



Cleaner production - investment in the future



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### Founder in

2003

- Design and engineering center
- Production
- Montage

### Structure

- particle separation from air and / or flue gases
- semi-dry chemisorption of crude gases such as HF, HCl, SO<sub>x</sub>
- SO<sub>2</sub> - removal with wet scrubber

### We built plants for

- ESP
- Fabric (bag) filter
- Reactor for semi-dry chemisorption of crude gases
- “Wet” scrubber

### Developed equipment

- Other

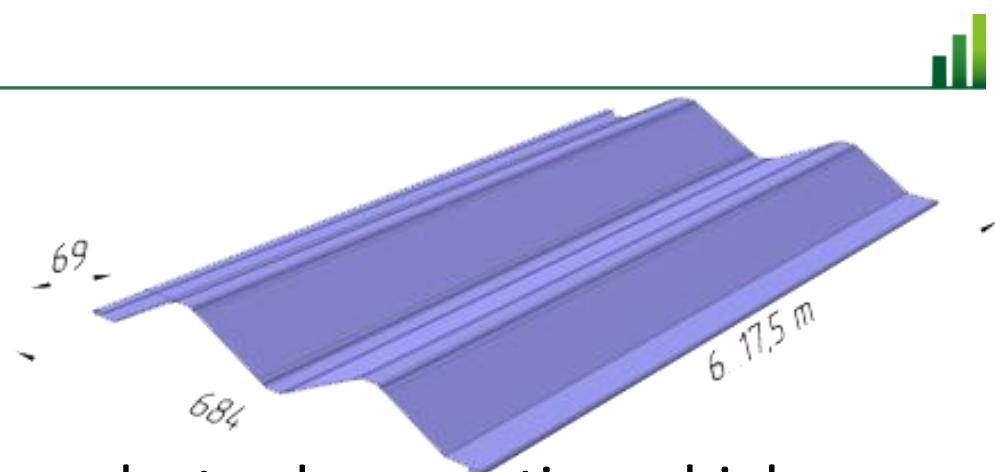
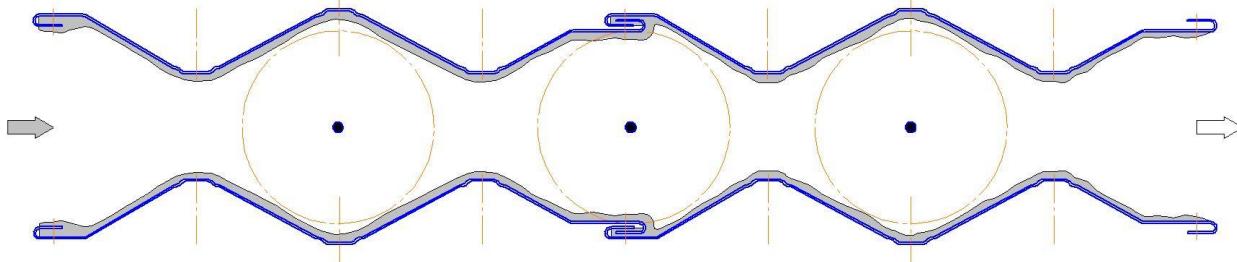
- STEULER-KCH GmbH (Germany)
- LUEHR FILTER GmbH & Co. KG

### Partners

**Our core activity is the forward-looking and innovative development of our products and procedures for the separation of particulate and gaseous substances from the air and/or process gas.**

Our plants give the following benefits:

Reliable observance of required emission levels



There are special forms of precipitation and corona electrodes, creating a high-performance electric field

