YADAVINDRA PUBLIC SCHOOL, PATIALA
TENDER NOTICE
(IoT-Based Hydroponic Project – School Campus)

Yadavindra Public School, Patiala invites sealed tenders from experienced and reputed vendors/companies for the Design, Supply, Installation, Commissioning, Training, and Monitoring of an IoT-Based Hydroponic (Soilless Farming) System at the school campus.

1. Name of Work

Setting up of an IoT-Based Hydroponic Project with AI-enabled monitoring for educational and sustainability purposes at Yadavindra Public School, Patiala.

2. Scope of Work

The selected vendor shall be responsible for providing a complete turnkey solution for the IoT-Based Hydroponic Project, including design, supply, installation, commissioning, IoT–AI integration, on-campus training, monitoring, and final handover, ensuring suitability for a school educational environment.

2.1 Design, Planning & Site Preparation

- Site survey and assessment of the proposed installation area within the school campus.
- Preparation of detailed system layout, installation plan, and plant capacity design.
- Planning and coordination for water supply, drainage, electrical connections, and safety measures.
- Approval of layout and execution plan by school authorities prior to installation.

2.2 Supply & Installation of Hydroponic System

- Design, supply, and installation of hydroponic systems such as **A-frame / Vertical Tower / NFT systems.**
- Supply and installation of **nutrient tanks, water reservoirs, pumps, plumbing lines, pipes, valves, trays, and fittings.**
- Use of **food-grade, UV-resistant, corrosion-proof, and child-safe materials suitable for long-term school use.**
- Setup and commissioning for **approximately 250 plants**, with provision for future scalability.
- Electrical wiring, safety insulation, system testing, and complete commissioning.

2.3 IoT & AI Integration

- Supply and installation of **IoT controllers (NodeMCU / equivalent).**
- Integration, calibration, and testing of sensors including:
    - **pH**

    - **EC/TDS**
    - **Temperature & humidity**
    - **Water level**
    - **Light intensity**
- Deployment of a **cloud-based dashboard for real-time monitoring.**
- **AI-enabled analytics for predictive plant growth insights and system optimization.**
- Configuration of alerts and data visualization for plant health and system performance.

2.4 Planting & Nutrient Management

- Supply of healthy seedlings, growth media, and nutrient solutions.
- Initial planting of crops and preparation of nutrient solutions.
- Configuration of automated nutrient and water delivery schedules.
- AI-assisted optimization of nutrient balance and irrigation cycles.

2.5 On-Campus Staff Training

- Conduct hands-on training sessions at the school campus for teachers and designated staff.
- Training on:
    - System operation and safety protocols
    - IoT dashboard usage and data interpretation
    - Sensor readings, alerts, and troubleshooting
    - Routine maintenance procedures
- Orientation on the educational use of system data for STEM, IoT, AI, and environmental studies.
- Submission of training manuals, user guides, and technical documentation.

2.6 Monitoring & Post-Installation Support

- Initial monitoring of plant growth and overall system performance post-installation.
- Support during the stabilization period for resolving nutrient imbalance, sensor errors, or operational issues.
- Guidance for corrective actions based on real-time data and AI analytics.
- Remote and/or on-site support during the initial operational phase.

2.7 Testing, Handover & Vendor Intake

- Complete system testing and final calibration prior to handover.
- Live demonstration of the hydroponic system, IoT dashboard, and AI monitoring features to the school committee.
- Submission of:
    - *As-built drawings*

- *Warranty and compliance documents*
- *Maintenance schedules*
- *Login credentials and operating manuals*

- Joint inspection with school authorities and rectification of observations, if any.
- Final vendor inspection, formal acceptance, and issuance of handover certificate.

3. Eligibility Criteria

Vendors must:

- Have minimum 5–10 years of proven experience in hydroponics, automation, and IoT-based systems.
- Demonstrate prior experience in schools, colleges, or educational institutions.
- Provide references and technical credentials.
- Be capable of delivering end-to-end installation, training, and post-installation support.

