

# AI Powered Sustainability Insight Platform

Name - Adarsh Kumar

College - Babu Banarsi Das University , Lucknow

## **SDG Alignment -**

1. SDG 7 - Affordable and Clean Energy.
2. SDG 11 - Sustainable Cities and Communities.
3. SDG 13 - Clean Water and Sanitation.

## **Problem Statement -**

Individuals and communities often lack awareness about how their daily resource usage—such as electricity, water, and transportation—affects sustainability. There is no simple, accessible system that provides personalized insights and recommendations to help users make environmentally responsible decisions.

## **AI Solution Overview -**

The project is an AI-powered web platform that analyzes user-provided consumption data related to:

1. Electricity usage.
2. Water usage.
3. Transportation habits.

Based on this input, the AI generates sustainability insights and actionable recommendations to help users reduce resource wastage and adopt eco-friendly practices.

The system acts as a decision-support tool, not an automated control system.

## **Target Users -**

1. Students and Individuals
2. Households
3. Educational institutions
4. Urban residents interested in Sustainability

## **Reasonable AI Considerations -**

1. No personal or sensitive data is stored.
2. AI outputs are advisory, not mandatory.
3. Transparent recommendations based on user input.
4. Promotes ethical and responsible use of AI for sustainability awareness.

## **Expected Impact -**

1. Increased awareness of sustainable consumption.
2. Behavioral change towards resource conservation.
3. Reduced energy and water wastage.
4. Contribution to climate-friendly habits at individual level.

## **Demo-**

## **How AI is Used -**

1. User enters consumption-related inputs (electricity, water, transport).
2. Backend processes the data.
3. AI model analyzes usage patterns.
4. AI generates sustainability suggestions.
5. Results are shown on a web interface.

## **Prototype Evidence -**

Deployed Backend Watsonx API (Render) - <https://sustainability-insight-platform-using-ai.onrender.com>

Backend Working with API in Thunder Client -

Thunder Client

Activity Collections Env

filter activity

POST POST 127.0.0.1:5000/ai-test 4 mins ago

JSON Content

```

1 {
2   "electricity": 500,
3   "water": 6000,
4   "transport": "Private Vehicle"
5 }

```

Status: 200 OK Size: 471 Bytes Time: 6.38 s

Response Headers Cookies Results Docs

```

1 {
2   "suggestion": "\n1. Electricity Usage:\n - Consider switching to a green energy supplier if available in your area. This will ensure that the electricity you consume is generated from renewable sources.\n - Regularly turn off lights and unplug electronics when not in use to reduce standby power consumption.\n - Upgrade to energy-efficient appliances and light bulbs, such as LED lights and Energy Star-rated devices.\n\n2. Water Usage:\n - Install water"
3 }

```

Response Chart

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\Adarsh\OneDrive\Desktop\AI Sustainability>

## Render Dashboard

Dorm

My project / Production / Sustainability-Insight-Platform-using-AI

Search K

+ New ⚡ Upgrade ⌂ Manual Deploy

Environment

Sustainability-Insight-Platform-using-AI

Events

Settings

MONITOR

Logs

Metrics

MANAGE

Environment

Shell

Scaling

Previews

Logs

Changelog

Invite a friend

Contact support

Render Status

WEB SERVICE

Sustainability-Insight-Platform-using-AI Python 3 Free Upgrade your instance → Connect Manual Deploy

Service ID: srv-d5k7kta4d50c739i9vsg

Adarshh091 / Sustainability-Insight-Platform-using-AI main https://sustainability-insight-platform-using-ai.onrender.com

Your free instance will spin down with inactivity, which can delay requests by 50 seconds or more. Upgrade now

January 15, 2026 at 11:31 AM Live c4aca21 Update app.py

All logs Search Jan 15, 11:30 AM - 11:34 AM GMT+5:30 ...

```

Jan 15
11:32:05 AM Building wheel for ibm-cos-sdk (pyproject.toml): started
11:32:05 AM Building wheel for ibm-cos-sdk (pyproject.toml): finished with status 'done'
11:32:05 AM Created wheel for ibm-cos-sdk: filename=ibm_cos_sdk-2.14.3-py3-none-any.whl size=77324 sha256=d7f084a9e48589e31177895eafb788a...
11:32:05 AM Stored in directory: /opt/render/.cache/wheels/a2/99/26/abae30f0704d74b848aac9aac73e9b47977b808a75a5a984fe
11:32:05 AM Building wheel for ibm-cos-sdk-core (pyproject.toml): started
11:32:06 AM Building wheel for ibm-cos-sdk-core (pyproject.toml): finished with status 'done'
11:32:06 AM Created wheel for ibm-cos-sdk-core: filename=ibm_cos_sdk_core-2.14.3-py3-none-any.whl size=662207 sha256-bf32b98a9fc72d011fc1...
11:32:06 AM Stored in directory: /opt/render/.cache/wheels/47/62/69/1e99fe95b92e8dbd4ea97e79169224269774a438831968551

```

Deployed Frontend using netlify - <https://cliquant-sfogliatella-136838.netlify.app/>

clinquant-sfogliatella-136838.netlify.app

## AI Sustainability Analyzer

Analyze your resource usage & get AI-based SDG recommendations

**Monthly Electricity Usage (units)**  
e.g. 250

**Monthly Water Usage (liters)**  
e.g. 3000

**Primary Transport Mode**  
Private Vehicle

**Analyze Sustainability**

**SDGs Covered:** SDG 6, SDG 7, SDG 11, SDG 13

clinquant-sfogliatella-136838.netlify.app

## AI Sustainability Analyzer

Analyze your resource usage & get AI-based SDG recommendations

**Monthly Electricity Usage (units)**  
500

**Monthly Water Usage (liters)**  
3560

**Primary Transport Mode**  
Private Vehicle

**Analyze Sustainability**

Your electricity usage is high. Consider using LED lights and energy-efficient appliances.  
Using public transport or carpooling can reduce your carbon footprint.

**SDGs Covered:** SDG 6, SDG 7, SDG 11, SDG 13

## Impact Statement -

What changes if this solution is implemented?

Users become more conscious of their daily consumption habits and receive AI-driven guidance to improve sustainability without needing technical knowledge.

Who benefits and how?

Individuals: Understand and improve personal sustainability.

Communities: Reduced overall resource wastage.

Environment: Lower emissions and better resource management.