Reliable equipment and components

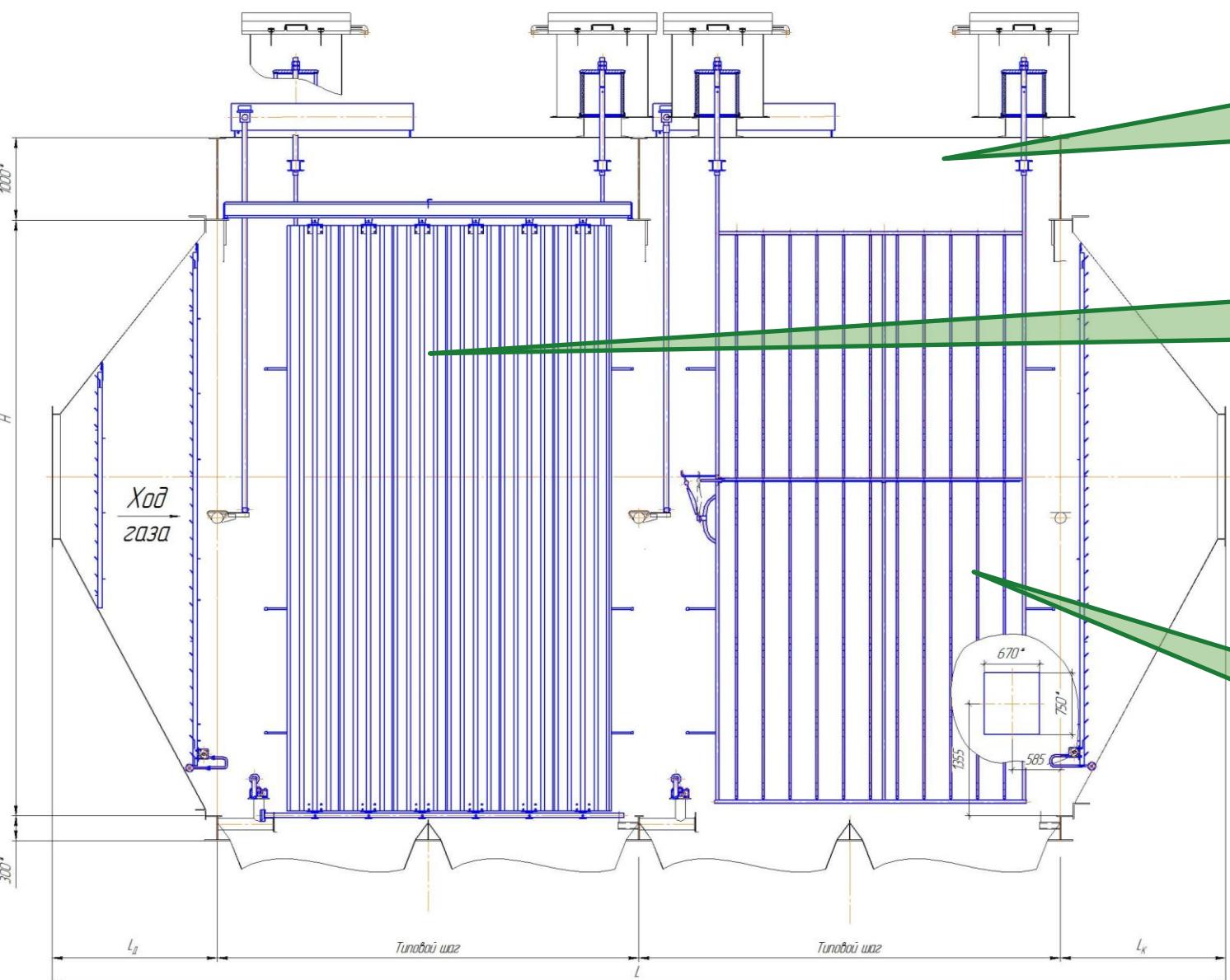
Very long bag life

Low maintenance



# Electrostatic precipitator

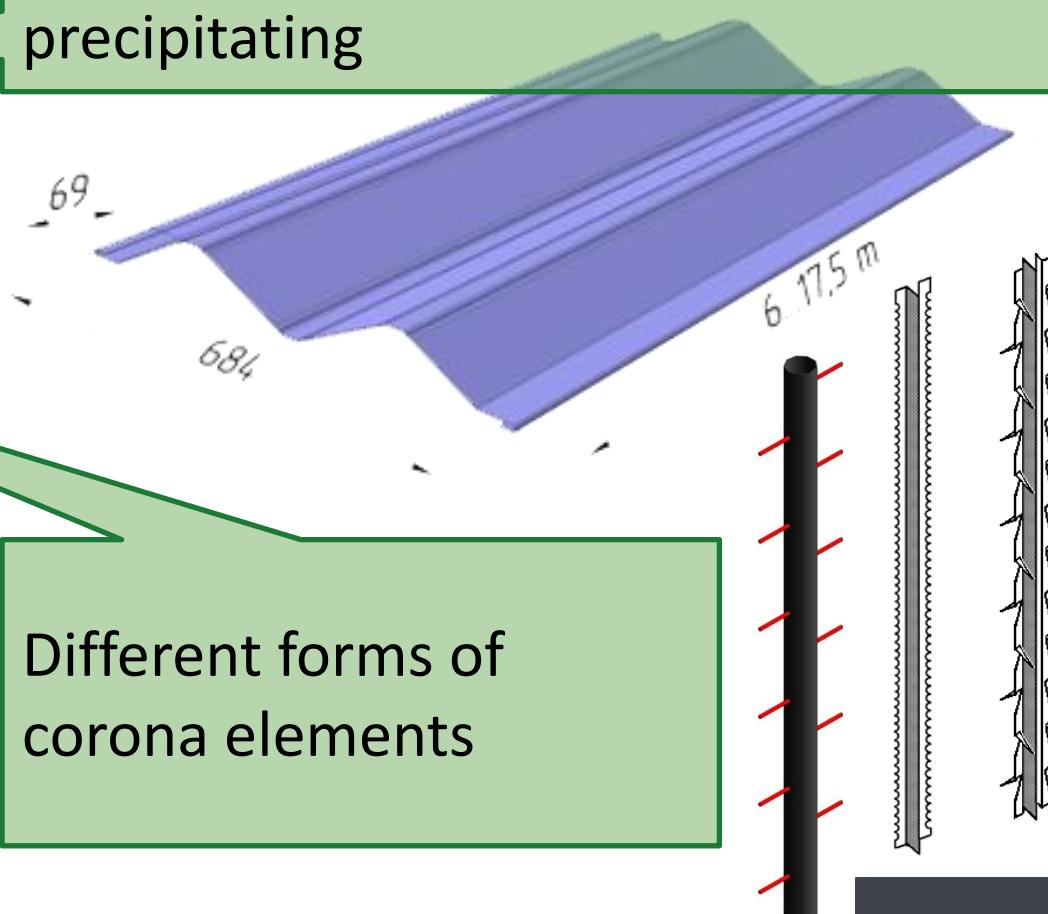
High capture efficiency



Maximum use of the internal volume of the case

