

Mobile performance validation unit for Flue Gas Treatment revamping

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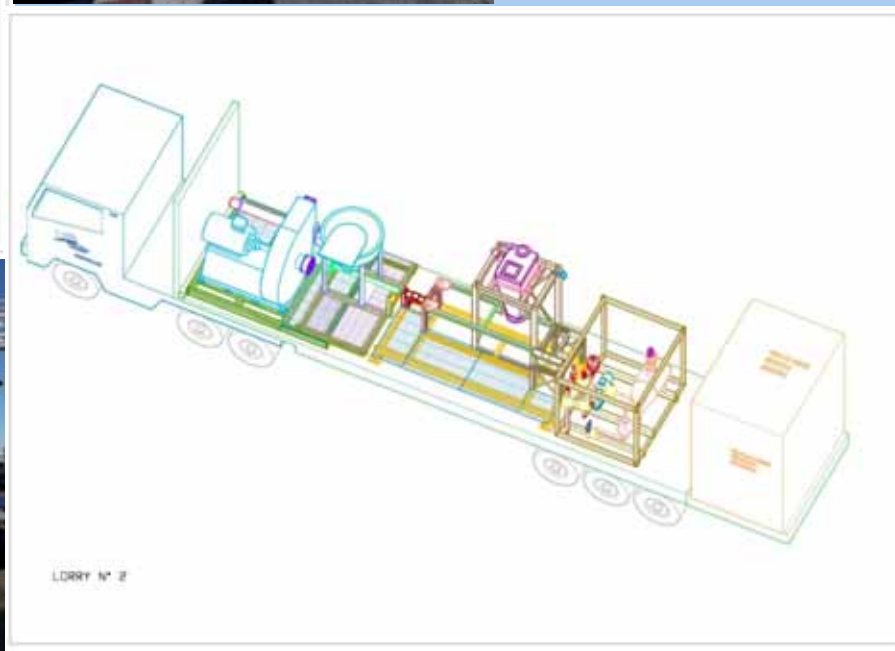
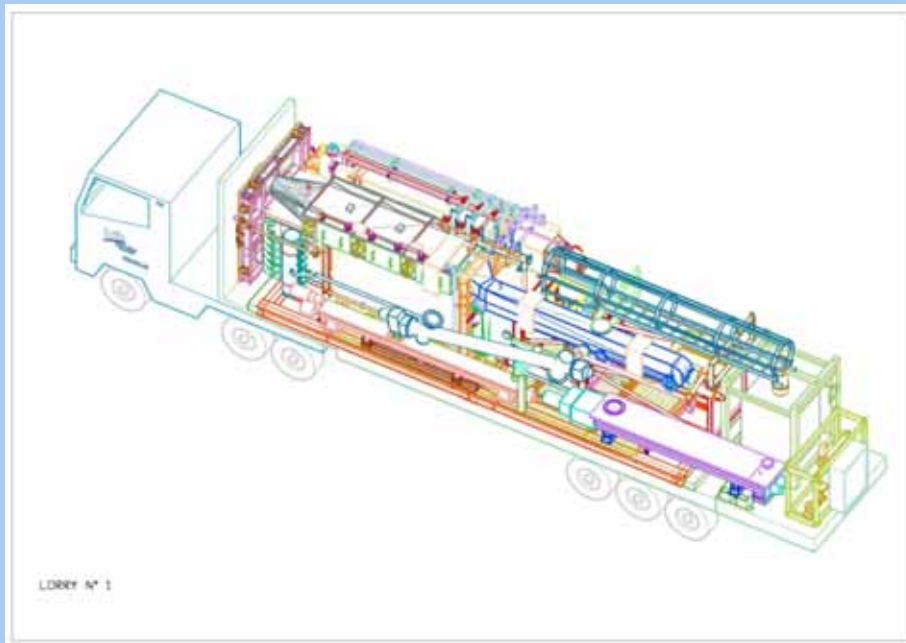
DEMOLAB®

*A mobile unit
to demonstrate
LAB new technologies*



DemoLAB[®]

a mobile demonstration unit



DemoLAB[®]

a mobile demonstration unit

- *to demonstrate the new LAB technologies*
- *to perform the R&D program*
- *to optimize our new processes under extreme conditions*



