PROCESS GUIDE

# INCINERATION

Level Detection

Mass Flow Measurement

Flow/NoFlow Detection

Filter Performance

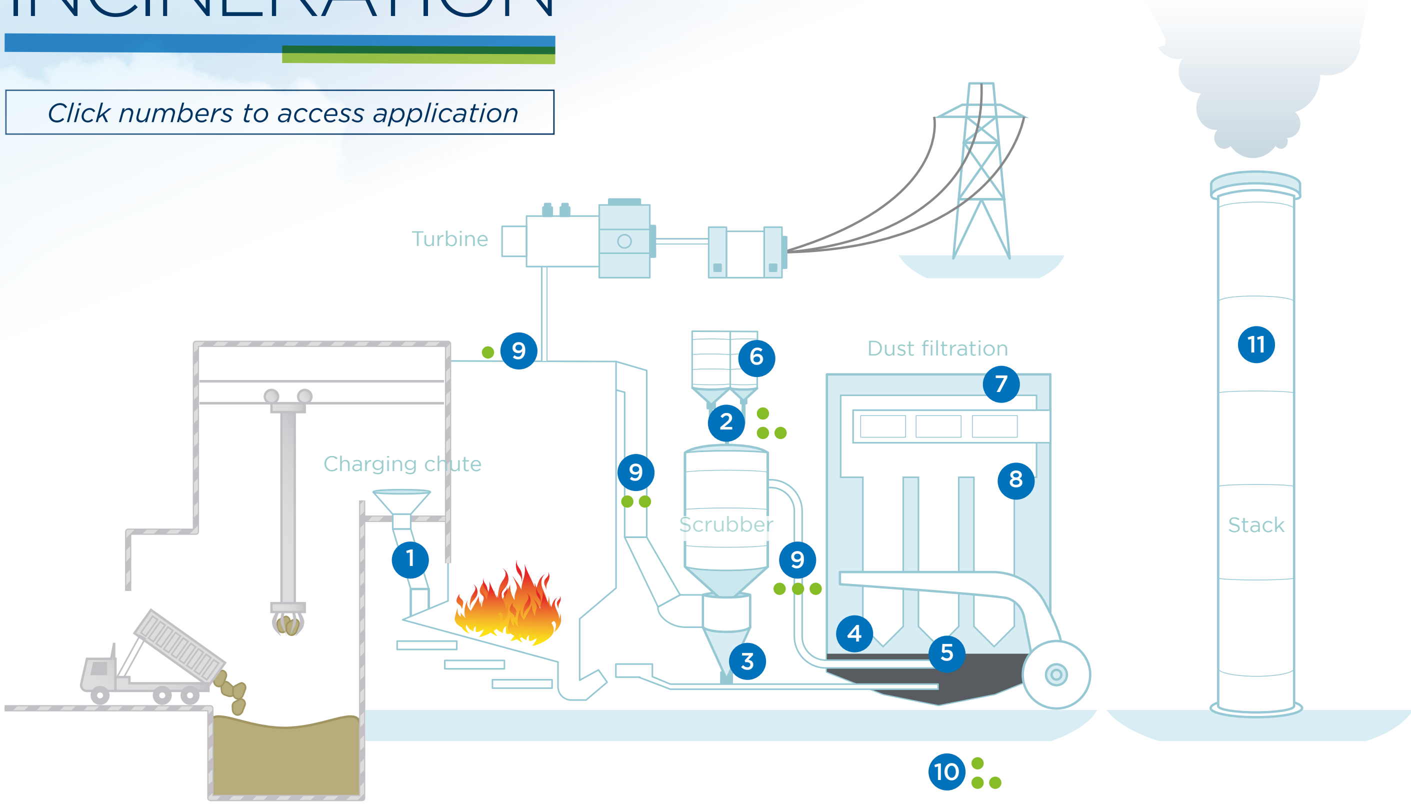
Process Gas Monitoring

Compliance Measurement

Process Leakage Detection

# INCINERATION

Click numbers to access application




1 Point level detection in charging chute

2 Mass flow measurement of absorbent
- ● Coke, lime
- ●● Activated carbon

3 Flow/NoFlow detection at cyclone outlet

4 Ash level detection at filter outlets

5 Flow detection at ash transportation system

6 Continuous level measurement in storage silos

7 Single baghouse outlet monitoring

8 Predictive bag filter row monitoring

9 Process gas monitoring:
Combustion optimization
- ● Gas monitoring at the boiler outlet
- ●● Acids abatement
- ●● Mercury abatement
- ●●● NOx abatement control

10 Process leakage detection
- ● Particulate leakage detection
- ●● Odors & process gas leakage detection

11 Stack compliance measurement:
$NH_3$, HCl, HF, NOx, $SO_2$, CO, $CO_2$, $O_2$, $H_2O$, Hg, TOC, PCDD/F, dust and flow

During the process of waste incineration the atmospheric combustible parts of the waste get burned.