The special form of the element of precipitating

Different forms of corona elements

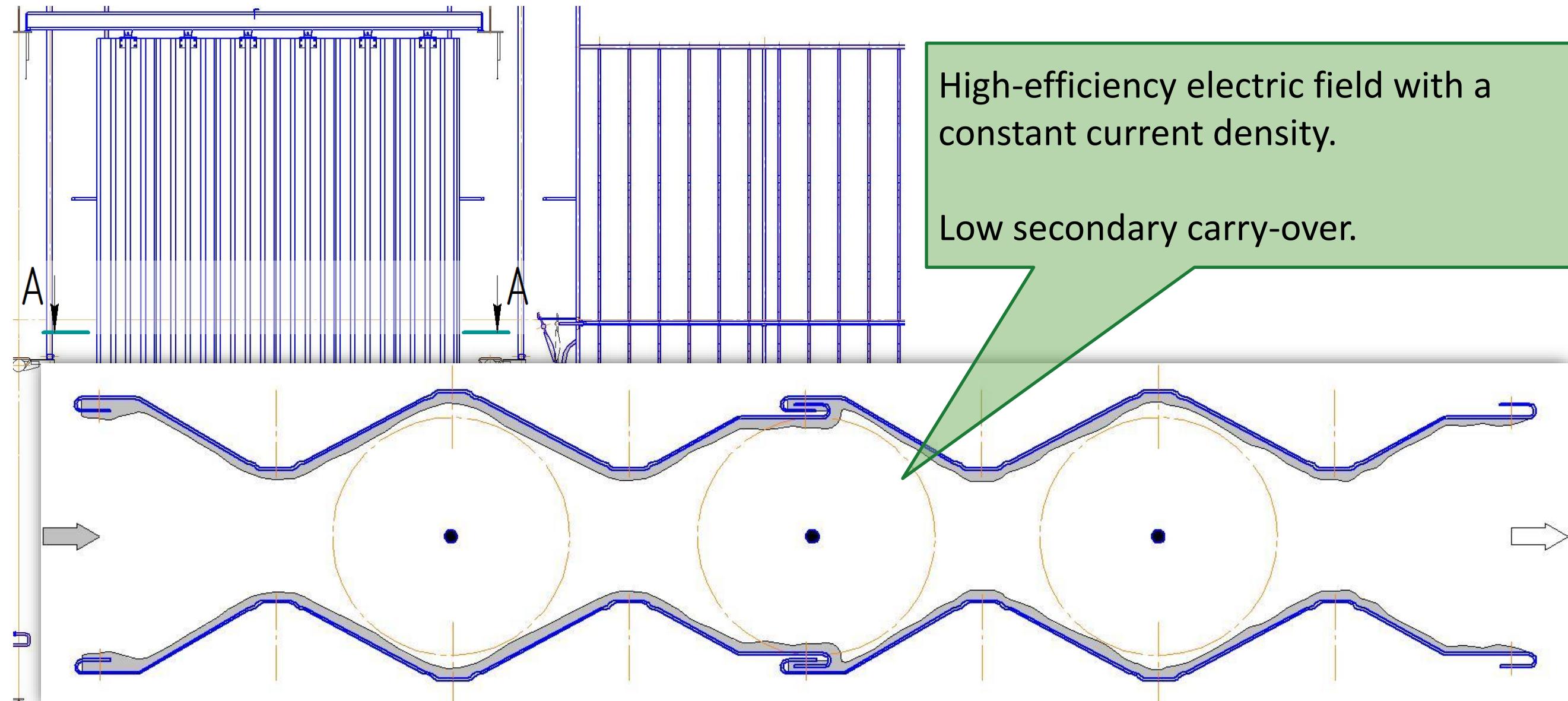


# Electrostatic precipitator

High capture efficiency

High-efficiency electric field with a constant current density.

