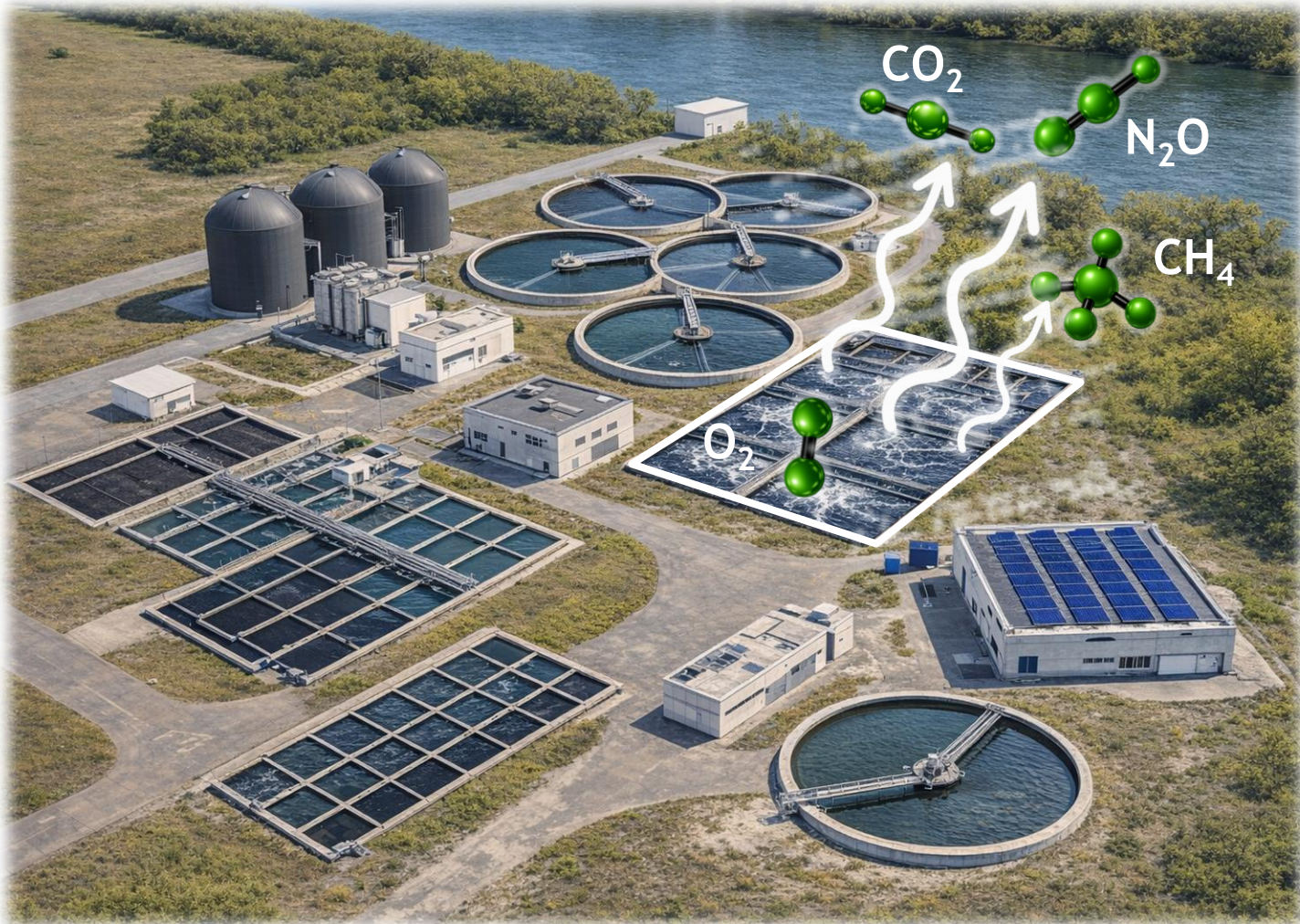




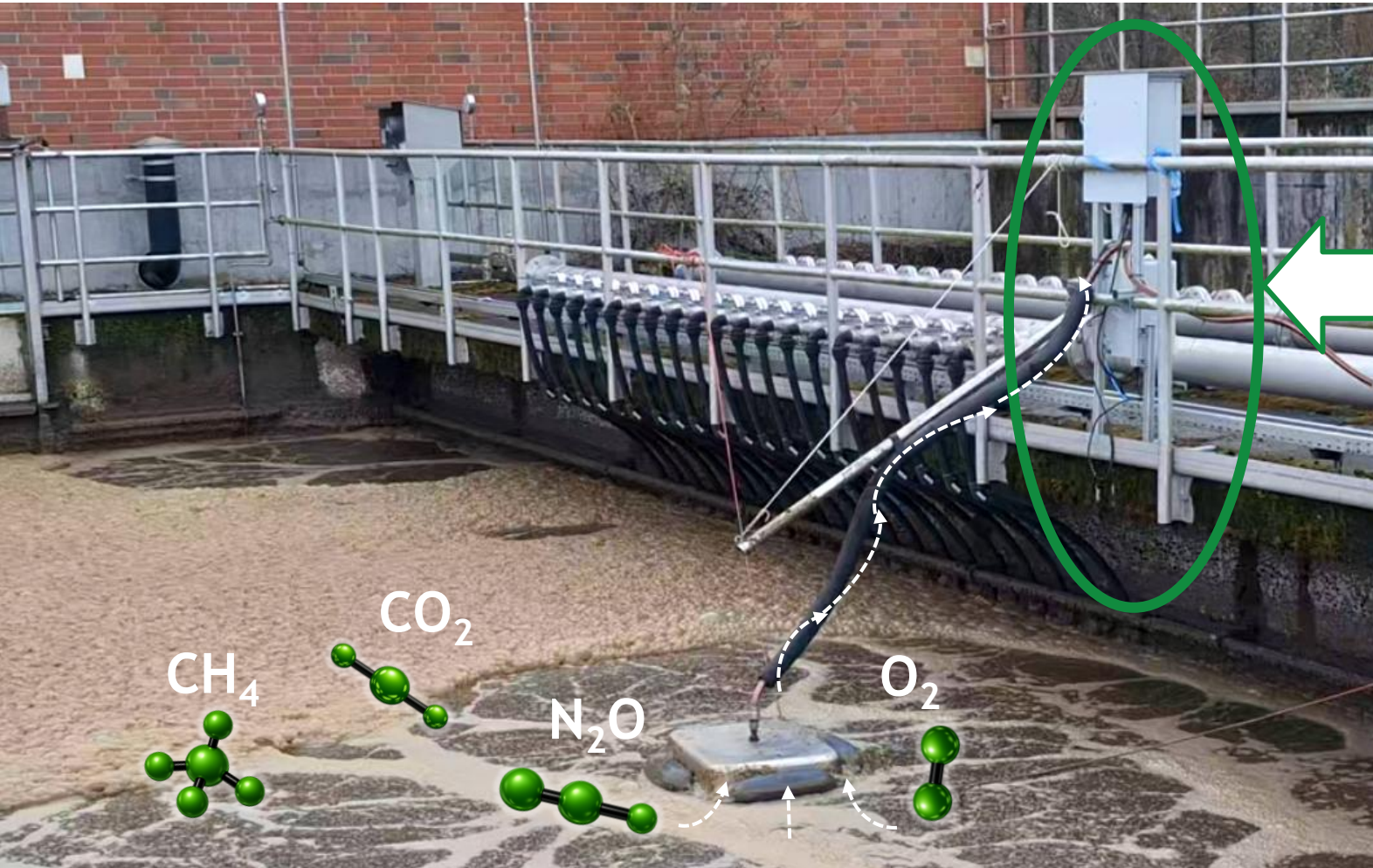
Wastewater Gas Analyser WGA020

Accurate N_2O , CH_4 , CO_2 , O_2 monitoring for water treatment

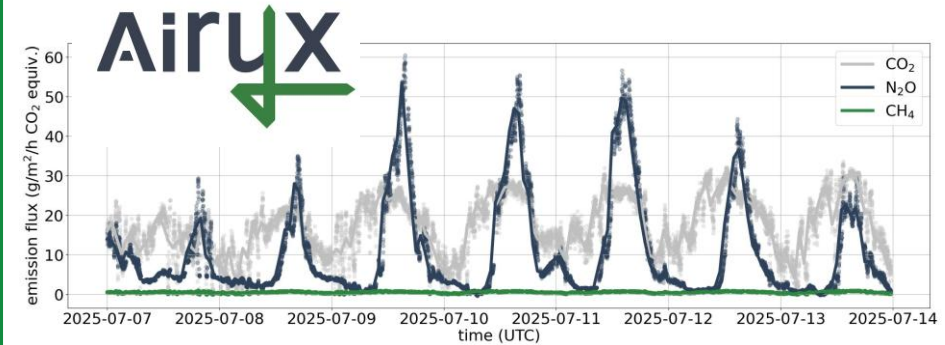


Because accuracy matters.
For the right decisions.