The main intention during this process is a reduction of the volume of the waste by using the included energy. Remaining quantities are compacted for further use and dumping. After the delivery the waste is mixed in the waste bunker to guarantee a constant burning. After that it is transported with a conveyor or a crane to an incineration grate. At the end of the grate the incineration residues fall into a water bath (deslagger), where they are slagged out with a ram or a chain scraper. Afterwards conveyors transport them to the slag bunker.

The heat, which is generated during the incineration, produces steam. This steam generates electricity or is used for district heating. The first step in the flue gas cleaning is the filtration of the dusts included in the flue in the form of fly ash. This process is realized in the electric filter. By addition of ammonia water the included nitric oxides in the catalyzer are converted into eco neutral nitrogen and water. The hot burned gas is used by an economizer. Thereby the temperature of the burned gas decreases. In the back stream cyclon dust catcher with downstream baghouse filter gaseous chlorine and sulfur compounds as well as dioxins and furans are bound by activated carbon, lime and water.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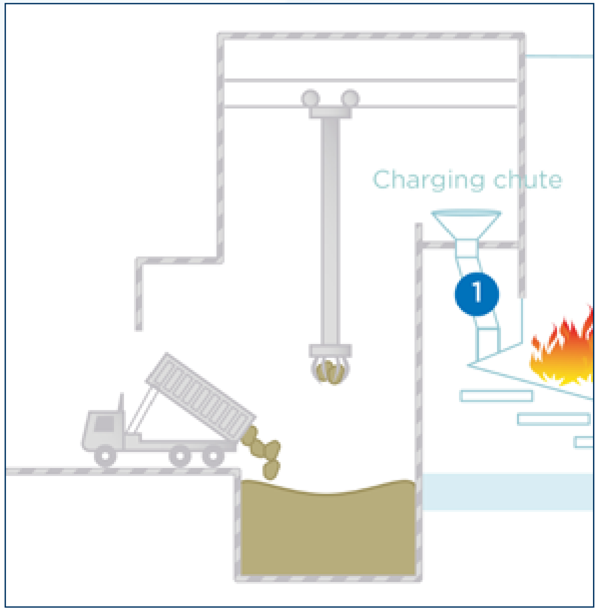
# MONITORING SOLUTIONS FOR YOUR ENTIRE PLANT ENSURING PERFORMANCE AND PROFITABILITY

# 1 POINT LEVEL DETECTION IN CHARGING CHUTE




Waste recycling in incineration plants starts with the delivery and incineration of waste. The waste reaches the combustion chamber via a falling chute, which is followed by a hydraulic feed device. To guarantee a constant incineration process, the falling chute has to be filled constantly.

The „high“ and „low“ limit values should be detected and alarmed. The plant operator looks for a device, that measures the point level completely over the whole cross section. Vibration level detectors (Vibrating forks) are inappropriate, because they only measure at the shaft wall and ignore the material in the middle. Strong mechanical influences also do not allow the use of Rotary Paddle Switches.

Thanks to the flush wall mounting the ProGap 2.0 works without problems in harsh processes, where strong mechanical forces are at work.

**Material:** Household waste

**Installation:** Garbage chute

**Function:** Control of filling level

## SOLUTION

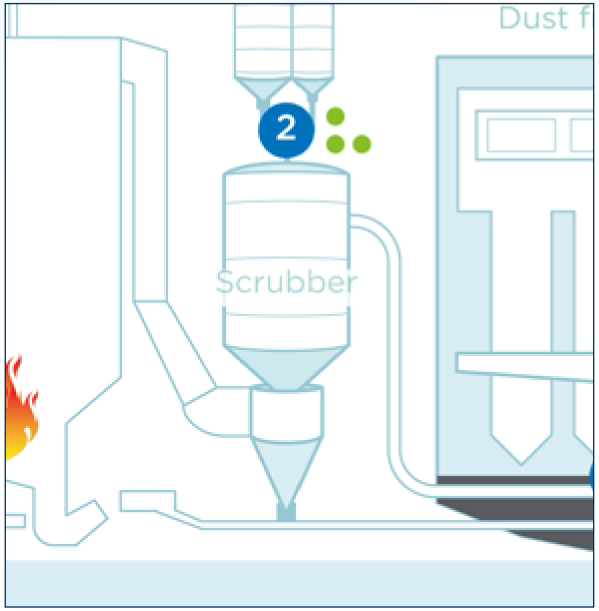
The ProGap 2.0 is an universal and flexible sensor, consisting of a transmitter and receiver, based on the latest microwave technology. In the described application the ProGap 2.0 measures limit levels in a falling chute through a plexiglas wall. The detection of the limit levels guarantees a constant filling of the combustion grate and thereby a continuous firing.