5. Tender Submission

- Tenders must be submitted in sealed envelopes clearly marked: "Tender for IoT-Based Hydroponic Project"
- Last date of submission: 02-02-2026
- Tenders received after the due date will not be considered.

6. Evaluation & Selection

- The tender will be evaluated based on technical expertise, educational suitability, monitoring capability, training support, past experience, and financial competitiveness.
- The school reserves the right to accept or reject any or all tenders without assigning any reason.

7. Important Notes

- The project is intended as a long-term educational and sustainability initiative.
- Preference will be given to vendors offering integrated IoT, AI monitoring, staff training, and post-installation support.
- The selected vendor must ensure safe, durable, and school-appropriate materials.

Date: 28-01-2026

Place: Patiala

Headmaster

Technical Bid Evaluation Table

IoT-Based Hydroponic Project – Yadavindra Public School, Patiala

Sl. No.	Evaluation Criteria	Tender Requirement (As per NIT)	Bidder's Compliance (Yes/No)	Details / Remarks by Bidder	Evaluator's Remarks
A. Design, Planning & Site Preparation					
	System Layout & Planning	Detailed layout, installation plan & plant capacity design			
	Utility Planning	Planning for water, drainage, electrical & safety provisions			
	Approval Process	Layout & execution plan approval before installation			
B. Hydroponic System Supply & Installation					
	System Type	A-frame / Vertical Tower / NFT system			
	Plant Capacity	Setup for approx. **250 plants** with scalability provision			
	Materials Used	Food-grade, UV-resistant, corrosion-proof, child-safe materials			
	Hardware Components	Tanks, reservoirs, pumps, plumbing, trays, fittings			
	Electrical & Safety	Electrical wiring, insulation, safety & system testing			

Sl. No.	Evaluation Criteria	Tender Requirement (As per NIT)	Bidder's Compliance (Yes/No)	Details / Remarks by Bidder	Evaluator's Remarks
C. IoT & AI Integration					
	IoT Controller	NodeMCU / equivalent controller supplied & installed			
	Sensors – pH	pH sensor integration & calibration			
	Sensors – EC/TDS	EC/TDS sensor integration & calibration			
	Sensors – Climate	Temperature & humidity sensors			
	Sensors – Water Level	Water level monitoring sensor			
	Sensors – Light	Light intensity sensor			
	Cloud Dashboard	Real-time cloud-based monitoring dashboard			
	AI Analytics	AI-enabled predictive analytics & system optimization			
	Alerts & Visualization	Alerts, reports & data visualization features			
D. Planting & Nutrient Management					
	Seedlings & Media	Supply of healthy seedlings & growth media			
	Nutrient Solution	Supply & preparation of nutrient solutions			

Sl. No.	Evaluation Criteria	Tender Requirement (As per NIT)	Bidder's Compliance (Yes/No)	Details / Remarks by Bidder	Evaluator's Remarks
	Automation	Automated nutrient & water delivery scheduling			
	AI-Assisted Optimization	AI-based nutrient & irrigation optimization			
F. Training & Educational Integration					
	Staff Training	Online/Offline			
	IoT Dashboard Training	Training on dashboard usage & data interpretation			
	Maintenance Training	Routine maintenance & troubleshooting training			
	Educational Use	Orientation for STEM / IoT / AI / environmental studies			
F. Testing, Handover & Compliance					
	System Testing	Complete testing & final calibration			
	Demonstration	Live demo of hydroponic system & dashboard			
	As-Built Drawings	Submission of as-built drawings			
	Warranty & Compliance	Warranty certificates & compliance documents			
	Maintenance Schedule	Submission of maintenance schedules			

Sl. No.	Evaluation Criteria	Tender Requirement (As per NIT)	Bidder's Compliance (Yes/No)	Details / Remarks by Bidder	Evaluator's Remarks
	Credentials & Manuals	Login credentials & operating manuals			
	Joint Inspection	Joint inspection & rectification before handover			