Greenhouse gas emissions from Wastewater treatment plants



Precise monitoring with the WGA



- N₂O is a **greenhouse gas** with **265 × stronger** impact than CO₂
- N₂O mostly emitted from **aerated basins** during nitrification
- Improved plant operation may cut N₂O emissions and save power
- EU directive requires reporting

⇒ The WGA020 provides reliable emission data in compliance with new regulations

Key features of the Wastewater Gas Analyser WGA020

- ▶ **LONG-TERM** continuous monitoring:
 N_2O - CH_4 - CO_2 - O_2
- ▶ **AUTOMATIC** net emission rate calculation
- ▶ **LOW MAINTENANCE**: service only every 6 to 12 month
- ▶ **HIGH ACCURACY**:

Gas	Measurement Range	Limit Of Detection (3σ)	Emission Rate Sensitivity (σ)*
N_2O	0-1000 ppm	0.5 ppm	0.3 mg/m ² /h
CO_2	0-10 Vol. %	40 ppm	24 mg/m ² /h
CH_4	0-1000 ppm	5 ppm	1.1 mg/m ² /h
O_2	0-100 Vol. %	Absolute: 0.1 Vol. % or Relative: 0.5 Vol. % of reading	n/a

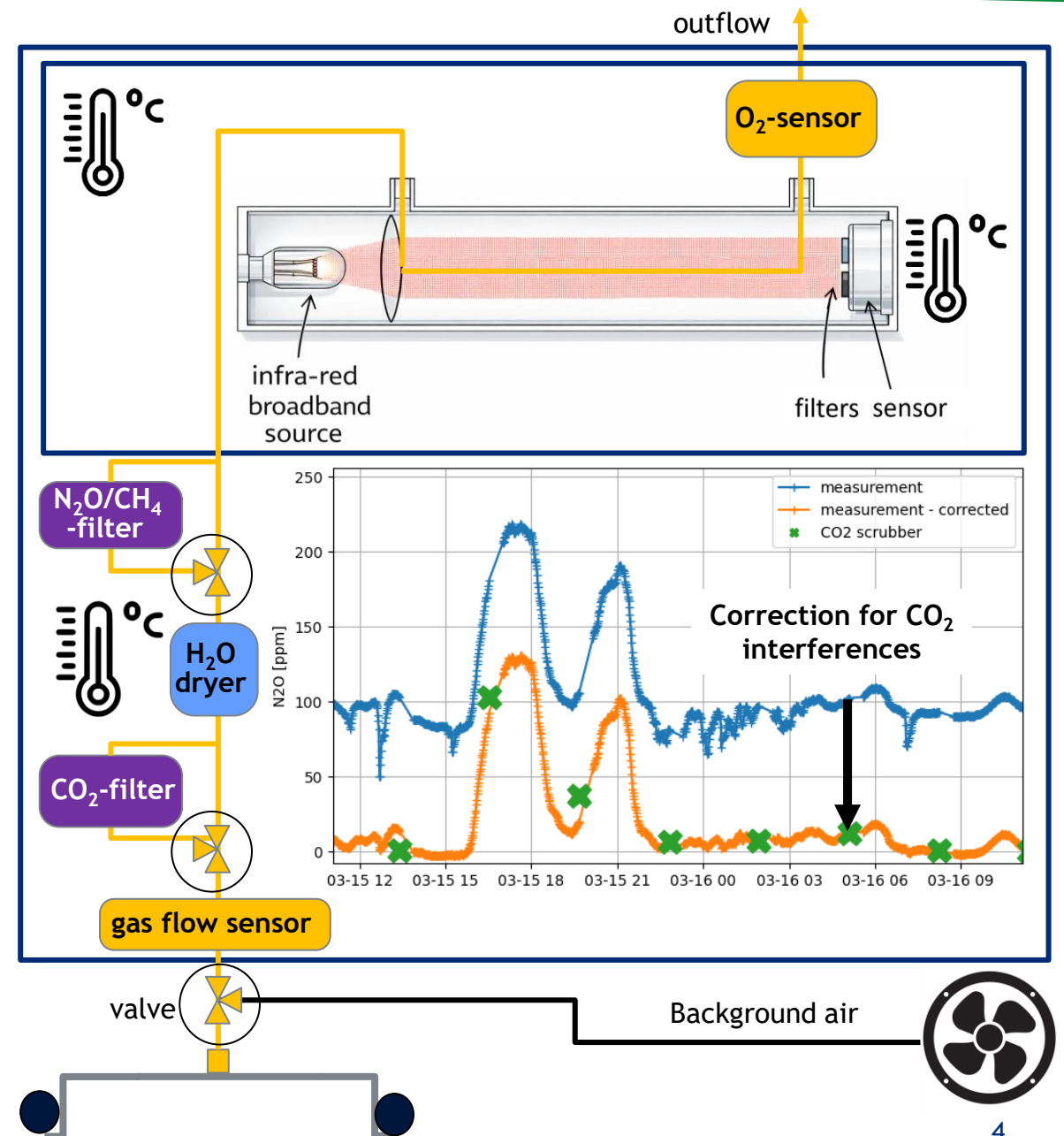
*calculated with flux of
1 m³/h/m²



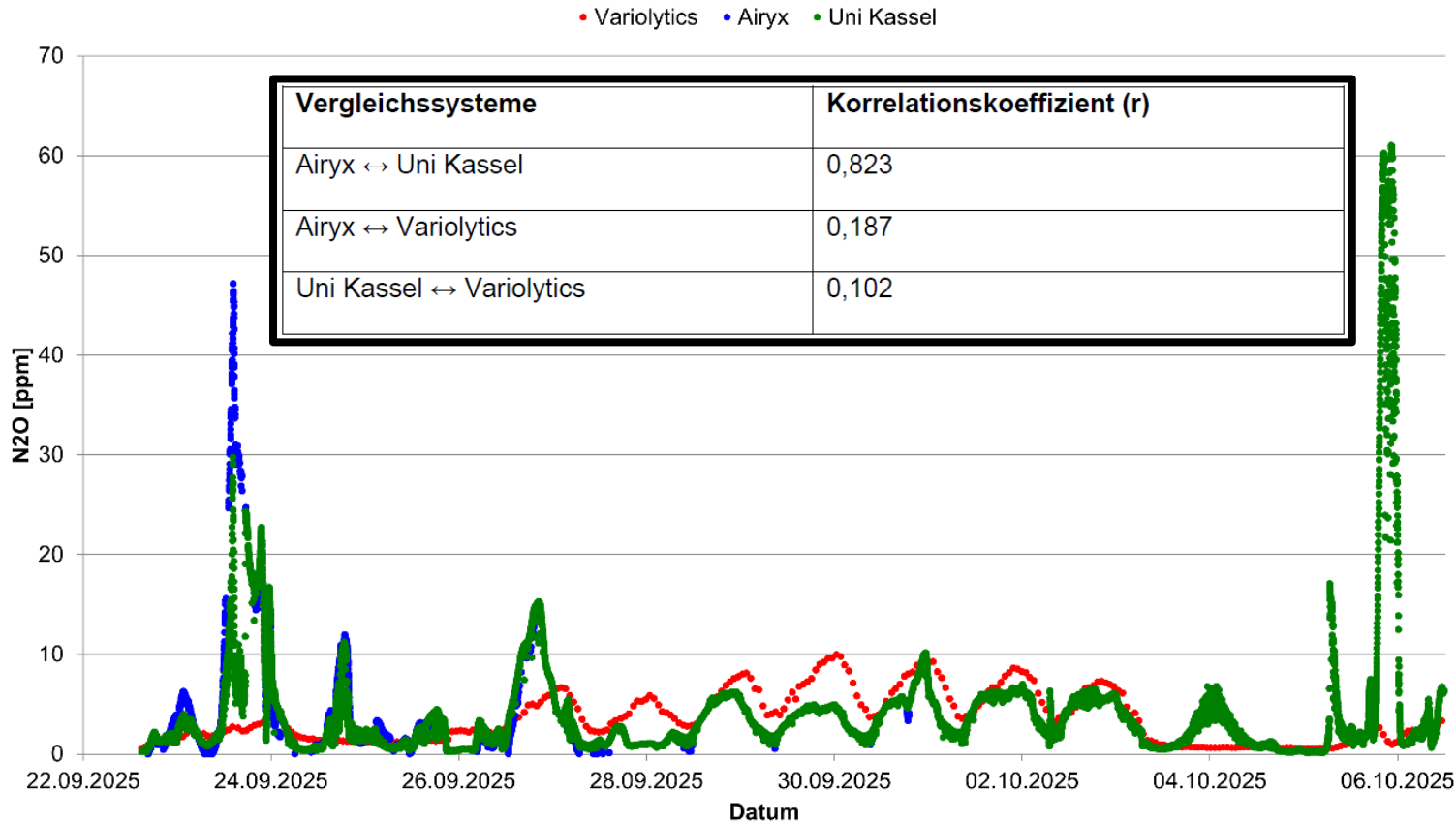
Our measurement technique

- ▶ **NON-DISPERSIV INFRARED:** proven measurement method for Greenhouse gases
- ▶ **TEMPERATURE STABILIZATION:** ensures gas and flow sensor stability
- ▶ **SAMPLE AIR DRYING:** ensures long-life system
- ▶ **INTERNAL CROSS-SENSITIVITY CALIBRATION:** correcting interferences between trace gases & aging effects
- ▶ **GAS-BOTTLE-FREE DRIFT CORRECTION:** Regular background and zero measurements

