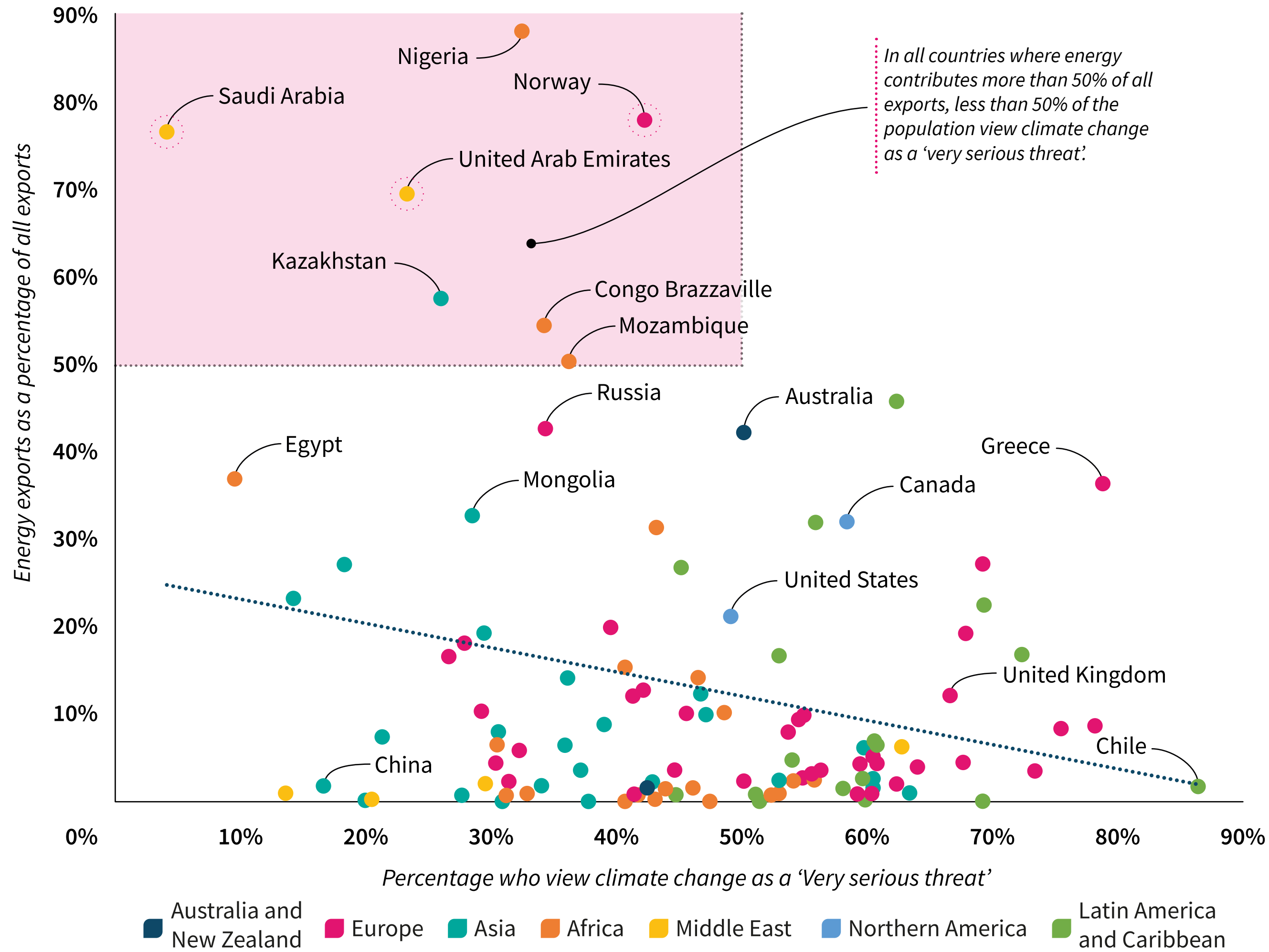


**Chart 5** Correlation between combined energy production and perceptions of climate change



*Survey question:*  
Do you think climate change will be a threat to the people in your country in the next 20 years?  
Additional data from OurWorldInData.org<sup>4</sup>

