

# OpenWeather

**Healthy People Healthy Planet  
2024  
Daniil Mintc**





# Our Growth and Impact

**Global supplier of analytical products and complex technological solutions based on ML-powered hyperlocal high-res meteo forecasting model.**

- 10 years on the market.
- 6+ million customers worldwide.
- 100+ blue-chip companies (Google, BP, Chevron, Microsoft, Booking.com, etc.).
- Founded in 2014, headquartered in London, operating across all continents.
- 50+ personnel across 10 countries.
- 5+ billion data requests a day from 500 000+ data sources.

WE ARE A CARBON  
NEUTRAL BUSINESS



We have calculated  
and offset our total emissions

Carbon  
Neutral  
Britain

#carbonneutralbritain  
@carbonneutralbritain  
carbonneutralbritain.org

# Commitment to Sustainability

Our sustainability mission is to help  
developing cleantech trends worldwide.

Being a technological company we are  
responsible for contributing to the development  
of sustainable products and services and to  
foster green innovation.

- We are proud supporter of **WWF**.
- We are **carbon neutral** business.
- We are aiming to achieve **B-Corp** certification  
this year.



\*OpenWeather is  
thriving to achieve B  
Corp certification in  
2024- 2025





# Impact on Academia and Research

## Free Weather Data for students, researchers and meteorological enthusiasts

- Thriving community of 8,000+ learners from 500+ universities around the world.
- Complimentary access to more than £5000 worth of data.
- Research partnerships (Imperial College London, Manchester University, etc.)
- Academic Journals collaborations.

[docs.openweather.co.uk](https://docs.openweathermap.org)



# OpenWeather Product Portfolio

## B2B advanced weather service

Custom complex solutions for corporate clients

## Analytical products

Trends and analysis based on ML-powered weather model

## DEKER™ Lab

Multidimensional data storage for complex datasets

## Weather Data Collections

Portfolio of weather datasets accessible via API, bulks, maps etc.

## Industry products

AgroMonitoring, Solar Irradiance, RoadRisk, etc.

## Meteorological Service

Designed to provide tailored consultations and precise weather insights for a broad range of industries

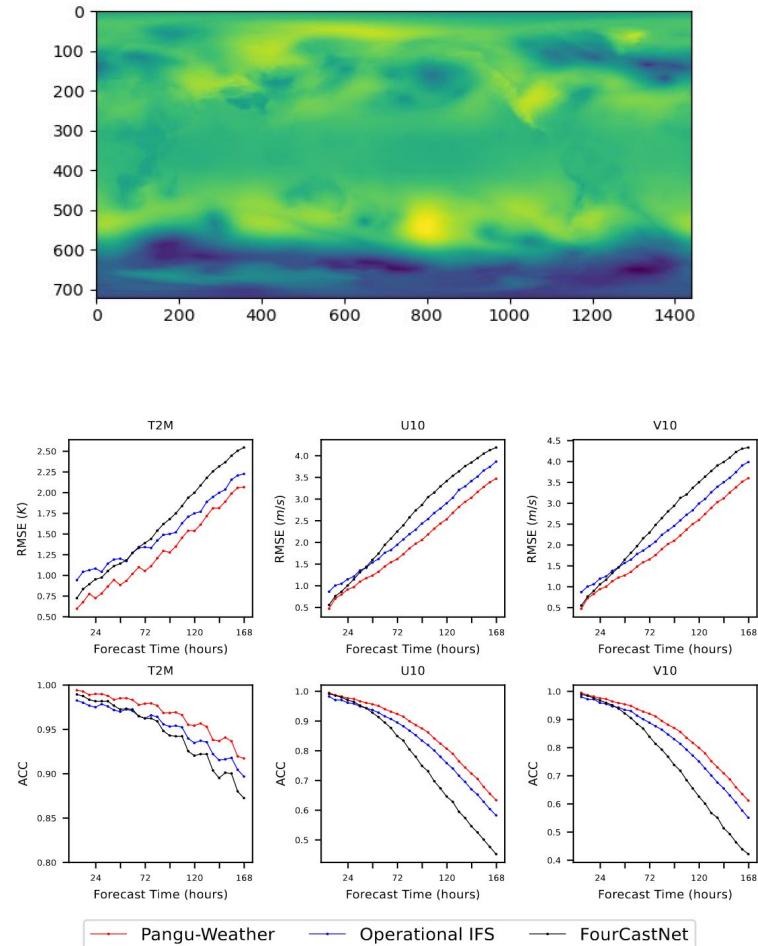
# OpenWeather Technologies



## OpenWeather HyperLocal Model (OWHL)

- Resolution from 500 meters to 2 kilometers
- Global Coverage
- Real-Time Data Processing
- High Availability & Scalability
- Data sources: radars, models from global meteorological agencies (e.g., Met Office, NOAA, ECMWF), weather satellites, and a vast network of weather stations.