⇒ **High-quality data, easy handling, long life and low maintenance!**



Independent scientific comparison study

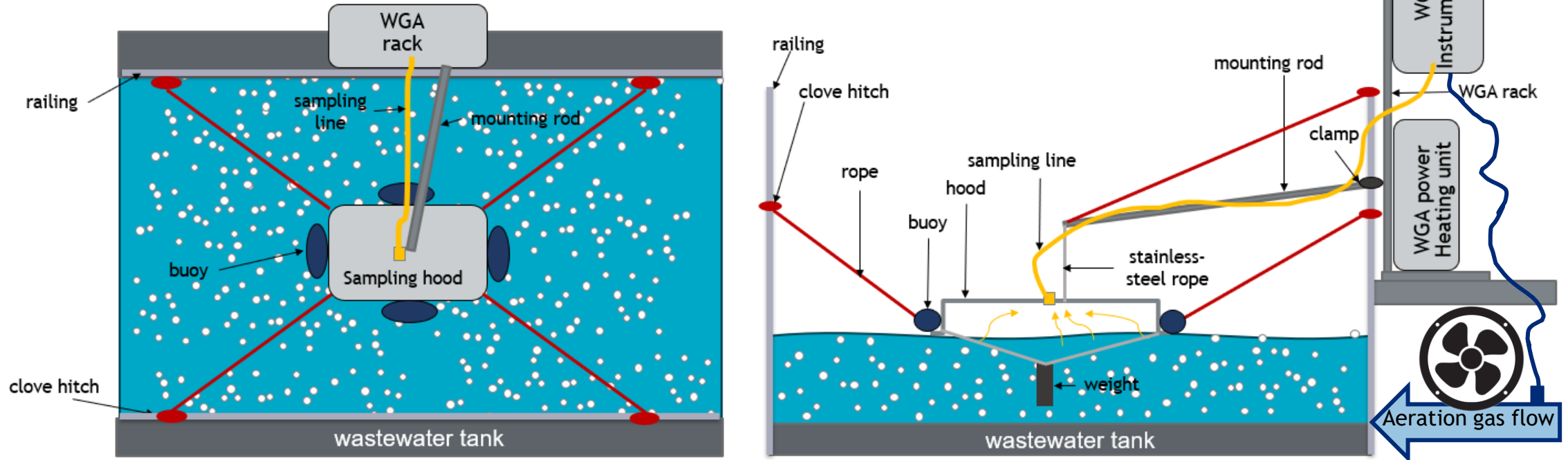


- High correlation between Airyx and university instrument
- Low accuracy of concurrent product

⇒ Demonstrate high reliability of WGA020 measurement data

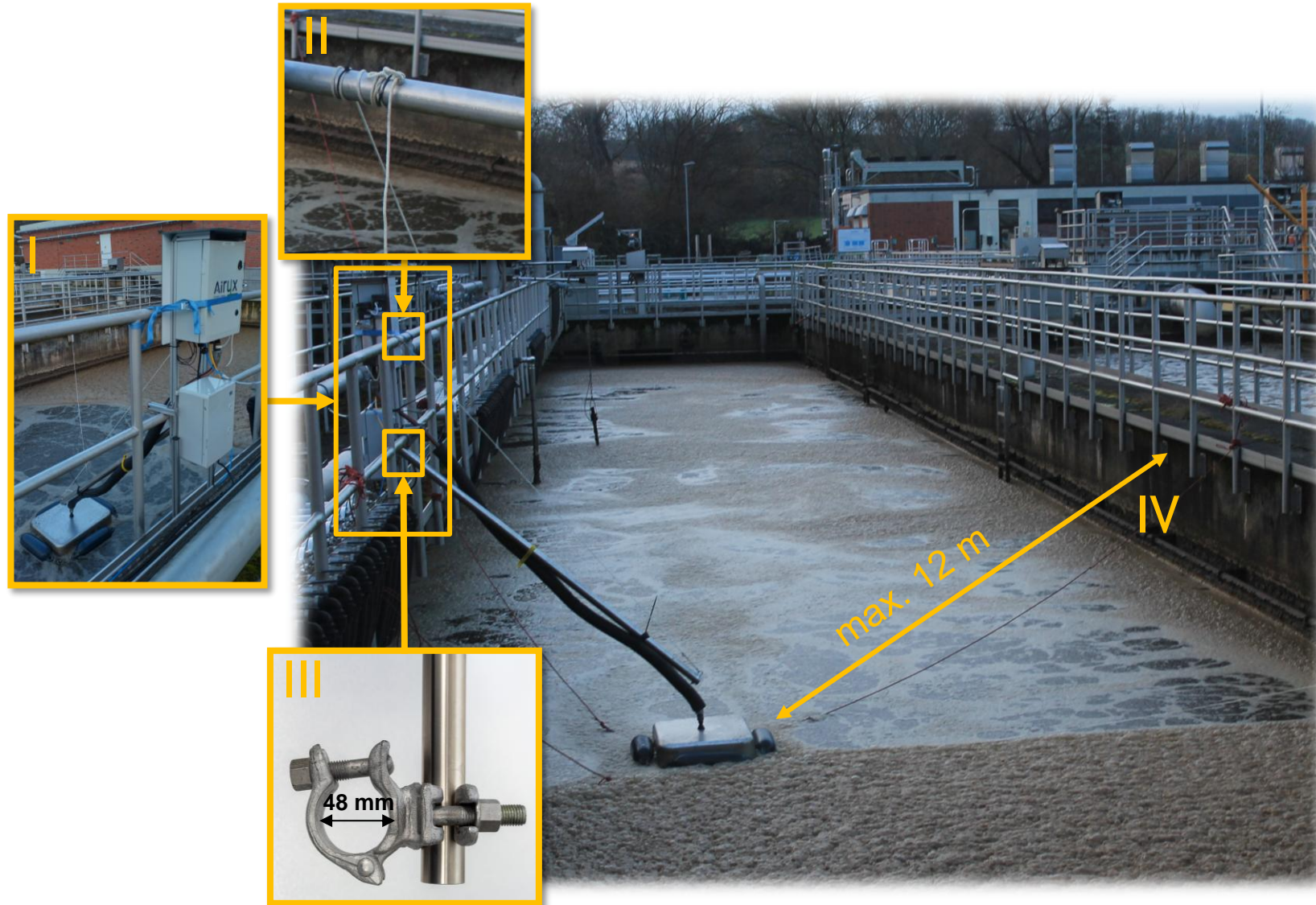
Taken from Nico Rilling, 2026: Plausibilisierung und Minderungsstrategien von Lachgasemissionen auf den Klärwerken S-Mühlhausen und S-Möhringen der Stadtentwässerung Stuttgart

