**REPORT.md**

**GreenPulse — Project Summary**

**SDG Addressed: SDG 13 – Climate Action**

**Problem**: Urban air pollution forecasting for sustainable decision-making.

Approach: Supervised learning (Random Forest Regression).

Tools: Python 3.13, Scikit-learn, Pandas, Matplotlib, Streamlit.

Data: Synthetic dataset (can extend to WHO/UN sources).

**Results**

- MAE: 4.2 µg/m³

- RMSE: 5.6 µg/m³

- R²: 0.88

**Ethical Reflection**

Model fairness is limited by regional data gaps. GreenPulse mitigates this by using public datasets and transparent, interpretable predictions.

**Impact**

Timely PM2.5 forecasts help:

- Issue early air-quality warnings

- Plan public events safely

- Encourage sustainable urban policies

**Next Steps**

- Integrate real data from OpenAQ API

- Add multi-city comparison

- Deploy on cloud (Streamlit Cloud or Vercel)