**Chart 6** Correlation between energy exports as a percentage of all exports and perceptions of climate change (top); fossil fuels as a percentage of primary (bottom)



## A dependence on fossil fuels may strongly reduce concern about climate change

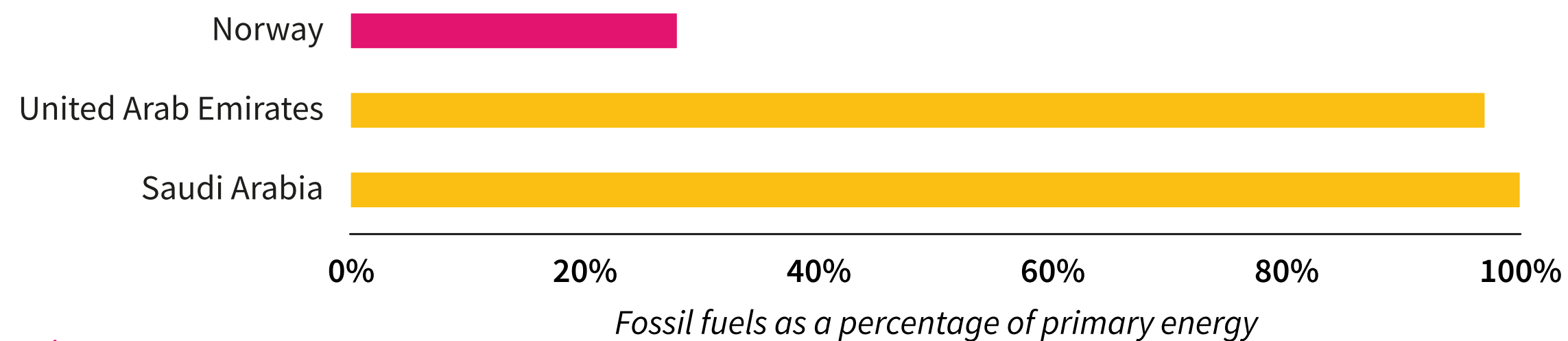
Countries can produce fossil fuels for internal use or for export. The fossil fuel industries in export-focused countries hold significant importance due to their abundant reserves and production capacities and frequently their roles as major employers. Furthermore, these countries heavily rely on fossil fuel extraction and export for their economic growth and geopolitical influence.

Comparing the proportion of country residents who view climate change as a 'very serious threat' against energy exports as a percentage of all exports\* reveals a striking finding. For all countries where energy contributes more than 50% of all exports, less than 50% of the population view climate change as a 'very serious threat'.

Within this group the variation between the three high-income countries – Saudi Arabia, the United Arab Emirates and Norway, is also of interest. All three countries have leveraged the vast wealth that their fossil fuel reserves have granted to support and improve the quality of life of their residents. So, it is perhaps unsurprising that people may feel they have a vested interest in the continued use and production of fossil fuels, which in turn may shape their perceptions of climate change. However, whilst fossil fuels and energy account for around 75% of all exports for all three countries, perception of climate change varies significantly.

Looking internally, we can see that Norway has significantly less reliance on fossil fuels to meet its own primary energy needs, at 27%, compared to 97% in the United Arab Emirates and 100% in Saudi Arabia. Indeed, Norway has the second lowest usage of fossil fuels as a proportion of primary energy generation compared to any other country.

This clearly identifies how the dual pressures of requiring fossil fuels to meet primary energy needs whilst also relying on their export to support the country economically can affect perceptions of climate change. It is perhaps not surprising that people in a country like Saudi Arabia, which is almost entirely dependent on fossil fuel for its primary energy needs, and also relies heavily on the export of fossil fuels to support its economy, may be inclined to downplay the climate impacts of the industry.



**Survey question:**

Do you think climate change will be a threat to the people in your country in the next 20 years?  
Additional data from The World Bank<sup>5</sup> and OurWorldInData.org<sup>6</sup>

\* Includes export of raw fossil fuels and their derivatives and also electricity exports. These electricity exports may also include electricity generated from renewable or nuclear sources.



In all countries where energy contributes more than **50%** of all exports, less than **50%** of the population view climate change as a ‘very serious threat’.



