# Technology Stack (Architecture & Stack)

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Team ID: LTVIP2025TMID32000

Project Name: Sustainable Smart City Assistant Using IBM Granite LLM

## Components & Technologies

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| **S.No** | **Component** | **Description** | **Technology** |
| 1 | User Interface | Web-based interactive dashboard for users | Streamlit |
| 2 | Application Logic | Handles summarization, eco-tip generation, anomaly detection, and KPI forecasting | Python, FastAPI |
| 3 | AI Service Layer | Prompt processing, AI-generated outputs for summarization, chat, eco-tips, and reports | IBM Watsonx Granite LLM |
| 4 | Session State | Temporary user interaction management | Streamlit Session State |
| 5 | File Storage | Policy document uploads and static file handling | Local Filesystem |
| 6 | Vector Search Layer | Semantic policy search and document retrieval | Pinecone Vector Database |
| 7 | Security | Secure handling of API keys and environment variables | .env, python-dotenv |
| 8 | Deployment | Application hosting and scalability | IBM Cloud Foundry / Localhost / Container Support |