Low secondary carry-over.

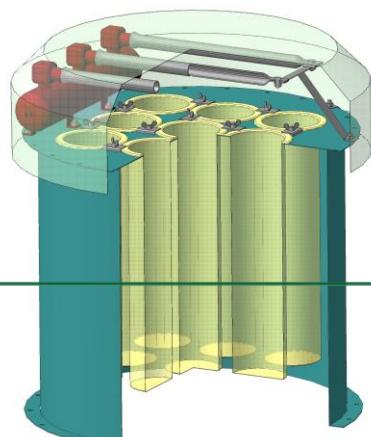


## Bag filter

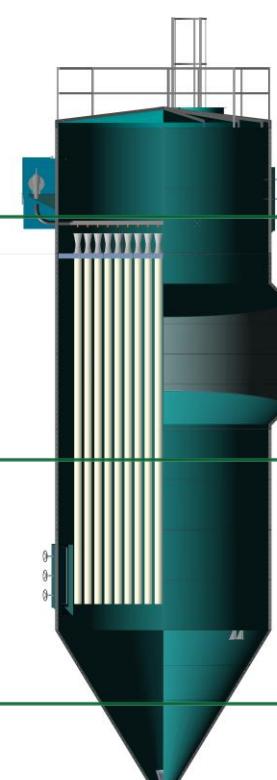
Cleaning of gases: no more than 20 mg/m<sup>3</sup> (on request no more than 1 mg/m<sup>3</sup>).