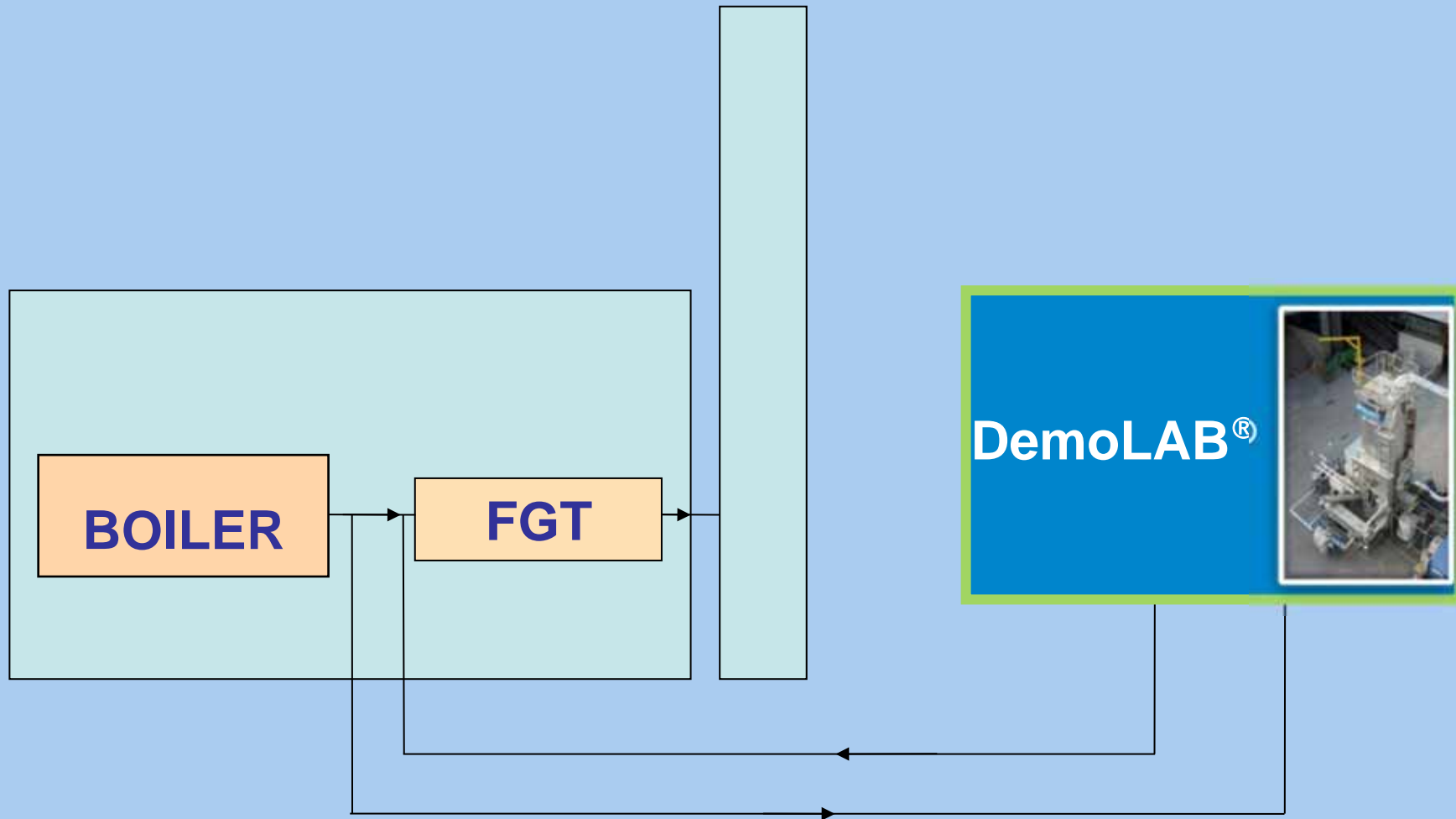
Conditions to operate the DemoLAB[®] :

- *plane surface area (15 m x 10 m) for installation with access for cranes (60 t) and lorries*
- *power supply : 400 V - 100 A*
- *compressed instrument air (1 Nm³/h - 7 bars)*
- *city water (100 l/h)*



DemoLAB[®]

