

# What is causing the winter heat wave in Europe?

At least seven countries have recorded their hottest January weather ever. These included Poland, Denmark, the Czech Republic, the Netherlands, Belarus, Lithuania and Latvia. Here is why.

Written by [Alind Chauhan](#) , Edited by Explained Desk  
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Climatologists suggested that the temperatures surged to summer or springtime levels. (AP/file)

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Several parts of Europe witnessed an unprecedented winter heat wave over New Year’s weekend, The Washington Post reported on Monday. Calling it an “extreme event”, experts said that temperatures increased 10 to 20 degrees Celsius above normal.

According to the report, at least seven countries recorded their hottest January weather ever. These included Poland, Denmark, the Czech Republic, the Netherlands, Belarus, Lithuania and Latvia.

Climatologists suggested that the temperatures surged to summer or springtime levels. For example, at Korbielów, a small village in Poland, the mercury reached 19 degree Celsius – a temperature the region is more used to in May, and 18 degree Celsius above the one degree Celsius yearly average for January, The Guardian said in its report.

Meanwhile, in parts of Belarus, where temperatures usually remain around zero degree Celsius, they peaked at 16.4 degree Celsius on January 1.

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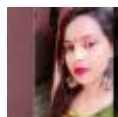
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According to The Washington Post report, the warm spell because of the formation of a heat dome over the region. [The Indian Express](#) looks at what it is and how it is formed.

### What is a heat dome?

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trapped, the more the sun works to heat the air, producing warmer conditions with every passing day. Heat domes generally stay for a few days but sometimes they can extend up to weeks, which might cause deadly heat waves.

Scientists suggest that any region of high pressure, whether a heat dome or not, forces air to sink and once it reaches the ground, it gets compressed and becomes even warmer. Moreover, when air sinks, it gets drier and further raises the temperature of the area.

### What is the relationship between heat domes and the jet stream?

The heat dome's formation is related to the behaviour of the jet stream — an area of fast-moving air high in the atmosphere. The jet stream is believed to have a wave-like pattern that keeps moving from north to south and then north again. When these waves get bigger and elongated, they move slowly and sometimes can become stationary. This is when a high-pressure system gets stuck and leads to the occurrence of a heat dome.

Although heat domes are likely to have always existed, researchers say that climate change may be making them more intense and longer. They suggest with the rising temperatures, it is expected that the jet stream will become more wavy and will have larger deviations, causing more frequent extreme heat events.

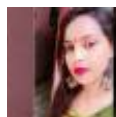
### What are some previous instances of heat domes?

In 2021, a heat dome formed over western Canada and the US, causing deadly heat waves. Portland city in Oregon, US, saw the mercury rise to 46 degree Celsius while the temperature in Washington hit 49 degree Celsius. In Lytton in British Columbia, temperatures soared to over 46 degree Celsius. hundreds of people are believed to have died d

Subsequently, a 2022 study found that this heat change and it could become a once-in-10-year event if global temperatures aren't kept under two degree Celsius above pre-industrialisation levels.

The researchers said that the dry soil — one of the repercussions of the rising temperatures — in different areas of the Pacific northwest “potentially allowed the

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