Our measurement approach



- ▶ **FLOATING SAMPLING HOOD:** flexible installation adapting to dynamic water levels
 - ▶ **MULTIPLE MEASUREMENT POINTS:** optional connection of second sampling hood
 - ▶ **INTEGRATED NET-EMISSION CALCULATION:** referenced to ambient or pressurized air
- ⇒ **Robust and stable target gas collection flexible to customer requirements**

Standard sampling hood installation



Customer to provide:

- I. Accessible and safe rack and hood position
 - II. Photos of basin, railing, basin edge
 - III. Railing diameter
 - IV. Basin dimension
- ⇒ Adaptable to customer conditions

Required instrument connections

I. CEE Power Connection within 10 m (230V AC, IP67)

II. Background air:

Pressurized air (preferred)	Ambient air (alternative)
<ul style="list-style-type: none">Customer to provide information of connector type, pressure a distance	<ul style="list-style-type: none">Suitable upwind locationDistance min. 60 m

III. Network connection:

Installation phase	Long-term (optional)
Mobile network provided by Airyx	Ethernet connection to customer network or custom mobile internet



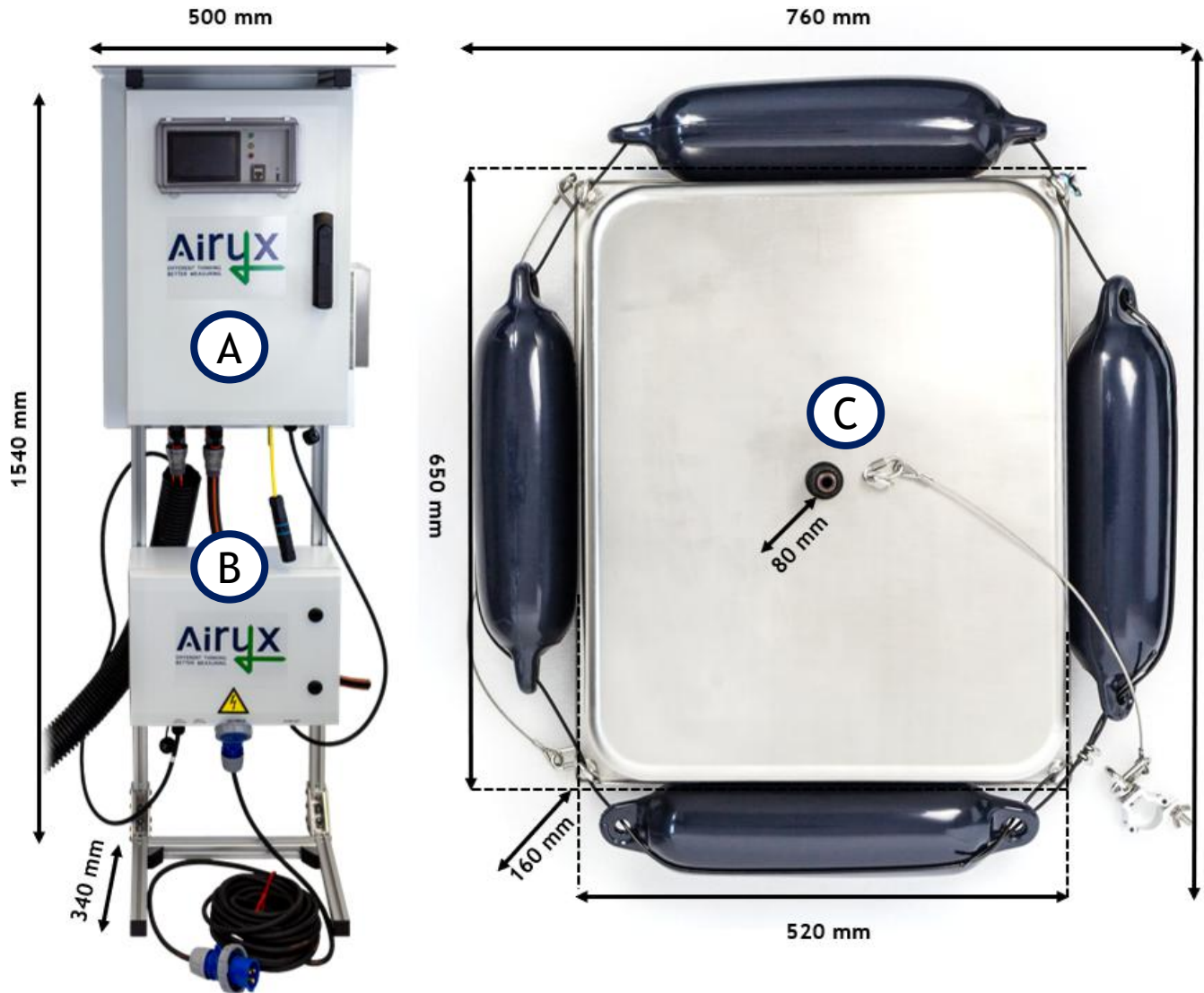
Access options to user interface and instrument data