## Perceptions of climate change can vary within countries

As seen above, a one-size-fits-all approach to interventions encouraging a move away from fossil fuels will not work at the global level. A highly developed and diversified economy with little existing fossil fuel production infrastructure may find moving to a renewable-heavy energy production mix much easier than a country with high internal usage and a large reliance on exports.

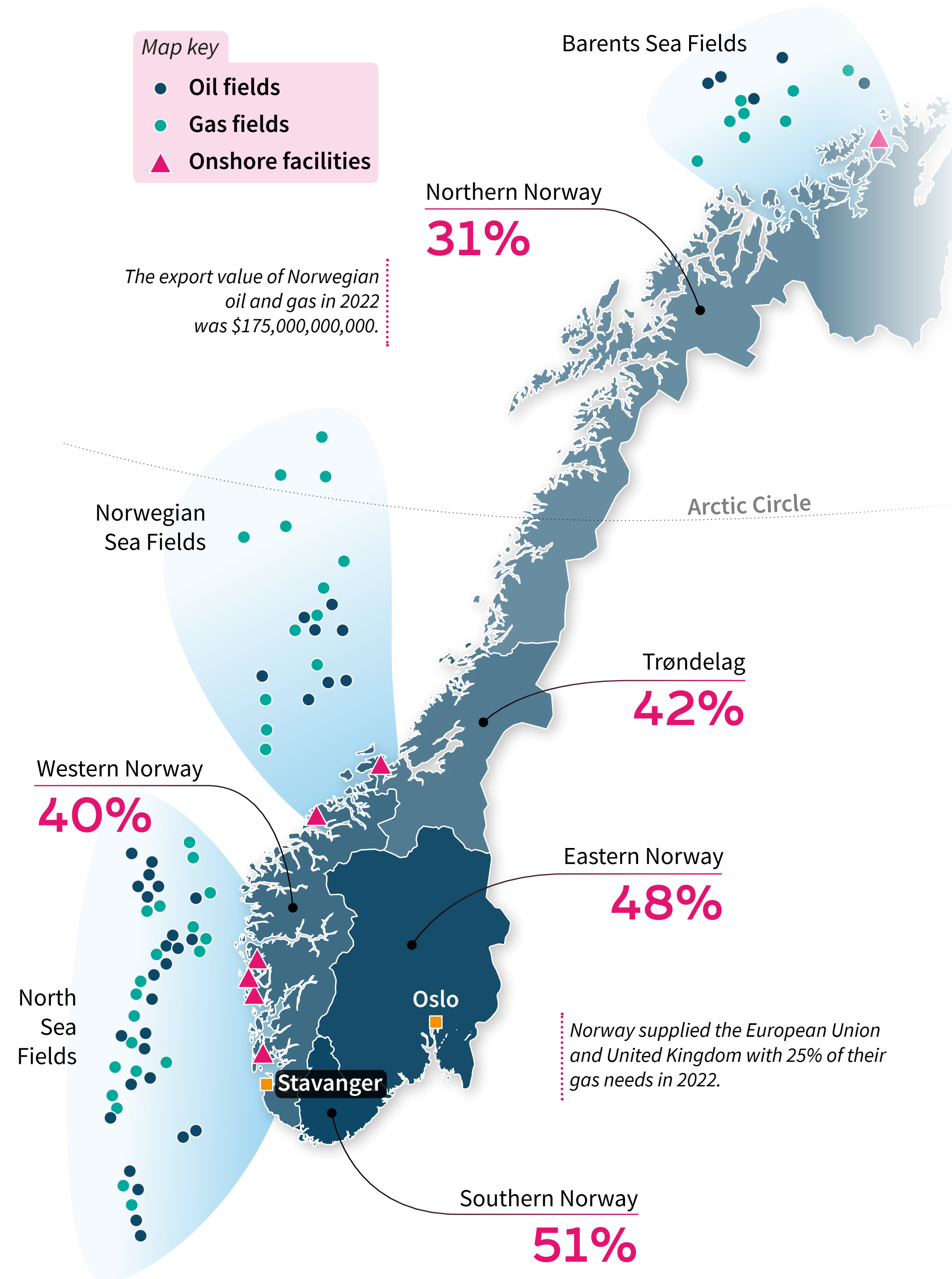
To improve action around climate change, countries need to implement bespoke interventions and communications relevant to their populations. This level of personalisation should not stop at the country level as there are often significant regional differences in climate change perceptions.