Our specialists have developed 4 groups of standard sizes of filters:

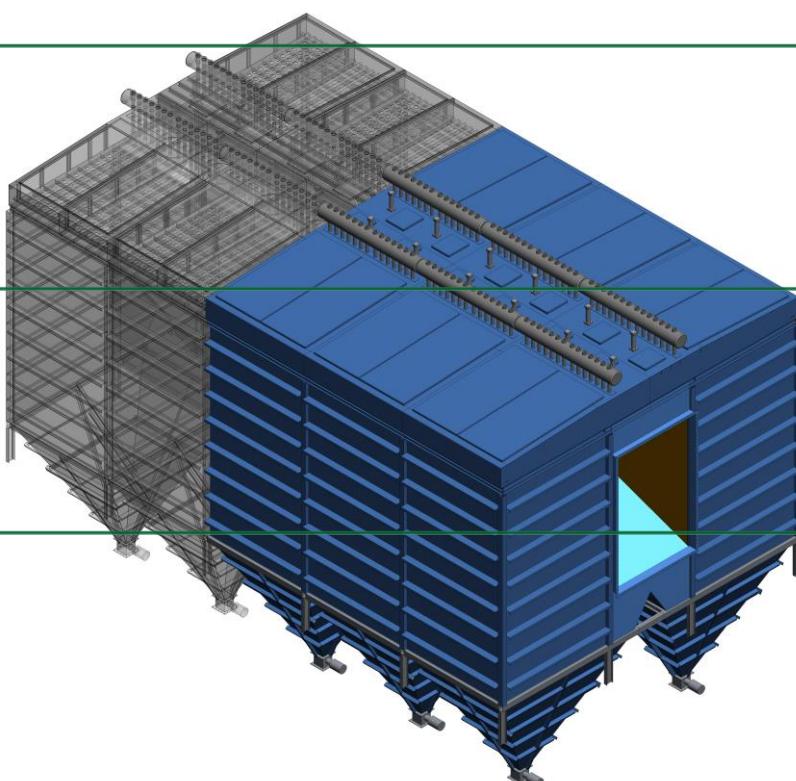
Local (silo filter and product overflow places)



Hose filters with tangential inlet



Bag filter (module)



Bag filter (high productivity)

# PRODUCTION

Our main plant is situated in Zaporozhye, Ukraine.



## DESULFURIZATION FLUE GASES

We offer installation of wet scrubber with our partners STEULER-KCH GmbH (Germany)



# DESULFURIZATION FLUE GASES

## Typical sorbent ( $\text{Ca}(\text{OH})_2$ ) preparation process

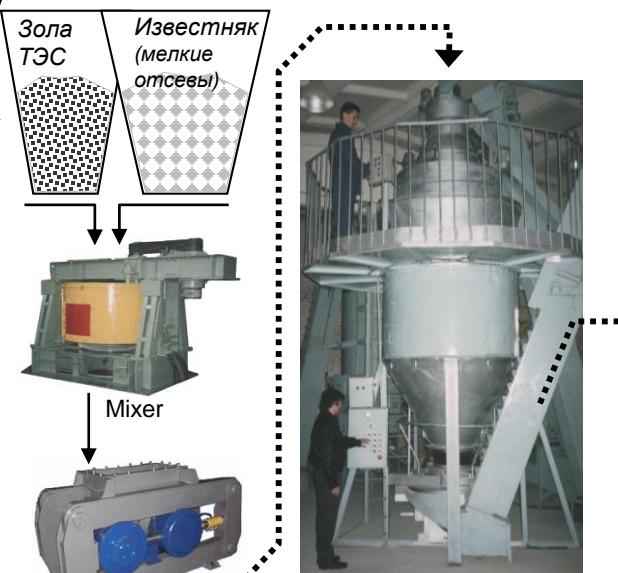
**Commodity  $\text{CaCO}_3$  – 15-25 \$/t**  
**(fraction 40-120 mm)**