- 1 Touch display at front panel
- 2 Front LAN port (fixed IP)
- 3 Data copy on external USB flash drive
- 4 Underside LAN port (DHCP)
- 5 Optional: Remote VPN access via internal LTE-modem (4G)

⇒ Direct and remote instrument control and data access

Outer dimensions of the principal WGA components



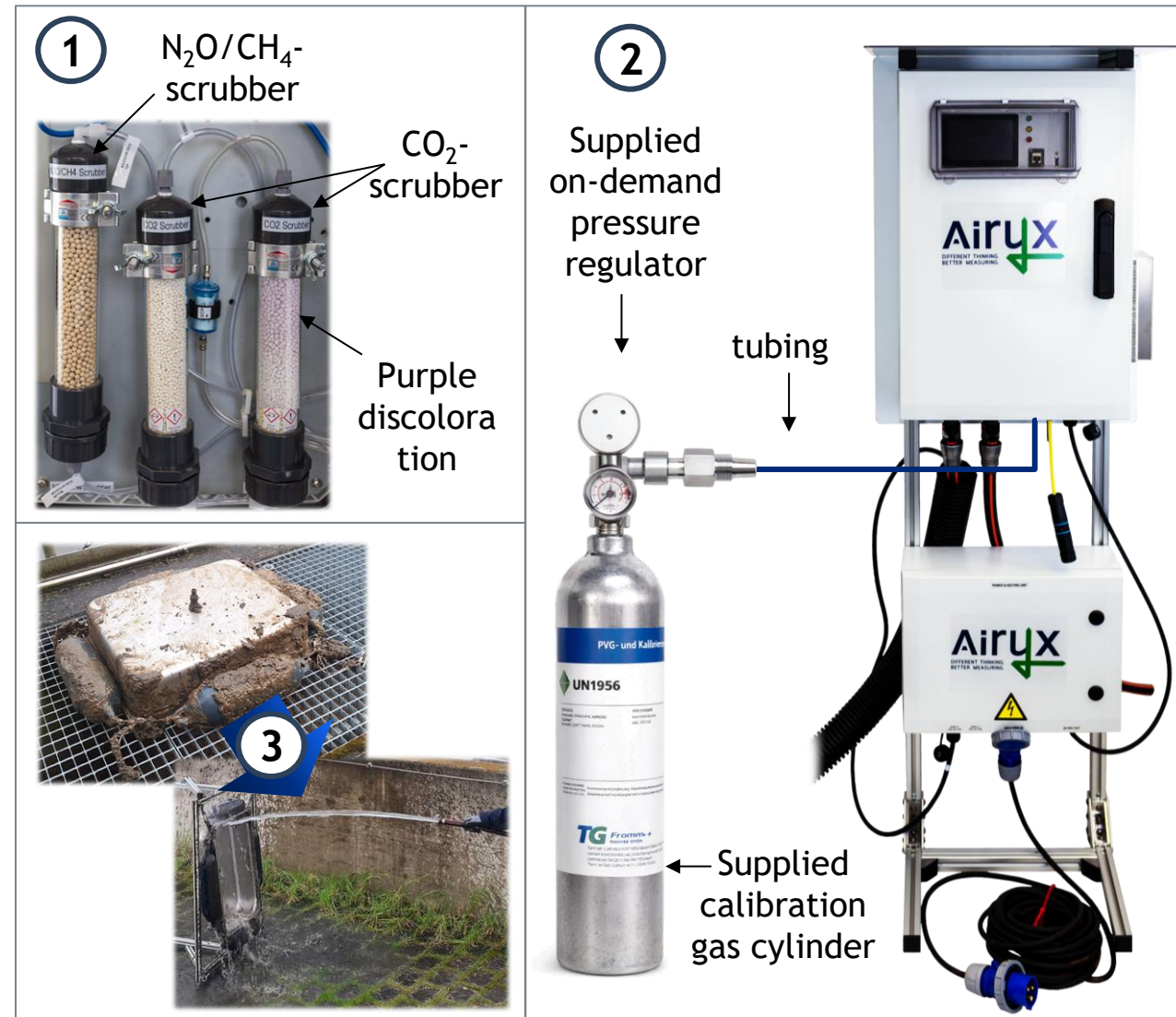
- (A) Instrument unit
- (B) Power heating unit
- (C) Sampling hood
- (D) Sampling line
 - (I) standard
 - (II) With heating

