# A recent study on Heatwaves linked to carbon emissions

*Prelims: Current events of national and international importance*

## Why in news?

*Recently, a study assessing the link between carbon emissions from fossil fuel companies and heatwaves has been published.*

- **Heatwaves** - Heatwaves consist of a ***period of abnormally hot weather*** that can ***last from a few days to months,*** where the maximum and minimum temperatures are unusually high for a location.
- **Heat dome** – It is a ***weather phenomenon*** caused by a high-pressure system that traps hot air in the atmosphere over a region, similar to a lid, for an extended period, creating dangerous and prolonged heat waves.
- **Findings of the study –**
  - The study analyzed 213 heatwaves that occurred worldwide between 2000 and 2023.
  - Due to ***global warming***, heatwaves between 2000 and 2009 became about ***20 times*** more likely, and ***about 200 times*** more likely between 2010 and 2019.
  - Heatwaves between 2000 and 2009 were ***1.4 degrees Celsius hotter***, while between 2010 and 2019 were made ***1.7 degrees Celsius warmer***.

*According to a **World Meteorological Organization (WMO) report**, between 2000 and 2019, **at least 4,89,000 people died annually** from heat, many from climate change-fueled heatwaves.*

  - The data from ***EM-DAT (Emergency Events Database) and Carbon Majors Database*** are assessed to understand the link between carbon emissions from fossil fuel companies and heatwaves.
  - The heatwaves had been ***directly linked to carbon emissions*** from the world's biggest fossil fuel companies for the first time.
  - The ***emissions from any of the 14 biggest companies*** — were

***enough to cause 50 heatwaves*** that would have been impossible without climate change.
    - The total emissions from these companies and their products contributed about ***half of the increase in the intensity*** of heatwaves since pre-industrial times.
    - ***Fossil fuel and cement companies*** are not just abstract contributors to climate change, but their emissions have directly fueled heatwaves.
- **Significance of the study -** The findings could be ***used in courts as evidence*** and ***hold fossil fuel companies accountable*** for human suffering, ecosystem losses, and economic damages worldwide.

**References**


1. Indian Express | Study linking heatwaves and Carbon emissions
2. The Guardian | Carbon emissions directly linked to heatwaves



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