Food / OQ-01

Fruit and vegetable cold stores: temperature and lot control

Storage capacity is being increased roughly 1.5-fold by 2027. If you cannot see what is happening inside the chamber, you lose product.

The store is built. Was the produce preserved?

Industry experts estimate post-harvest losses at 20–30%. Resolution PQ-136 targets cold storage capacity of 1,930 thousand tonnes by 2027. Every new chamber is another facility that needs temperature, humidity and lot control.

Conceptual architecture. No operating results are shown.

01 Receiving	Lot · Farmer · Quality
02 Storage	Temperature · Humidity · Chamber
03 Equipment	Compressor · Energy · Faults
04 Dispatch	Lot · Shelf life · Documents

At a glance

20–30% — Industry expert estimate: post-harvest losses. [1]

1,930 thousand t — Cold storage capacity target for 2027 (PQ-136). [2]

2,011 — Operating cold stores (expert data). [1]

November 2026

01 Evidence and context

Who it is for

Store owner	Losses and revenue.
Export manager	Quality and shelf life.
Technician	Refrigeration equipment.
Accounting	Lot accounting.

Facts and global practice

Industry experts (uzdaily.uz)

The country has 2,011 cold stores with a total capacity of 1.14 million t, covering 4.9% of the fruit and vegetable harvest. [1]

Industry experts (uzdaily.uz)

Only 10–15% of the harvest is processed; post-harvest losses are estimated at 20–30%. [1]

trade.gov

PQ-136: increase cold storage capacity from 1,306 thousand t in 2024 to 1,930 thousand t in 2027. [2]

Statistics on temperature deviations by chamber are not publicly available; they will be measured during the pilot.

02 Where the losses occur

Manual temperature logging

Chamber temperature is recorded once or twice a day.

Humidity and gas

Humidity and ethylene are not monitored.

Lot location

The system does not show which lot is in which chamber.

Equipment failure

A refrigeration unit stoppage is detected late.

How the loss is calculated

Spoiled produce	tonnes × price per tonne
Grade downgrade	tonnes × price difference per tonne
Energy	kWh × tariff per kWh
Contract penalties	rejected shipments

Illustrative calculations; establish the baseline, units and rates during the site assessment. Avoid counting the same loss twice.

Chamber, lot and temperature on one dashboard

Temperature and humidity sensors in every chamber, refrigeration equipment status and lot accounting in one system, with immediate alerts on any deviation.

01 Receiving

Lot · Farmer · Quality

02 Storage

Temperature · Humidity · Chamber

03 Equipment

Compressor · Energy · Faults

04 Dispatch

Lot · Shelf life · Documents

Modules

Temperature and humidity sensors	Per chamber	Engineering capability
Refrigeration equipment monitoring	Power and status	Engineering capability
Lot and location accounting (WMS)	Per chamber	Commercially available
Telegram alerts	On deviation	Engineering capability

Each module has a readiness status. Third-party results are not a forecast for your site.

04 Implementation and measurement

01 Audit

Chambers and processes.

Output: risk map.

02 Pilot

2 chambers, 1 season.

Output: temperature history.

03 Scale-up

All chambers.

Output: full control.

04 Subscription

Monthly report.

Output: loss trend.

What is measured

Temperature deviation	Hours	Sensor
Losses	Tonnes	WMS
Energy	kWh/t	Meter
Equipment stoppages	Incidents	Monitoring

What is needed to start

- Store owner
- Chamber layout
- Equipment list
- Lot records

05 Readiness checklist and next step

01 Is temperature recorded continuously in every chamber?	Yes / No / Unknown
02 Is humidity measured?	Yes / No / Unknown
03 Is a responsible person assigned to receive deviation alerts?	Yes / No / Unknown
04 Is lot location recorded in the system?	Yes / No / Unknown
05 Is compressor status visible?	Yes / No / Unknown
06 Is energy consumption measured per chamber?	Yes / No / Unknown
07 Are losses calculated per lot?	Yes / No / Unknown
08 Is there a report for the exporter?	Yes / No / Unknown
09 Are the sensors calibrated?	Yes / No / Unknown
10 Is a responsible person assigned?	Yes / No / Unknown

What we do not promise

• Exact timeline and price without an audit

• Certificate or inspection result

• Guarantee of export approval

• Unmeasured results

Cold storage audit

We review chambers, temperatures and lots and show where losses occur.

• Map of failure points

• Pilot plan

• Implementation fee and monthly subscription

Scope, price and schedule are agreed after reviewing the site and its data.

06 Sources and scope

[1] Industry experts: 2,011 cold stores, 1.14 million t capacity; covering 4.9% of produce; post-harvest losses 20–30%; 10–15% processed. uzdaily.uz (via freshplaza.com).

uzdaily.uz

freshplaza.com

[2] PQ-136 (April 2025): cold storage capacity 1,306 thousand t (2024) → 1,930 thousand t (2027); processing 3,488 → 4,480 thousand t. trade.gov, Uzbekistan Country Commercial Guide.

trade.gov

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The Endurance Industrial Technologies LLC · MT-OQ-01-EN · 11.2026