



Why Your Gigafactory Pays More for Water Than It Should — and How to Fix It

Water Flow Innovations LLC

Flow Conditioning Device (FCD)
waterflowinnovations.com

Your DI water systems, formation cooling, and dry room HVAC all draw from the same supply — but your meter counts more than arrives. **DI cycling, formation cooling, and dry room humidification create the conditions for air, gas, and turbulence to form in the line at your meter — and you're billed for it.** The FCD (Flow Conditioning Device) corrects that at the municipal meter — ahead of every process system. Cell chemistry stays the same. Your water bill drops — and so does your sewer bill, because sewer charges are calculated from the same inflated meter reading. One device. Two bills fixed.

WHY GIGAFACTORY WATER METERS OVER-READ

The Core Problem: The FCD Corrects the Flow at the Municipal Meter — Ahead of Every Process Water, DI, and Cooling System

Gigafactory process water — slurry mixing, NMP recovery cooling, cell formation, and dry room HVAC — is all controlled downstream of the municipal supply meter. The FCD installs at the raw municipal meter before water enters any process system, correcting total intake without touching any cell chemistry specification, formation protocol, or ISO 9001 parameter. Only billing accuracy changes.

THE THREE OVER-READING SOURCES UNIQUE TO LITHIUM-ION GIGAFACTORIES

DI Water System Cycling

Deionized water system pump startups for electrode slurry mixing and cell washing create sudden high-velocity demand events — generating air, gas, and turbulence at the supply meter on every DI activation throughout every production shift.

Formation Cooling Water Cycling

Cell formation and aging room cooling water cycling with formation load creates continuous variable high-velocity demand — generating air, gas, and turbulence at the supply meter throughout every formation cycle across every production line.

Dry Room Humidification Control

Dry room ultra-low humidity HVAC systems cycling with production area dew point control create variable demand events — adding a third compounding over-reading source throughout every operating day and billing cycle.

Your Water Intensity Per kWh of Cell Capacity Is Better Than Your Meter Shows

EV OEM scorecards (Tesla, GM Ultium, Ford, Stellantis) and gigafactory ESG disclosures track water intensity per kWh of battery capacity produced. When the meter over-reads DI and formation cooling demand, every figure is inflated. After FCD installation, metered intake reflects true use — improving the accuracy of water intensity per kWh, CDP water disclosure, and IRA domestic manufacturing compliance documentation without changing any process parameter.

BEFORE & AFTER THE FCD

WITHOUT FCD

- ✗ Air, gas & turbulence billed as water volume
- ✗ DI system cycling inflates meter each shift
- ✗ Formation cooling compounds over-reading
- ✗ Water intensity per kWh overstated
- ✗ Sewer charge tied to inflated meter

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WITH FCD INSTALLED

- ✓ Metered volume reflects water actually delivered
- ✓ DI system demand reads accurately
- ✓ Formation cooling measured correctly
- ✓ True water intensity per kWh revealed
- ✓ Sewer charge based on real usage

5–30%

Average water & sewer bill reduction

46%

Highest documented single-site reduction

~1 Hour

Install time — water off about 1 hour

6-Mo

Money-back, no questions asked · install non-refundable

How the FCD Works — Four Steps

1

Installs between two pipe joints right after your water meter — water off about one hour

2

Creates a slight back-pressure that extends back through the meter, reducing air, gas, and turbulence

3

Delivers a laminar-like flow profile through the meter — the condition it was calibrated to read

4

Meter reads accurately. Bill drops. Every cell chemistry specification, formation protocol, DI quality parameter, and dry room condition is effectively unchanged.