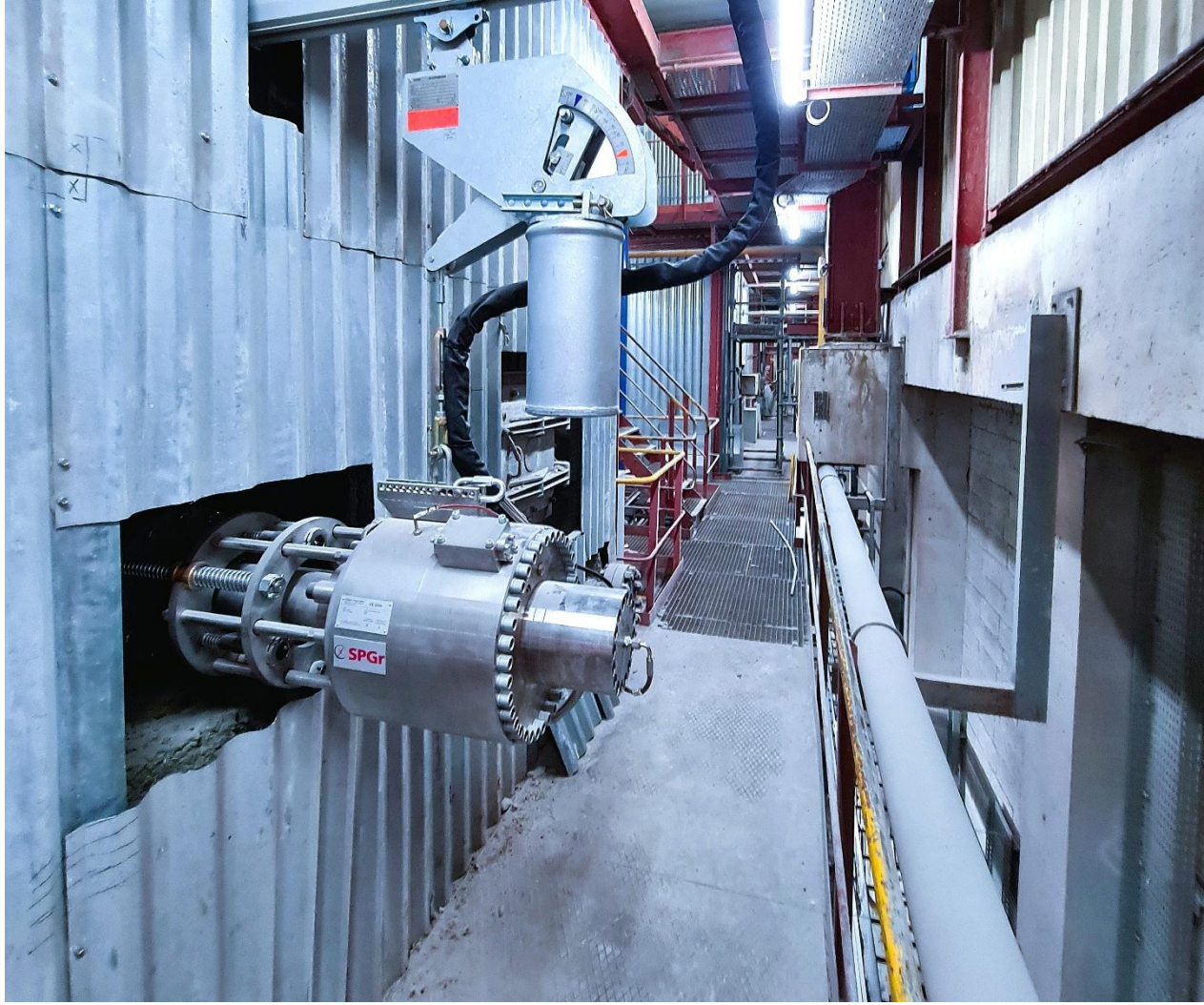
EXPLOSION POWER
Experience you can rely on

WtE – Strasbourg, France

Reduced costs. Reliable operation.

Sénerval, a subsidiary of Séché Environnement, has been assigned by the Eurométropole de Strasbourg since 2010 to manage and operate the waste-to-energy plant of the city.