The World Risk Poll includes at least a thousand or more residents in each country it is fielded in, and uses representative sampling techniques to provide both local and global insight. This unique depth at the global level allows for regional analysis of findings which can prove powerful when combined with detailed national statistics and geographies.

Taking Norway as an example, 45% of the population view climate change as a ‘very serious threat’, and over 5% of the total workforce is employed in the oil and gas industry. If we look at the regional level, we can see that Western Norway, at 40%, and Northern Norway, at 31%, are considerably less concerned about climate change.

These findings may be explained by the locations of Norway’s oil and gas fields – located predominantly offshore of these two regions. The North Sea fields are still the powerhouse of the Norwegian oil and gas industry, being both the most thoroughly explored and

**Chart 7** Regional Norwegian perceptions of climate change, as those who stated ‘very serious threat’ and location of offshore oil and gas fields



**Survey question:**  
Do you think climate change will be a threat to the people in your country in the next 20 years?  
Locations extracted from The Norwegian Petroleum Directorate March 2023 mapping<sup>7</sup>

also most economically active region with over 70 fields in active production. This production funnels immense wealth through the ‘Oil Capital of Norway’, Stavanger, supporting a significant number of highly skilled and well paid jobs in the region. This personal dependence on the fossil fuel industry may lead people to downplay the risks of, or set aside immediate concerns about climate change.

Whilst the North Sea represents the present, the vast and untapped oil and gas fields discovered in the Barents Sea represent Norway’s petroleum future; and given Norway’s elevation as an oil and gas supplier within Europe following the economic isolation of Russia it may be a very bright future indeed.

The Norwegian government controversially lifted a moratorium on exploration in the area in 2005 and has subsequently granted licenses for exploration and production in the region with many developments based in Northern Norway. Critics including environmental groups and indigenous communities argue that pursuing oil extraction in the Barents Sea contradicts Norway’s commitments to combat climate change and transition to a low-carbon future by reducing dependence on fossil fuels. They highlight the inherent risks associated with offshore drilling, including the potential for oil spills, and the negative impacts on the highly sensitive Arctic environment and biodiversity, as well as the impact on traditional livelihoods in the region.