# Improved Performance in Medium and Long-Term Forecasts



- Enhanced Accuracy with ViT Architectures
- Efficiency
- Environmental Benefits
- Scalability and Accessibility
- Integration and Enhanced Data Quality



# DEKER™

- Scalable storage of huge virtual arrays via tiling
- Parallel processing of virtual array tiles
- Array level metadata attributes
- Fancy data slicing using timestamps and named labels
- Support for industry standard [NumPy](#) and [Xarray](#)
- Storage level data compression and chunking(via HDF5)

# Potential for Data Application

Urban Design and Development





# Climate Impact within the Industries

- £573 million is the value of weather-related Insurance damage claims in 2024 in the UK
- $\frac{1}{3}$  of global crop yield variability occurs due to weather, affecting food systems globally
- £3bn in UK retail sales could shift due to a 1°C temperature change
- 21% of annual motor vehicle accidents are caused by hazardous weather conditions



# Healthy Cities

- Renewable Energy Mapping
- Risk Assessments and Design Considerations
- Enhancing Building Energy Efficiency
- Sustainable Development



# Renewable Energy Mapping

Our weather data and analytics serve as a vital tool for the efficient management of renewable energy sources and sustainability projects, especially under UK Carbon Transition Plan.

**Renewable Energy Projects:** Leveraging our Solar Irradiance and Solar Power Generation APIs to identify the most efficient locations and operational strategies for green energy councils

**Weather Alerts & Energy Prediction:** Extreme weather events present a considerable threat to green projects and energy assets. By utilizing Global Weather Alerts, you can proactively protect your sustainable investments, ensuring they are safeguarded during critical weather events.



# Risk Assessments and Design Considerations

**This London skyscraper can melt cars and set buildings on fire**





# Healthy People

- Addressing Extreme Weather events
- Air Pollution Monitoring and Assessment
- Research on dependence between climatic factors and wellbeing



# Adverse Weather Events

**Every year, the impact of adverse weather events intensifies.**

- Severe weather is the top global risk identified by the WEF
- The UK national record for highest daily maximum temperature of 36.7°C at Raunds, Northamptonshire, stood for almost 80 years until it was broken on 3 August 1990. It has since been surpassed three more times since the turn of the century.
- Without urgent action, UK heatwaves could claim 10,000 lives annually, harm health, increase work injuries, and cost £60 billion a year.



# Air Pollution Monitoring and Assessment

**OpenWeather data and research is vital to understand main sources of air pollution and its impact on health and wellbeing of communities**

**Accurate air quality data:** In response to the challenges posed by air pollution, we've developed the Air Quality API. This tool is designed with a particular focus on delivering timely and accurate data on air pollutants, such as **CO, NO, NO<sub>2</sub>, O<sub>3</sub>, SO<sub>2</sub>, NH<sub>3</sub> PM2.5 and PM10**.

**Governance and Decision Making:** Access to our data and analytics empowers Councils to make informed decisions about health & wellbeing and advice their communities, particularly in areas, where air quality is compromised.

A photograph of a person with dark curly hair, seen from the side and slightly from behind, working at a desk. They are wearing a light-colored hoodie and are focused on a computer monitor. The monitor displays several overlapping line graphs with blue and green colors, likely representing temperature or weather patterns over time. The background shows a window with a view of a building across a street.

# Research on Climate-Wellbeing Interdependence

- Identify dependencies between weather and well-being to enhance city living standards.
- Use research to improve city infrastructure and services during extreme weather.
- Collaboration between governments and research institutions can raise urban well-being.
- Leveraging climate data can save lives and improve health outcomes in cities.

# Remember:

*We can achieve  
more together!*