**$\text{CaO}$  – 120-150 \$/t**

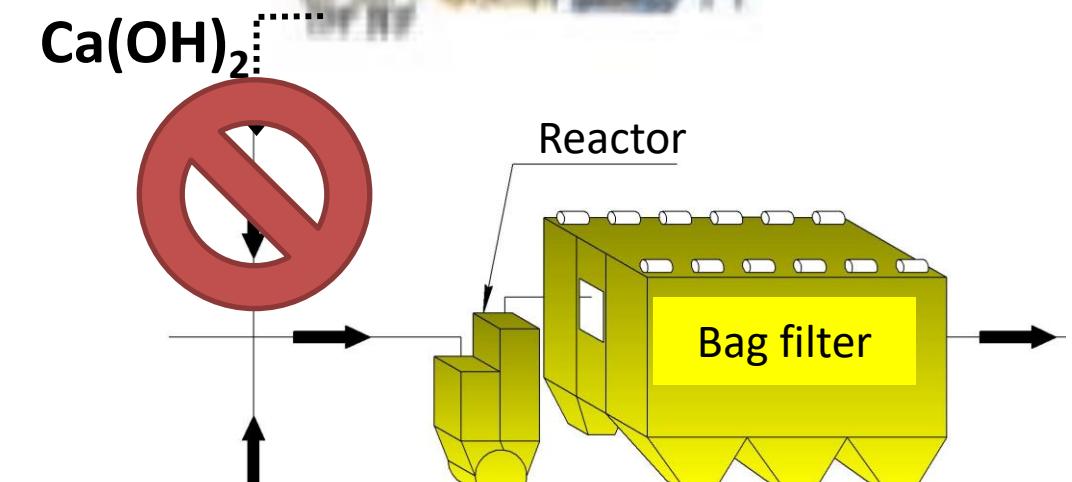
### Sorbent preparation process— DALSICA

**screening  $\text{CaCO}_3$  – 3-5 \$/t**  
**(fraction 0-20 mm)**

We offer the installation of a semi-dry gas desulfurization system with our DALSICA sorbent production system.



The gas generator and furnace in one unit



DALSICA give the following benefits:

- Improving the efficiency of desulphurization systems
- Low operating costs for gas cleaning
- ROI – 2-3 years
- Disposal (sale) wastes
- and other

