

# 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.

Make a Difference to Climate Change

WE ARE A CARBON  
NEUTRAL BUSINESS



OpenWeather

We have calculated  
and offset our total emissions



#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.



WWF  
FOR YOUR WORLD



Carbon  
Neutral  
Britain  




*\*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.openweather.co.uk)



# 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

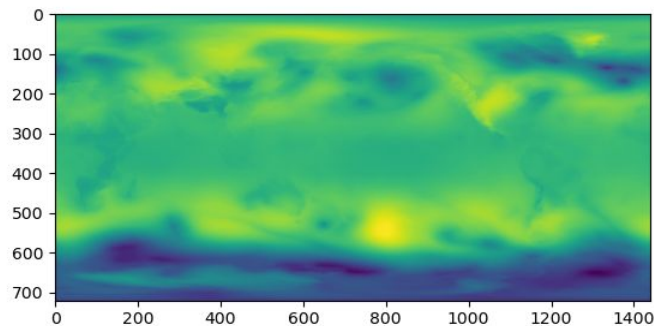




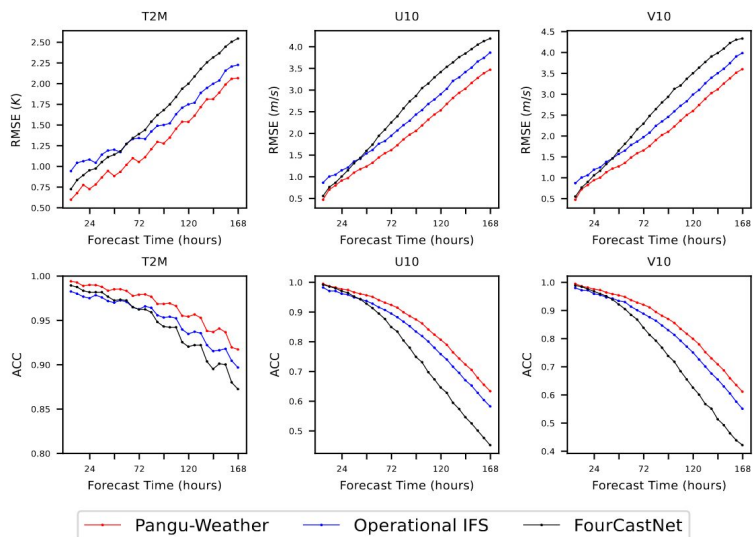
## OpenWeather HyperLocal Model (OWHL)

- 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, NO2, O3, SO2, NH3 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.**



## 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!*