Water and beverages / WB-07

Filling Line Efficiency (OEE)

Measuring where line time is lost across availability, performance and quality.

The line is running. But how well?

According to an international benchmarking study, PET lines average around 50% OEE. We found no public data on lines in Uzbekistan. Each plant needs to measure this itself.

Conceptual architecture. No operating results are shown.

01 Signals	Running or stopped · Unit counter · Rejects
02 Operator	Reason code · Format changeover · Comment
03 Calculation	Availability · Performance · Quality
04 Analysis	Top 5 reasons · Shift and format · Trend

At a glance

50% — Average OEE of PET lines, according to an international study. 33 companies, 2024. [1]

84% — Average availability of PET lines, according to the same study. [1]

0.7–0.8 million — Daily output of a large water producer, in units. According to the company, demand exceeds this. [2]

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Who it is for

Production Director	Where line time is going.
Chief Mechanic	Breakdowns and recovery time.
Process Engineer	Format and product changeovers.
Plant Owner	New capacity or the existing line.

Facts and global practice

Lineview, 33 food and beverage companies, 2024 data

PET lines: OEE 50%, availability 84%, efficiency 59%. [1]

Same study

Across the 6 line types reviewed in the study, OEE ranged from 42% to 64%. [1]

Technical Director, large water producer, 2025

The plant produces 700,000–800,000 units of water per day but cannot fully meet orders; a third line is under construction. [2]

Soft drink and water producer

After the introduction of product marking, line efficiency dropped "in practice by more than 20%". [3]

OEE = availability × performance × quality. The figure depends on the measurement method; different plants can be compared only when measured the same way.

02 Where the losses occur

Availability: downtime

Breakdowns, format changeovers, cleaning and waiting for raw materials. Often not recorded or recorded approximately.

Performance: slow running

The line runs, but below nominal speed. Minor stops are also hidden here.

Quality: rejects

Reworked or discarded product. Line time was spent, but there is no product.

Paper reports

Figures written at the end of a shift do not show actual downtime.

How the loss is calculated

Availability loss	downtime (min) × nominal rate (units/min) × margin per unit
Performance loss	(nominal – actual rate, units/min) × run time (min) × margin per unit
Quality loss	rejected units × unit cost
In peak season	lost units × margin per unit in periods when demand exists

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

03 Solution architecture

Measuring line time

Line signals are collected automatically; the operator only selects the stop reason. Results are visible without waiting for the shift to end.

01 Signals

Running or stopped · Unit counter · Rejects

02 Operator

Reason code · Format changeover · Comment

03 Calculation

Availability · Performance · Quality

04 Analysis

Top 5 reasons · Shift and format · Trend

Modules

Line signal collection	Running status and unit counters	Engineering capability
Operator panel	Stop reason, format changeover	Engineering capability
OEE calculation and reports	Availability, performance, quality, reasons	Engineering capability

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

04 Implementation and measurement

01 Baseline measurement

Signals are collected on one line for several weeks.

Output: actual OEE and main reasons.

02 Root cause analysis

Actions are selected for the largest losses.

Output: action plan.

03 Actions

Format changeover, preventive maintenance, adjustment.

Output: OEE is measured again.

04 Scale-up

Remaining lines are connected.

Output: plant-wide metrics.

What is measured

OEE	Availability × performance × quality	OEE module
Downtime	Minutes by reason	Operator panel
Format changeover	From last good unit to first good unit	Line signals
Rejects	Rejects / total	Line counter
Minor stops	Count and total duration	Line signals

What is needed to start

- Person responsible for the line
- Line layout and nominal speeds
- Ability to connect to signals
- Training time for operators

05 Readiness checklist and next step

01 Is OEE measured for each line?	Yes / No / Unknown
02 Are stops recorded automatically?	Yes / No / Unknown
03 Does the operator select the stop reason?	Yes / No / Unknown
04 Are the top 5 stop reasons known?	Yes / No / Unknown
05 Is format changeover time measured?	Yes / No / Unknown
06 Are minor stops accounted for?	Yes / No / Unknown
07 Are rejects calculated per line?	Yes / No / Unknown
08 Are shifts compared with each other?	Yes / No / Unknown
09 Are line metrics visible during the shift?	Yes / No / Unknown
10 Is there a person responsible for line efficiency?	Yes / No / Unknown

What we do not promise

- Exact timeline and price without an audit
- Government decisions and deadlines
- Changes to line software without the equipment supplier's approval
- Unmeasured results or savings
- Achieving a specific OEE level

Line efficiency measurement

We measure actual OEE and the main loss reasons on one line.

- Actual OEE
- Stop reason ranking
- Action plan

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

06 Sources and scope

[1] Lineview Global Benchmarking Report, food and beverage manufacturing, 2024 data. lineview.com, 2025.

lineview.com

[2] Technical Director, large water producer. kun.uz, 19.09.2025.

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[3] Statements by producers and UzBev. gazeta.uz, 15.04.2026.

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