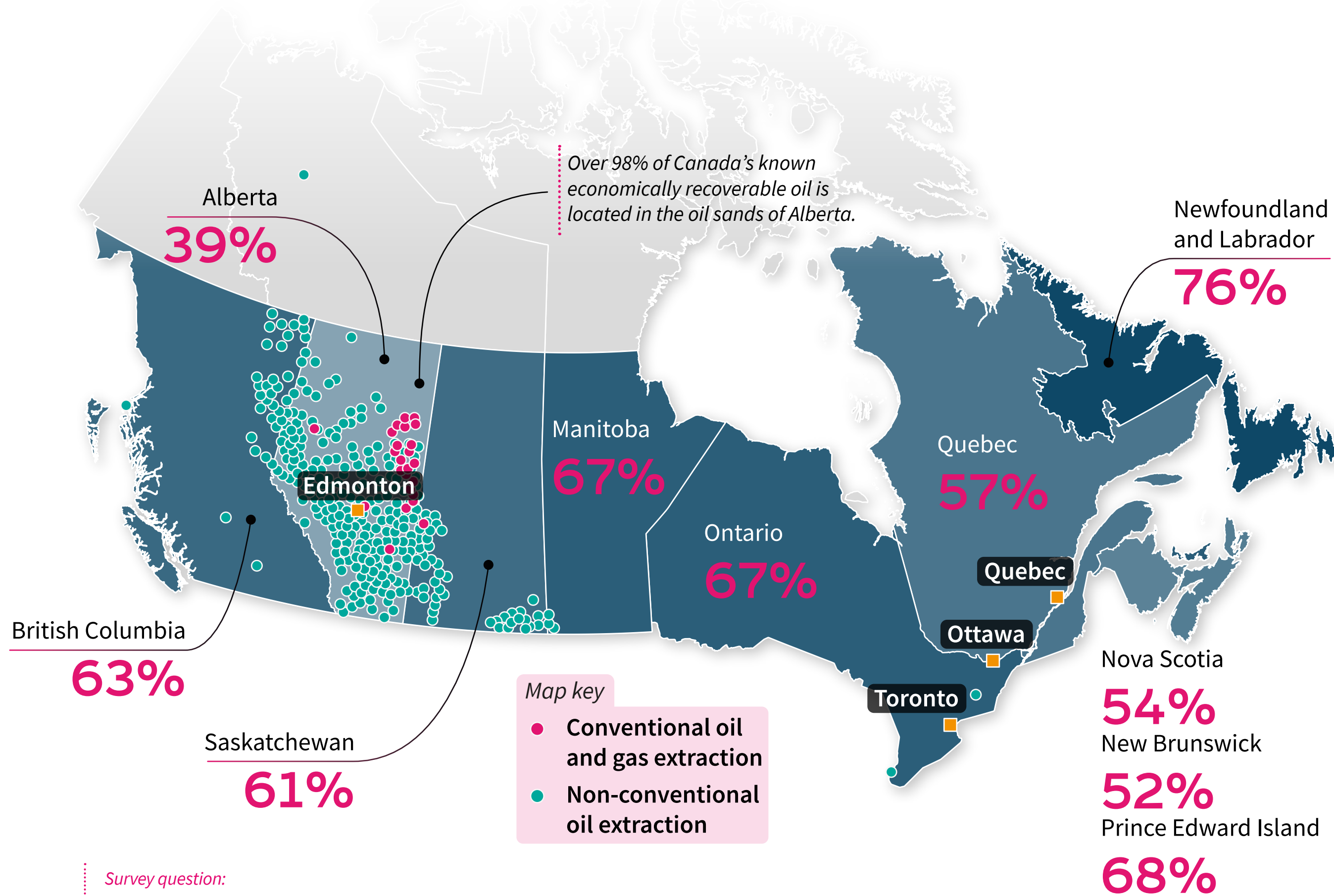
The decision to proceed with Barents oil extraction has sparked a heated debate about the trade-offs between economic development, environmental conservation, and climate action. If a high-income country like Norway struggles to resist the lure of continued fossil fuel production, this challenge is understandably even greater for less developed countries and those more dependent on fossil fuels for their own internal energy needs.

## Vested political and economic interests influence perceptions

Norway is not alone as a developed country trying to balance climate change commitments with a desire to maximise the economic returns that fossil fuels present. The situation in Canada is perhaps even more extreme than that seen in Norway.

At the national level, 61% of Canadians view climate change as a ‘very serious threat’. However, concern in Alberta is significantly lower than all other regions, with only 39% of respondents viewing climate change as a ‘very serious threat’. By a large margin, Alberta is also the Canadian province that supports the largest fossil fuel industry and is also most reliant on oil and gas revenues.

**Chart 8** Regional Canadian perceptions of climate change, as those who stated ‘very serious threat’ and location of major oil and gas facilities



Survey question:

Do you think climate change will be a threat to the people in your country in the next 20 years?

Locations extracted from Canadian National Pollutant Release Inventory showing reporting facilities for 2021<sup>8</sup>

The political situation in Alberta regarding fossil fuel extraction and its relationship with the rest of Canada is complex and often contentious. Alberta is home to vast reserves of oil sands and has historically relied heavily on the fossil fuel industry as a major economic driver. The provincial government – long led by the United Conservative Party of Alberta (UCP) – has consistently advocated for the expansion of oil and gas production, emphasizing its importance for job creation and economic prosperity. This is evidenced by Alberta’s position as the only Canadian province without a provincial sales tax, a state of affairs maintained by fossil fuel industry receipts.

However, this position has created tension with other provinces and the federal government, particularly concerning environmental concerns and climate change mitigation, with Canada targeting a 45% reduction in carbon emissions by 2030. The province’s continuing significant greenhouse gas emissions and the environmental impact of oil sands extraction put this goal at risk and have led to calls for stricter regulations and a transition towards cleaner energy sources.

