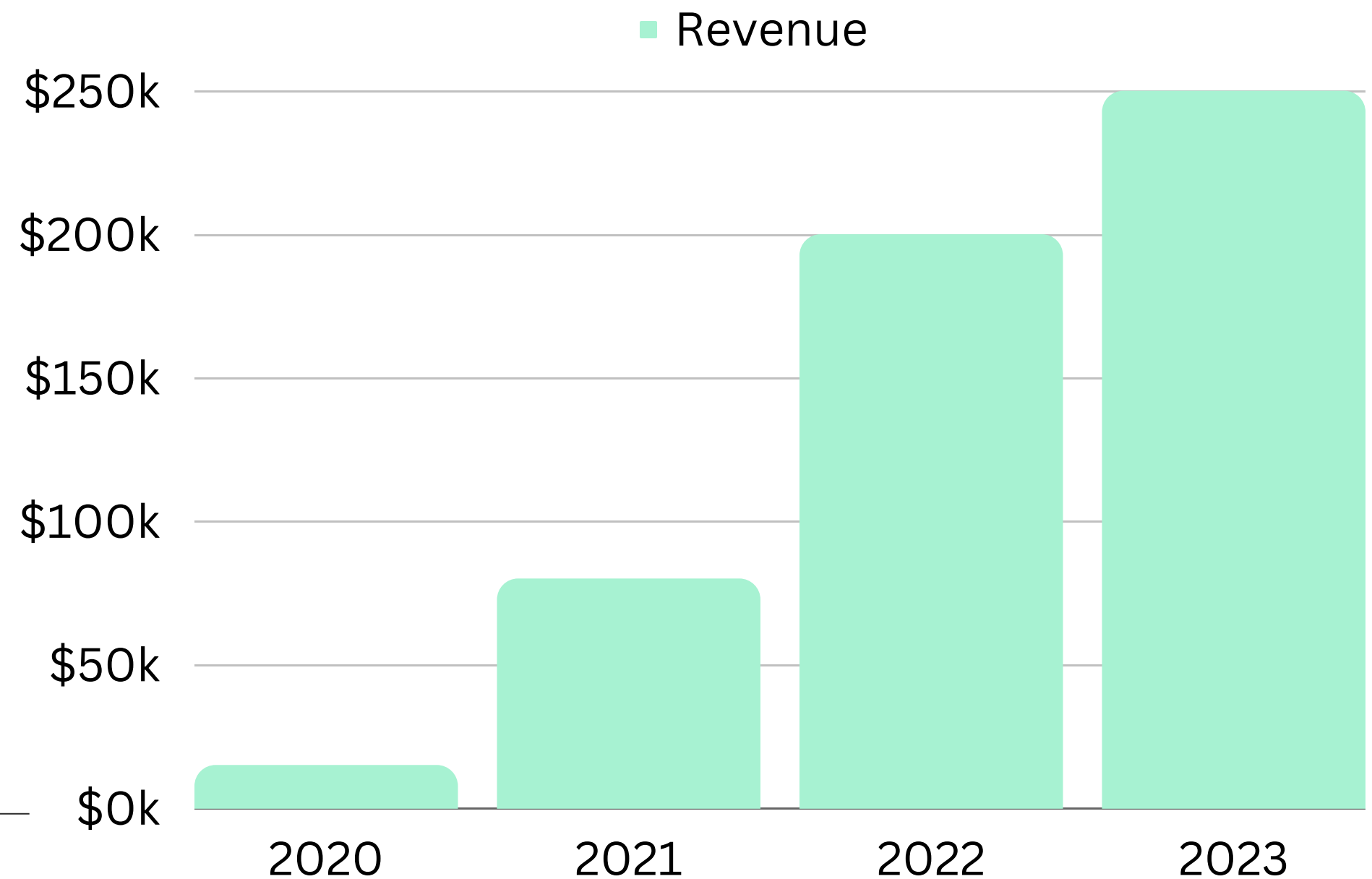

GozanLink:
Less Coal, More **Tomatoes**



What is Amudar.IO? →

Amudar.IO was founded by 2 PhDs from Inha University in 2020 to help farmers in fighting pest.