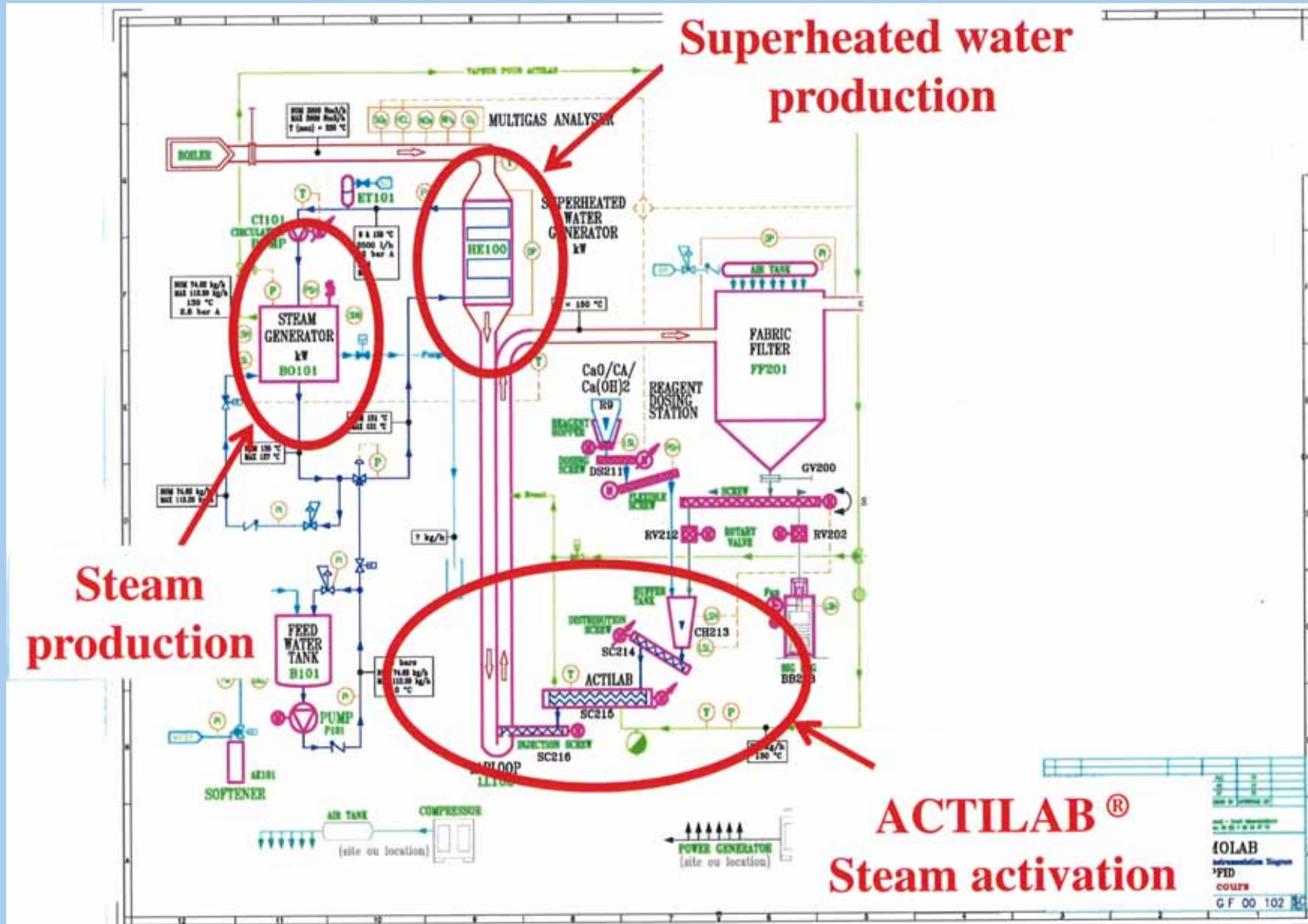
To be installed in parallel with hosting plant :



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Inlet flue gas main characteristics :

Flue gas flow	Nm ³ /h	<i>1 500 – 3 000</i>
Temperature	°C	<i>150 – 250</i>
HCl	mg/Nm ³	<i>0 – 3 000</i>
SO ₂	mg/Nm ³	<i>0 – 3 000</i>
Dust	mg/Nm ³	<i>0 – 20 000</i>
NO _x	mg/Nm ³	<i>0 - 500</i>

