



Case story

Consistency at scale for carbonated soft drinks

How one bottler turned consistent
quality into a competitive advantage,
while scaling production tenfold.

THE CHALLENGE

How can we produce more – while improving the reliability of our production output and reducing our production cost for every litre?

A carbonated soft drink producer and bottler operating in one of the world's fastest-growing beverage markets came to us with the ambition to capture 30% of a market estimated at four million hectolitres. They set out to expand production capacity and simultaneously improve the reliability of production and consistency of the quality of every litre they produce. Starting from a single production line running at 18,000 bottles per hour, the company needed to expand to three lines as part of joining a major brand's bottler system. But the existing syrup preparation process posed a significant constraint. Operators manually poured concentrate into batch mixers, then pumped the mix to a final holding tank which made for a slow, labour-intensive and error-prone process. Frequent maintenance issues with the existing batch mixers compounded the problem, limiting output reliability and consistency. Furthermore, sugar was dissolved in a high-energy process with long heating times, adding cost and complexity to every production cycle.



The ambition was not just to produce more – but also to produce more reliably, with consistent quality at that scale – giving them a critical differentiator for capturing market share from competitors. Our solution gave them the processing foundation to do both simultaneously.

THE RESULTS



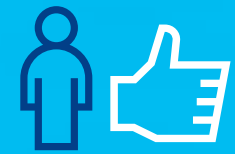
10x
10x more production capacity

€ 67,750

Up to €67,750 saved annually
Cut sugar dissolving costs with hydraulic conveying and cold dissolving



50-70%
Faster batches – total batch time reduced by 50-70%



Significantly reduce the risk for human error in syrup preparation



100%
100% of batches meet Brix and mixing quality specifications



50%
Faster flavour changes – reduced cleaning time by 50%

See the solutions behind the savings on the next page. >

THE SOLUTION

Eliminate manual handling, secure consistent syrup quality

The new installation converted the conventional manual batch process to an automated, modular batch dissolving and mixing system. Built around the **Tetra Pak® Preparation System B-ES**, the complete final syrup preparation unit delivers reliable performance and flexibly serves three individual production lines.



10x more production capacity and greater flexibility

Two modular batching systems – one with two 16,000-litre mixing tanks, one with two 21,000-litre mixing tanks – are each dedicated to a bottling line with the flexibility to interchange as production demands. The solution achieves a tenfold capacity increase – from 5,400 to 55,800 litres per hour – with three lines instead of one.¹



Cut sugar dissolving costs by up to €67,750, 50-70% faster total batch times

Hydraulic conveying of sugar from the storage silo to the dissolver, and a dissolving temperature of 40°C for a 65°Brix sugar solution is made possible by our **Tetra Pak® Radial Jet Mixer** and injector technologies. Compared to a conventional solution utilising pneumatic conveying and dissolving at 50°C, our solution reduces the cost of this process by up to €67,750 per year. And because the technology drives faster, more efficient dissolving, it also reduces processing times – strengthening throughput and lowering cost per litre produced.²



Risk of human error significantly reduced in syrup preparation

Automated sugar feeding directly injects concentrate, replacing manual pouring and significantly reducing the risk of human error in the syrup preparation process. A central control and automation system provides full process oversight across the syrup room, reducing operator dependency and delivering real-time production visibility.



Guaranteed quality³ on every batch

Advanced mixing technology and automatic Brix control ensure consistent product specification with an in-line refractometer that monitors and controls sugar solution quality continuously.



Reduced downtime for flavour changes by 50% with dual cleaning circuits

Dual cleaning circuits enable simultaneous cleaning of the syrup room and production line, cutting time between flavour changes and cleaning.

1. Based on a customer installation using two modular batching systems – Tetra Pak® Preparation Systems B-ES (2 × 16,000-litre and 2 × 21,000-litre mixing tanks) – dedicated to three individual bottling lines, one producing 5,400 litres/hour (300 ml PET at 18,000 bottles/hour), one producing 14,400 litres/hour (600 ml glass at 24,000 bottle/hour) and one producing 36,000 litres/hour (1 litre PET). This achieves a capacity increase from 5,400 to 55,800 litres per hour across the three lines.
2. Savings based on a Tetra Pak® Sugar Dissolver and hydraulic conveying with an annual operating cost of €51,500 vs. a low efficiency dissolver and pneumatic conveying with an annual operating cost of €119,250. Sugar transport distance of 15 metres from storage to dissolving tank. Pneumatic conveying includes blower, receiving equipment and transfer piping. Sugar solution: 65°Brix; Production flow: 7,000 litres/hour; 20 hours/day; 300 days/year. Electricity cost: €0.15/kWh, 16 hours/working day, 300 days of production. Steam: €0.033/kg; Refrigeration media: €400/tonne. Reduction in total batch time is compared to the customer's previous manual batch process based on the combined effect of cold sugar dissolving, reduced mixing time compared to conventional agitators, and automated batch sequencing.
3. Quality is guaranteed within the specifications of the products – 100% of batches meet Brix and mixing quality specifications.

Want to learn more about how we help you turn consistent quality into a competitive advantage, while scaling production capacity?

Get in touch with us today