- More than **100 weather stations** installed and managed across Uzbekistan
- Clients include UNDP, WB, IFAD, Tashkent Municipality and 4 unis.
- Consists of 3 PhDs, 2 postgrads, 4 undergrads with bg in CS, EE, Agri.



Pilot in Samarkand



In November 2021, went to **5 ha greenhouse** with a proposal
Pest outbreak and plant development prediction



Ridiculed by the owner for living in la-la land!



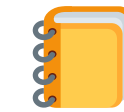
Learned about the main problem
"High heating costs and emergency management"



Pilot in Samarkand



In **a month**, designed and deployed an ad-hoc solution



Collected **two months** worth data from
4 indoor, 1 outdoor and 1 gas sensors



Discovered the key opportunity
"**18% to 30% of gas is wasted due to inefficient control of the burner**"



Energy Costs

- 1 ha gas cost per season = \$22,000
- 1 ha coal cost per season = \$37,000

Greenhouses in Central Asia:

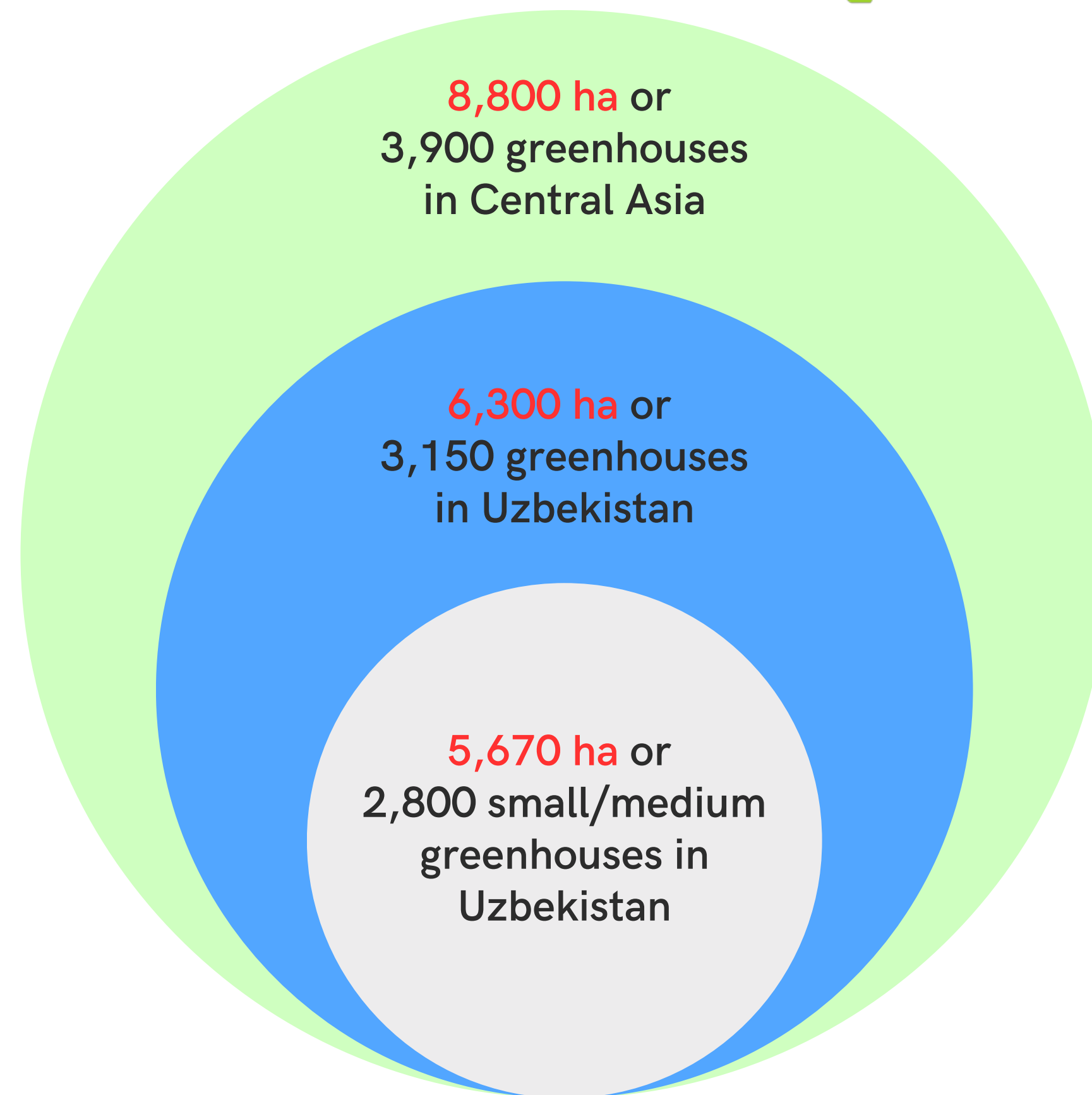
\$193 Million / \$325 Million

Greenhouses in Uzbekistan:

\$137 Million / \$233 Million

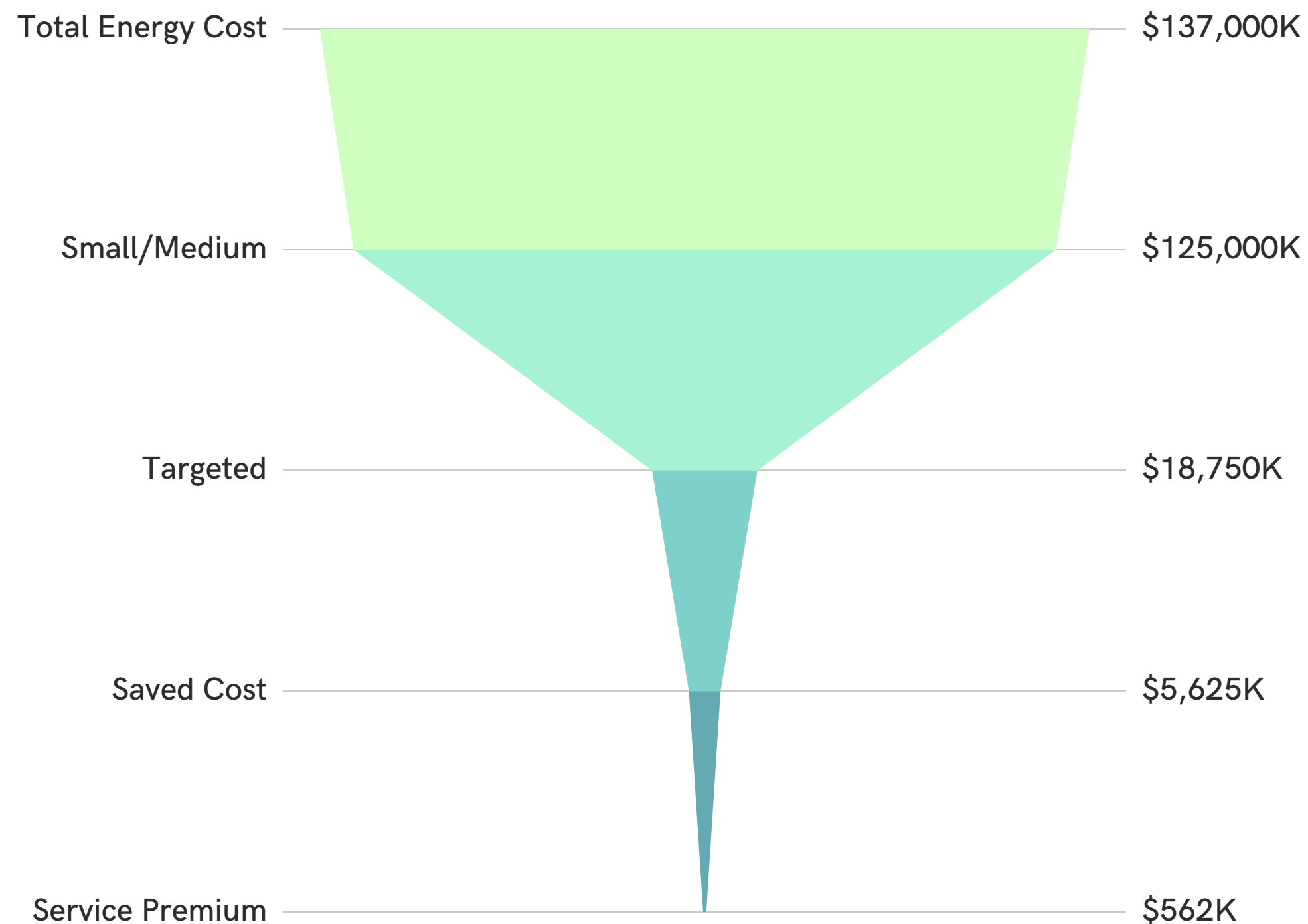
Small/Medium greenhouses in Uzbekistan:

\$125 Million / \$210 Million



Market Size

- Target **15% of small/medium** greenhouses in Uzbekistan within next 4 years
- Save upto **30% of energy costs** for them
- Take **10% of saved costs** as service premium
- It makes up SOM – **\$562,000 / \$945,000**



Competitors →

- 95% of small/medium greenhouses in Uzbekistan use products of **Chinese/Korean manufacturers**
- **No software** solution for users
- Practically impossible to maintain
- European manufacturers charge \$15k to \$25k for **unlimited software license**



Our Solution

- Compute **sensible heat loss** for a given greenhouse using outdoor/indoor climate data
 - Model the relationship between sensible heat loss and **fuel use**
 - Minimize the **fuel overuse** using the obtained model
 - Apply geo-precise weather forecast to generate an hourly **7-day schedule** for controlling the burner
-





Measuring indoor climate

Our modular units can be used for setting up an ad-hoc sensor network with multiple nodes to measure air temperature, humidity and soil parameters in different areas of the greenhouse.



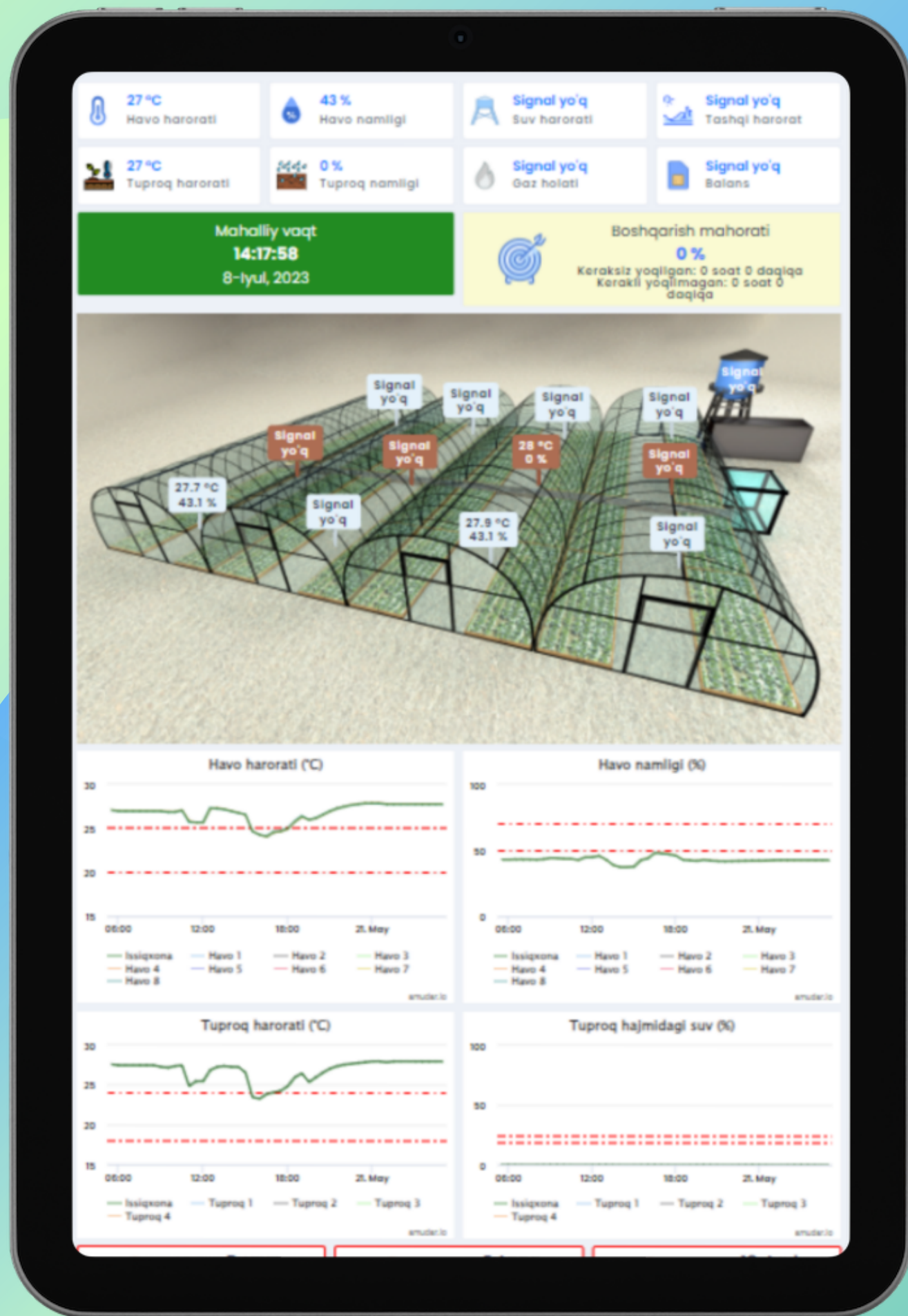
Measuring outdoor climate

Our autonomous and solar-powered weather stations can be used for monitoring the outdoor air temperature, humidity, wind and solar radiation.



Monitoring the greenhouse from mobile

Our mobile application provides all the necessary information about the greenhouse's current climate, recommends when to burn coal and shows a simple KPI for controlling the furnace. Also it notifies the user about emergencies and weather anomalies.