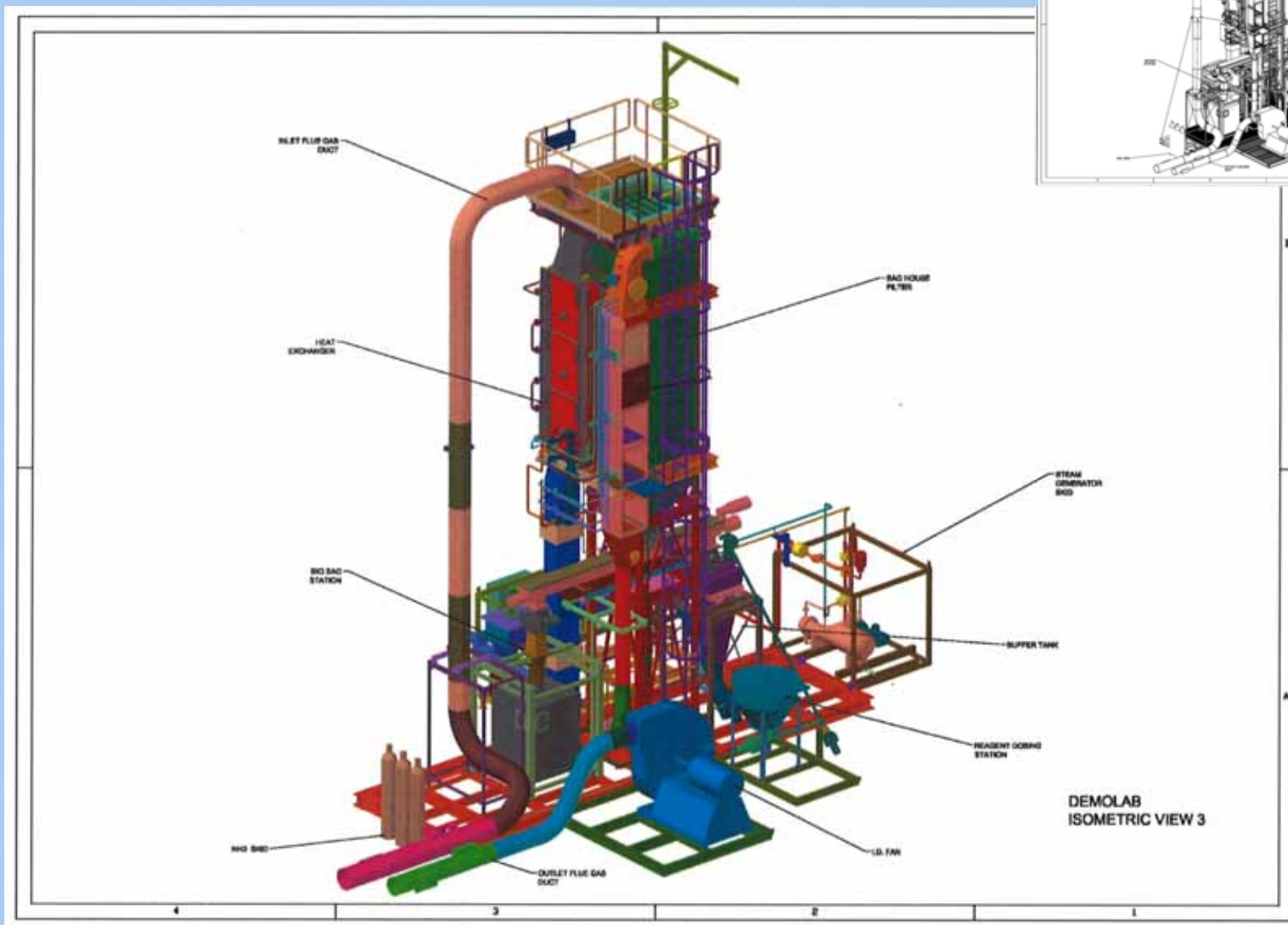


DEMOLAB[®] basic design studies : PFID

Different setups of DemoLAB[®] for WTE or POWER plants :

- *VAPOLAB[®] with hydrated lime or quick lime*
- *BICARLAB[®] with sodium bicarbonate*
- *Simple dry with or without recirculation*

The gas temperature can be adjusted with the heat exchanger for superheated water production.



DEMOLAB® detailed engineering

DemoLAB[®]