**DALSICA – method for obtaining cheap sorbent**

# References

Off gas cleaning & Roomdedusting



ESP

- Crude gas quantity 690 000 m<sup>3</sup>/h
- Take - over temperature 80°C



### 2xESP

- Crude gas quantity 800 000 m<sup>3</sup>/h
- Take - over temperature 80°C



## 2xESP

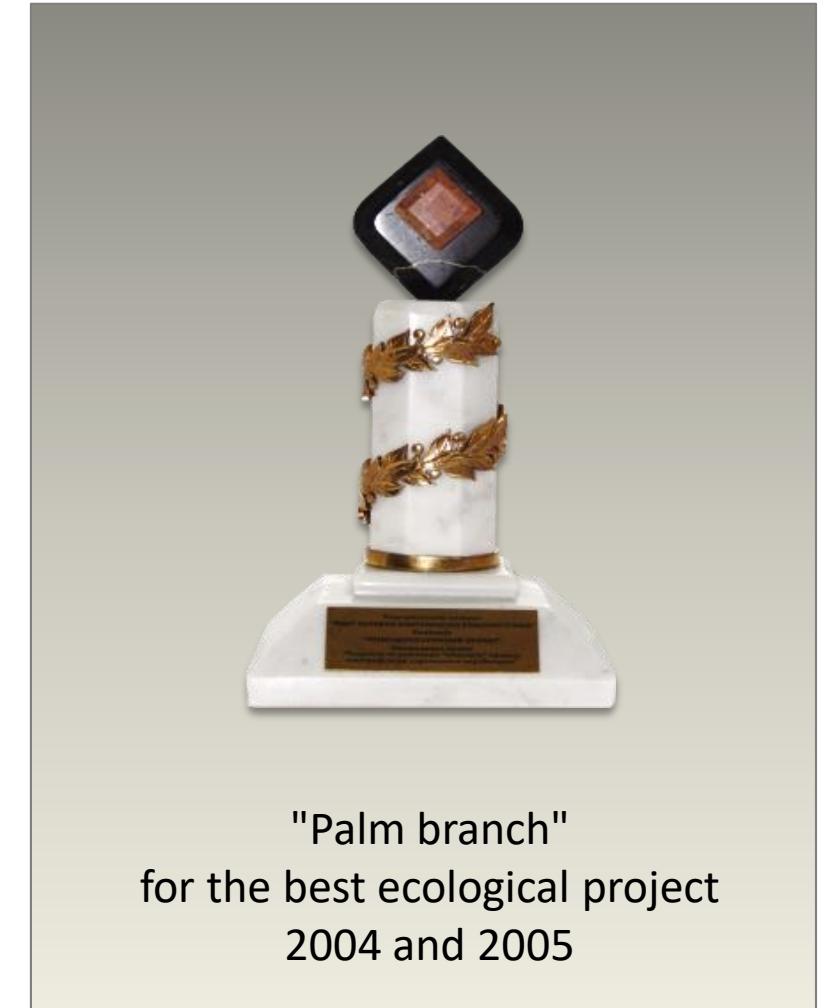
- Crude gas quantity 1 600 000 m<sup>3</sup>/h
- Take - over temperature 80°C



Стахановский завод ферросплавов  
Stakhanov Ferroalloy Plant (Ukraine)



Bag filter for ferroalloy furnaces №5 and 6



### 6xESP for unit №9, 10, 11

- Crude gas quantity 1 560 000 m<sup>3</sup>/h – 1 unit
- Take - over temperature 160°C



Здолбуновский цементный завод  
«Волынь-цемент»  
«Volym-Cement» cement factory



ESP

- Crude gas quantity 400 000 m<sup>3</sup>/h
- Take - over temperature 190°C



ESP

- Crude gas quantity 270 000 m<sup>3</sup>/h
- Take - over temperature 150°C



## Кохавинская бумажная фабрика Kohavinskaya paper mill



### Bag filter

- Crude gas quantity 30 000 м<sup>3</sup>/h
- Take - over temperature 150°C



2xESP

- Crude gas quantity 80 000 m<sup>3</sup>/h
- Take - over temperature 250°C

## OUR CLIENTS



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### ENERGY

Burshtyn TPP  
Slavyanskaya TPP  
Kurakhovskaya TPP  
Ivankov TPP-1, Kiev region.  
Darnitskaya TPP, Kiev  
TPP Cherkasy

### BIO-ENERGY

Oil Extraction Plant Liskinsky  
Kuban company "Elite-oil"  
Solombalsky PPM  
Nevinnomyssk Oil Extraction Plant  
Slavuta Malt  
Zaporozhye Oil and Fat Factory

### METALLURGY

Stakhanov Ferroalloy Plant  
Zaporizhstal  
Alchevsk Iron and Steel  
Pobuzhsky Ferronickel Plant  
Magnitogorskiy MP  
Zaporizhzhya Refractory Plant  
Plant of weighting (Konstantinovka)

### CEMENT

Volyn-Cement, Zdolbunov, Rivne region.  
Nikolaevcement, Nikolaev, Lviv region.  
Yugcement, urban settlement Olshansky, Mykolaiv region.

**THANK YOU FOR YOUR  
ATTENTION**