To ensure stable energy production and reduced operating costs, the boiler cleaning process has been consistently improved. With the use of Shock Pulse Generators, a full operating period has been achieved without any manual cleaning interventions. The conversion has led to significantly less abrasion and erosion, lower maintenance costs, and more stable boiler operating conditions. Thanks to automated intensity control, boiler load can be maintained consistently until the planned shutdown – a clear added value that makes a difference.



Groupe Séché Environnement
Strasbourg
France

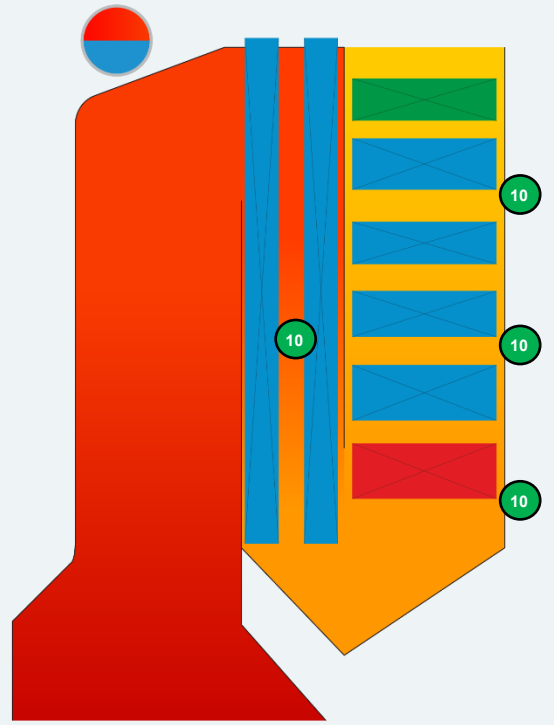
Type of power plant	Boiler width	Steam capacity [t/h]	Cleaning areas
Waste-to-Energy	**4,5 m**	**3x 36**	– **Radiation pass** – **Superheater** – **EVAP** – **Economizer**

Added Value in Practice

- Significant reduction of manual explosive cleanings. Including the SPGr10 for improved cleaning of the 2nd pass and intensity control, a full operation period without any manual explosive cleaning was achieved.
- In previous periods with shot ball cleaning applied, manual explosive cleaning was carried out weekly, and there was a high consumption of shot balls -> reduction of operation cost
- Much less abrasion/erosion and therefore no necessity for tube protectors compared to previous operation with shot ball cleaning -> reduced boiler maintenance costs
- More stable boiler operation conditions, especially lower flue gas pressure drop
- Boiler load can be kept constant until planned shutdown

Boiler Data and Information on Shock Pulse Generators

- Boiler type: 3 identical lines, each with three vertical passes (36 t/h steam flow)
- Boiler width: 4.5 m (Bundles: pitches H: 85 – 120, V: 80 – 100 mm; Height 0.9 – 1.4 m)
- Fuel: Municipal Solid Waste
- Energy revenue: Electricity, process steam and district heat
- Cleaning of 2nd pass: Fourth SPGr10 at boiler 2, since December 2023 (replacing rapping system)
- Cleaning of 3rd pass: Three SPGr10 at each boiler, since 2021 (replacing shot ball cleaning system)
- Shock Pulse Control: Application of intensity control since 2024