Heat recovery



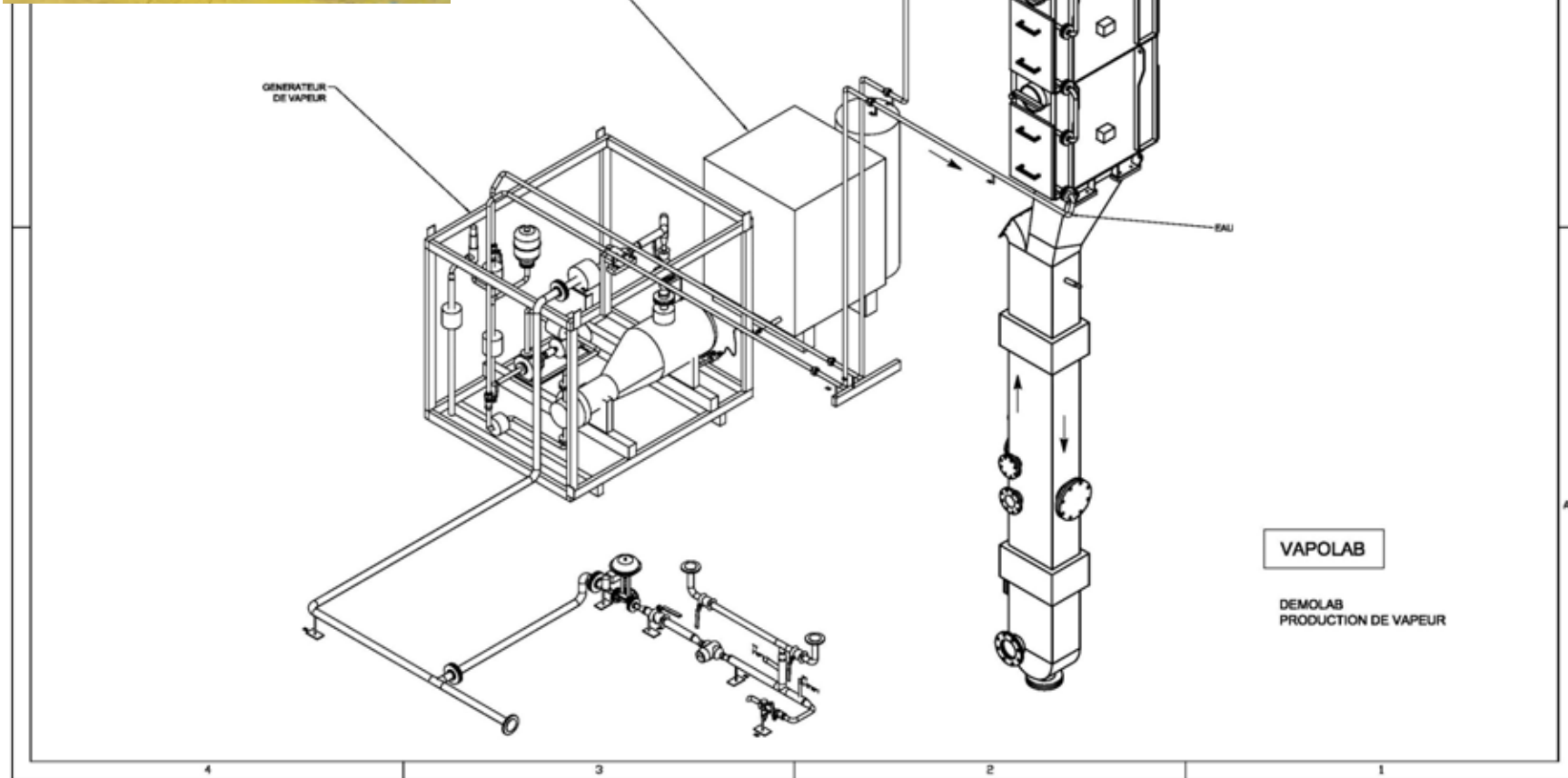
Heat recovery for superheated water & steam production main characteristics :

➤ *Super heated water production :*

- *58 kW*
- *51 m², 30 W/m².K*
- *fin tubes (pitch 16 mm), carbon steel*
- *feeding water : softened water, T > 130°C*
- *water flow : 2500 l/h, 130°C inlet / 150°C outlet*
- *pressure drop : 400 Pa*

➤ *Steam production*

- *43 kW*
- *48 tubes, stainless steel*
- *feeding water 131°C*
- *steam : 3 bars, 133,5 °C, max flow 70 kg/h*



DEMOLAB : Heat recovery and steam production

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Filtration



BHF main characteristics :

