🌍 EcoSweep – Investor Pitch Q&A

❓ What is EcoSweep?

EcoSweep is a universal cleaning robot designed to operate on multiple terrains—indoors and outdoors.

Unlike conventional cleaning robots that are limited to flat surfaces, EcoSweep integrates **terrain adaptability, robotic arm-based debris handling, and smart control via mobile app & AI navigation.**

❓ What problem does EcoSweep solve?

1. **Household & Indoor Cleaning:** Most cleaning robots can't handle dust, corners, or larger debris. EcoSweep's robotic arm picks up trash beyond just vacuuming.
2. **Outdoor/Public Spaces:** Existing robots fail on rough terrains like parks, roads, or campuses. EcoSweep is designed for multi-terrain cleaning.
3. **Labor & Time:** Reduces human dependency for repetitive cleaning tasks.
4. **Environment:** Encourages sustainable waste management by **segregating and collecting trash.**

❓ How is EcoSweep different from existing robots?

- **Terrain Adaptive:** Works indoors, outdoors, flat floors, and uneven surfaces.
- **Robotic Arm:** Can pick and place debris, unlike traditional vacuum-only robots.
- **Multi-controller System:** Arduino Mega (low-level control), Raspberry Pi (Bluetooth & AI), PCA9685 (servo driver).
- **Modular Design:** Can be upgraded with AI for autonomous navigation.
- **Custom PCB:** Neat, robust, and scalable connection design.

❓ Who are the target users/customers?

- **Households** (premium smart homes).
- **Corporates, malls, and airports** (large indoor areas).
- **Universities and campuses** (large grounds).
- **Municipal corporations** (urban cleaning, parks, footpaths).

❓ What is the market potential?

- The **global cleaning robot market** is projected to reach **$24B by 2030**, with rising demand for smart and autonomous solutions.
- Growing **urban population & sustainability focus** create a demand for EcoSweep.

❓ What's the current progress (MVP stage)?

- ✅ Hardware integrated: Arduino Mega, Raspberry Pi 4, motor drivers, sensors, robotic arm.
- ✅ Mobile app connected via Bluetooth for manual control.
- ✅ Basic robotic arm and movement logic developed.
- 🚀 Next: Full PCB integration & semi-auto cleaning.

❓ How does EcoSweep work technically?

Flow:

Mobile App → Raspberry Pi (Bluetooth SPP) → Arduino Mega (USB Serial) → Motor drivers/Servo controllers → Hardware actions.

- **Arduino Mega:** Handles low-level hardware (motors, sensors, servos).
- **Raspberry Pi:** Acts as communication hub + will later run AI-based vision & path planning.
- **Power System:** LiPo battery for motors; Li-ion with buck converter for sensors & logic boards.

❓ What are the project phases?

1. **Manual Control (Done):** Basic movement & robotic arm control via app.
2. **Semi-Auto:** Predefined cleaning paths + better PCB integration.
3. **AI-Enhanced Autonomous Mode:** Camera-based navigation, object detection, smart cleaning.

❓ What's the impact?

- Saves **time, money, and labor** for organizations.
- Promotes **smart cities & sustainable cleaning**.
- Addresses both **indoor & outdoor** cleaning, unlike most robots.

❓ What are you seeking from investors/partners?

- **Funding** for PCB manufacturing, hardware scaling, and AI integration.
- **Partnerships** with municipalities, smart city projects, and corporates.
- **Mentorship & networking** to bring EcoSweep to market.

❓ Why should anyone invest in EcoSweep?

- **Innovative Edge:** Only multi-terrain cleaning robot with robotic arm + modular AI.
- **Scalable Market:** Huge demand across households, corporates, and urban cleaning.
- **Execution Ready:** Working prototype with clear roadmap to commercialization.
- **Impactful:** Contributes to smart cities, sustainability, and labor efficiency.