Plant Supplier
Est-Industries

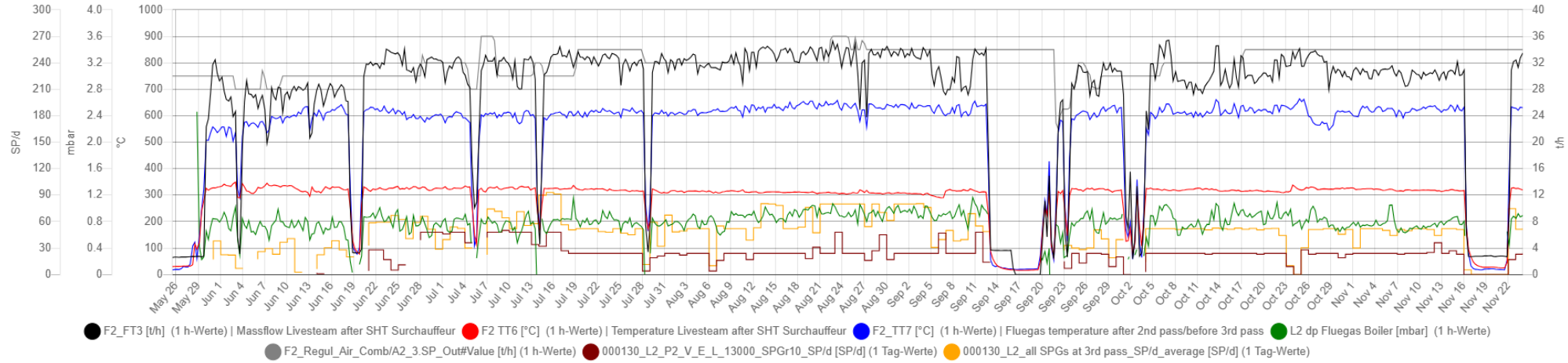
SPG Supplier
Socaltra

SPG Initial Delivery
2021

Insights

Improvements with SPGr10, shown over full operation period of boiler 2:

- Lower flue gas inlet temperature to superheater -> improved cleanability of ash deposits
- Lower flue gas pressure drop
- No additional manual explosive cleaning necessary for 3.5 months; planned boiler stop after this period.
  Outage would not have been necessary based on process values. During previous operation with shot ball cleaning, manual explosive cleaning was carried out once per week.



Graph: Operation period between May and November2024

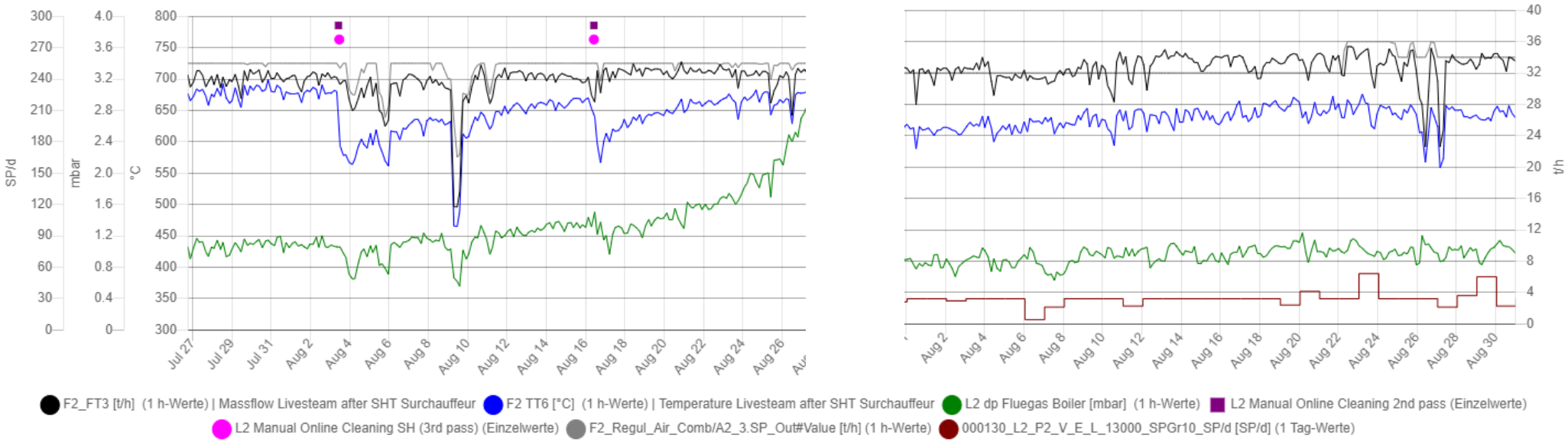
Comparison of 2nd pass cleaning: before and after installation of fourth SPGr10 at boiler 2

08/2023

Rapping for evaporator bundles and manual explosive cleaning

08/2024

SPGr10 with intensity control



	08/2023	08/2024
Ø Live steam [t/h]	31.7 (max 34.7)	32.7 (max 37.5)
Ø FGT 2nd pass outlet [°C]	646 (max 700)	628 (max 677)
Ø Flue gas pressure drop [mbar]	1.3 (max. 2.7)	0.88 (max. 1.3)
Manual explosive cleanings	2	0

Improvements with SPGr10 operation:

- Improved cleaning of 2nd pass, therefore lower flue gas temperature at outlet of 2nd pass
- Better cleanability of superheater, therefore lower flue gas pressure drop
- No additional manual explosive cleanings required

Picture by Groupe Séché Environnement

Successful installation despite narrow space

Shock Pulse Generator SPGr10	Control Cabinets SPC800	Air Compressor Unit ACU260	Fuel Gas Supply