This divide has been highlighted by debates over major pipeline projects, such as the Keystone XL pipeline, which aims to transport Alberta’s oil to international markets. These tensions came to a head in the 2023 provincial elections which the UCP narrowly won on the remit of fighting federal climate policies and protecting and expanding Alberta’s fossil fuel industries. Importantly, however, the main opposition party also chose not to focus on climate change as an issue, suggesting significant political reticence around these difficult discussions.

This reluctance to have difficult conversations in a public political forum may partially explain the lower concern around climate change observed in Alberta. When this lack of discourse is combined with many people having a personal stake in the fossil fuel industry, either through direct employment or via the economic benefits to the province, it is possible to see why people may discount the long-term and abstract-seeming risks of climate change.

The background to this election has been record-breaking wildfires across Canada caused by un-seasonal hot weather and lack of rain. Tens of thousands of residents have been forced to flee, and at the time of writing there is no end in sight to the disaster. Previous research using the World Risk Poll dataset has identified a clear link between experience of disasters arising from natural hazards and increased concern about climate change, and so these wildfires may be a catalyst to change perceptions in Alberta and alter the political status quo.

## Concluding remarks

While some individuals may not prioritize the safety threats posed by climate change due to a lack of awareness, understanding, or immediate perceived impact on their daily lives, many people do care about climate change and its consequences. However, challenges arise when it comes to behavioural change and reducing emissions, particularly among those who have a higher carbon footprint or whose livelihoods and quality of life are inextricably linked with the fossil fuel industry.

When coupled with political priorities shaped in a fossil fuel dependent environment, significant barriers to adopting sustainable practices and transitioning to low-carbon alternatives can arise. It is essential to engage and educate individuals and communities, address economic concerns, and provide incentives to promote widespread action and mitigate CO<sub>2</sub> emissions effectively.

As Bruine de Bruin and Dugan<sup>9</sup> discuss, there is a clear link between individuals who experience severe weather events and their perception of climate change. When people directly witness the devastating effects of extreme weather events like hurricanes, floods, or wildfires, it can serve as a wake-up call, connecting their personal experiences with the broader issue of climate change.

These first-hand encounters with the destructive power of nature often result in a heightened sense of urgency and a deeper understanding of the need to address climate change. Such experiences can reshape individuals' perceptions, leading to increased awareness, concern, and a willingness to support measures aimed at mitigating and adapting to the impacts of climate change – as long as they understand the link between the two.

## Calls to action

- The majority of people globally are concerned about more immediate threats to their safety than climate change. Addressing these every day risks may enable people to think about climate change, and increase receptiveness to climate change mitigation policies.
- Fossil fuel producing countries should make efforts to accelerate diversification. Global funders, inter-governmental-organisations and high-income countries should support the economic diversification of fossil fuel producing middle and lower-income countries.
- Governments in countries reliant on fossil fuel production, supported by relevant international agencies and sector associations, should implement transitional plans to re-skill fossil fuel industry workers for a post-carbon future.
- National and local governments should incentivize the use of renewable and other green technologies, highlighting the economic value such ventures can bring locally and nationally.
- Governments, campaigners and the media should better communicate the link between increasingly extreme weather events and climate change – especially to those who have experienced such events – to make the perception of climate change risks more tangible.

# References and endnotes

- 1 Ritchie, H. Per capita CO<sub>2</sub> emissions. (2021). [ourworldindata.org/explorers/co2](https://ourworldindata.org/explorers/co2)  
See also: Friedlingstein, P., et al. Global Carbon Budget 2022, Earth Syst. Sci. Data, 14, 4811–4900 (2022). [doi.org/10.5194/essd-14-4811-2022](https://doi.org/10.5194/essd-14-4811-2022)
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- 9 Bruine de Bruin, W., Dugan, A. On the differential correlates of climate change concerns and severe weather concerns: evidence from the World Risk Poll. Climatic Change, 171, 33 (2022). [doi.org/10.1007/s10584-022-03353-8](https://doi.org/10.1007/s10584-022-03353-8)



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