- *Surface : 60 m²*
 - *filtration velocity 0,85 to 1,30 m/min*

- *Bags :*
 - *number : 36*
 - *length : 4 m*
 - *diameter : 135 mm*
 - *P84*

- *Declogging system : DP high / DP low*

- *Material : carbon steel*

DemoLAB®

ACTILAB®



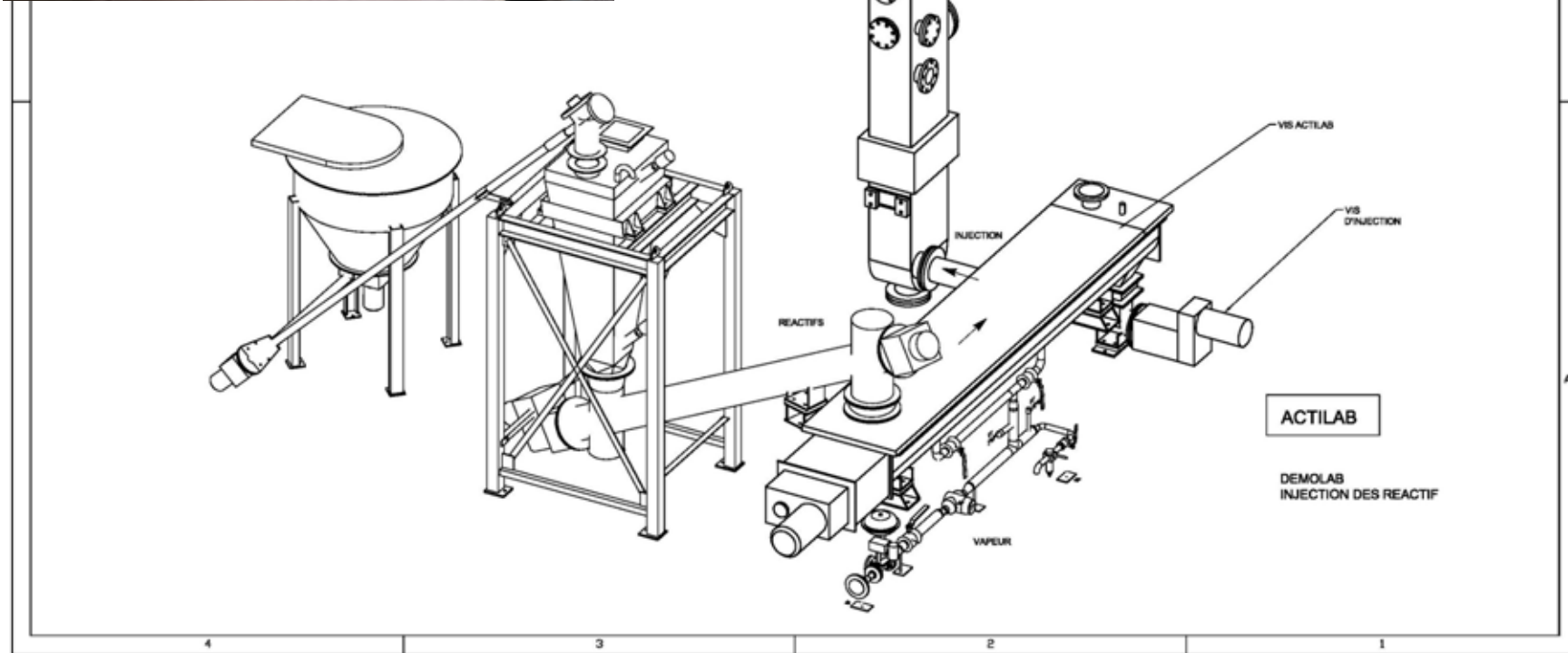
ACTILAB[®] main characteristics :

- *Reagent injection : in the ACTILAB[®], mixed with residue*
 - *2 to 50 kg/h*

- *Residue recirculation flow :*
 - *15 to 125 kg/h*

- *Steam activation :*
 - *10 to 70 kg/h*
 - *saturated steam (2,5 to 3,5 bars)*
 - *superheated steam with electrical reheater (22 kW)*
 - *steam temperature to 350°C*

- *Material : carbon steel*



DEMOLAB[®] : ACTILAB[®] and residue recirculation

*Discover the evolution in
flue gas cleaning ...*

DemoLAB®

*mobile demonstration unit for
testing in parallel to your
existing lines*



DEMOLAB[®] : in operation in PLUZUNET

GROUPE ENIM

Lab

VapoLAB®

The innovative high-performance semi-dry system

Increasing track records

... the current reference situation

- ▶ Teeside (UK)
- ▶ DemoLAB (mobile unit)
- ▶ Brives (F)
- ▶ Mannheim (Ger)
- ▶ Helsinki (Fin)
- ▶ Shropshire (UK)
- ▶ Cardiff (UK)
- ▶ Ridham Dock (UK)
- ▶ Wilton (UK)
- ▶ South London (UK)
- ▶ ...

Environment

Stabilization / Solidification of APC Residues

Recycling of Incineration Bottom Ash

Recovery of Fine Non-Ferrous and Precious Metals



Lab

**Thanks for your
attention**