Monitoring the greenhouse from on-site dashboard

Our on-site dashboard provides detailed charts on greenhouse climate and furnace use along with current temperature and humidity readings. It also displays KPIs for controlling the furnace.

Revenue Model

	Basic Plan (One-off \$500, \$20/month)	Standard Plan (One-off \$4000, \$100/month)	Premium Plan (One-off \$4000, \$200/month)	Full Plan (One-off \$4000, \$500/month)
INDOOR CLIMATE MONITORING	✓	✓	✓	✓
OUTDOOR CLIMATE MONITORING	✗	✓	✓	✓
FURNACE MONITORING	✗	✓	✓	✓
PLANT AND DISEASE MODELS	✗	✗	✓	✓
AGRONOMIST CONSULTANCY	✗	✗	✗	✓

Sales Projections

	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Sales	2 x Standard 10 x Basic	1 x Premium 10 x Standard 50 x Basic	1 x Full 5 x Premium 50 x Standard 100 x Basic	5 x Full 10 x Premium 60 x Standard 150 x Basic
Total Revenue	\$ 10,400 + \$ 7,400 = \$ 17,800	\$6,400 + \$52,000 + \$37,000 = \$ 95,400	\$10,000+ \$32,000 + \$260,000 + \$74,000 = \$ 376,000	\$50,000 + \$64,000 + \$312,000 + \$111,000 = \$ 537,000
Total Cost	(Product Development) \$ 30,000	\$2,500 +\$25,000 + \$7,500 = \$ 35,000	\$16,000 + \$12,500 + \$125,000 + \$15,000 = \$ 168,500	\$32,000 + \$25,000 + \$150,000 + \$22,500 = \$ 229,500
Gross Income	- \$ 12,200	\$ 60,400	\$ 207,500	\$ 307,500

The Team →



Sarvar Abdullaev
Lead Researcher,
PhD in Computer Science



Jasurbek Khodjaev
Chief Technical Officer,
PhD in Communication Engineering



Azizbek Marakhimov
Chief Executive Office,
PhD in Industrial Management

Thank you for your time!
Reach out to us for questions.



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