⇒ Compact mounting rack + customized hood equipment

Maintenance and Service

	Task	Interval	Duration
①	Replacing scrubber material	1 year	Ca. 30 min
②	Calibrating gas sensor	1 year	Ca. 1 hour
	Gas	Span	Default
	N ₂	Zero	100%
	CO ₂	10000 – 100000 ppm	30000 ppm
	CH ₄	100 – 1000 ppm	1000 ppm
	N ₂ O	100 – 1000 ppm	500 ppm
③	Cleaning of sampling hood & inflating buoys	1 year	Ca. 3 hours
④	Replacing pump	2 years	Ca. 30 min
⑤	Replacing O ₂ -sensor	2 years	Ca. 1 hour

⇒ Less than 1 day per year servicing



Summary of WGA020

- ▶ Very **LOW SERVICE INTERVAL** of 1 year
- ▶ Internal baseline drift correction and cross-calibration **WITHOUT ANY GAS BOTTLES**
- ▶ **SAMPLE AIR DRYING AND TEMPERATURE STABILIZATION** ensuring **HIGH-DATA QUALITY**
- ▶ **OPTIONAL FEATURES:**
 - Possibility to connect **two** sampling hoods
 - **Heated inlet** for low gas losses
 - Access to **pressurized air supply** of aerated basin
 - Permanent **LAN** connection
 - Integrated **LTE-modem**



GAS-FREE OPERATION



LOW MAINTENANCE



LOW POWER CONSUMPTION

Technical Specifications

Measured gases	N ₂ O, CO ₂ , CH ₄ , O ₂
Measurement principle	Non-dispersive infrared (NDIR) for N ₂ O, CO ₂ , and CH ₄ ; Electrochemical sensor for O ₂
Measured parameters	concentrations in sampling and background air, total sampling flow, greenhouse gas net-emission fluxes, ambient temperature and pressure, system health parameters
Operating temperature	-10° C to + 40° C
Operating Pressure	800-1150 hPa ambient pressure
Time resolution	1 s internal, averaging to 60 s
Enclosure	Rugged and weatherproof design, IP64 rating
Power supply	220 V AC external power supply
Power consumption analyser	80 W nominal, 120 W peak
Power consumption sampling line heating	0 - 156 W (temperature and length of heated line dependent), typical 80 W at 10° C with 5 m heated sampling line
Dimensions	Mounting rack: 1540 mm x 500 mm x 340 mm, Sampling hood: 890 mm x 760 mm x 240 mm
Weight	Mounting rack including instrument unit and power heating unit: ~35 kg, Sampling hood: ~ 8 kg, Equipment: ~5 kg
User interface	Touch display, web interface
Data interfaces	Ethernet, additional data storage on USB flash drive, optional: Remote VPN access via internal LTE-modem
Data format	Text format (UTF8)
Internal calibration	Automatic internal cross-calibration for CO ₂ -interference for quality-assurance
External calibration	Manual calibration of sensors with external standard gas concentrations provided initially and during maintenance
Sample flow (total)	0-20 slm (total), ca. 0.2 slm (analysed)
Sampling area	Ca. 0.3 m ² , optional: 2 x 0.3 m ²
Sampling line	3-7 m , typical 5 m, Outer diameter: 25mm or 75 mm (heated sampling line)

⇒ Find all information and data sheet for download on our website

<https://airyx.de/item/wastewater-gas-analyser/>

We are looking forward to exploring your site!



Questions?

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