Overfill levels are avoided to protect the installation in case of fire. In spite of measuring through non-conductive materials, a direct material contact of the ProGap 2.0 is also possible, using special process adapters. Special high temperature process adapters are available.

## CUSTOMER BENEFITS

- Early detection of over or underfilling
- Reliable point level monitoring even at very high process temperatures
- Easy commissioning
- Direct and reliable monitoring of waste feed into incineration area
- Simple process adaption
- Flame flashback from the burner is avoided

# 2 MASS FLOW MEASUREMENT OF ABSORBENT




2 • Coke, Lime

A waste incineration plant produces exhaust gases during the incineration process. These gases need to be cleaned.

Therefore hearth furnace coke is used continuously and, if needed, lime hydrate. Both materials are stored in silos. Via a rotary valve the two materials are blown from the storage places into a conveying air flow and thereby reach the exhaust gas stream which they clean.

Apart from measuring the different material quantities the installed volume meter also detects the output of the installed rotary feeder. Therefore the material feed from the silo is measured, while the rotary feeder continues to operate. Depending on the material quantity detected in the idle mode it is possible to recognize if the rotary feeder has to be cleaned.

**Material:** Hearth furnace coke (HFC)

**Installation:** After screw conveyor

**Function:** Measurement of HFC and regulation of its speed control

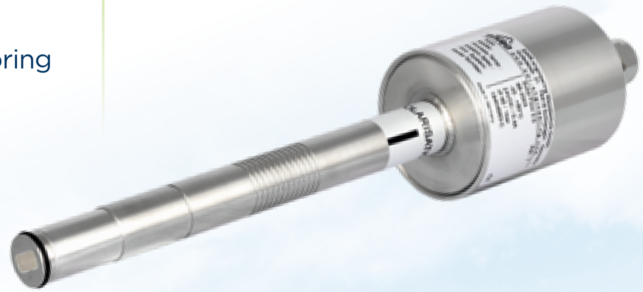
## SOLUTION

The SolidFlow 2.0 measures a continuous mass flow up to 20 t/h in freefall and in pneumatic conveying. In the described application the dosage of HFC into the exhaust air stream should take place automatically and depend on the remaining pollutant concentration. The measuring of the exhaust gas values after the separation process defines the amount of HFC, which has to be admixed to the separator and therefore represents the command value. The installed SolidFlow 2.0 measures the amount of HFC dosed by a screw conveyor and regulates its speed control. After the freefall the HFC enters an injector, where it is transported by an airstream to the filter.

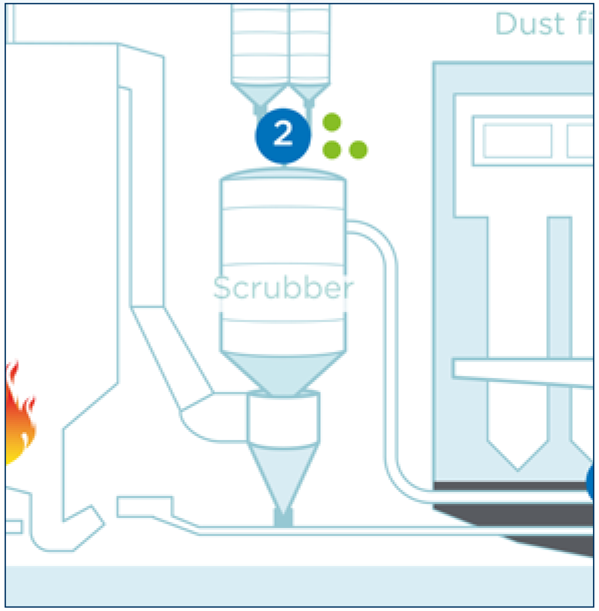
In order to adjust precisely the reagent injection in real time, we recommend the online monitoring of gas pollutants to be set before the injection point (see 9 ).

## CUSTOMER BENEFITS

- Avoidance of overdosing (cost reduction) or underdosing (non-compliance with specifications)
- Effective control of the material feed
- No installations in the flow
- Simple retrofitting option



# 2 MASS FLOW MEASUREMENT OF ABSORBENT




2 Activated carbon

A waste incineration plant produces exhaust gases during the incineration process. These gases need to be cleaned.

In order to bind dioxins activated carbon is pneumatically blown into the exhaust gas stream.

Apart from measuring the quantities the meter also detects the output of the rotary feeder before the blow line. That way any bridging of material in the silo outlet above the rotary feeder can be detected immediately.

| | |
|---|---|
| **Material:** | Activated carbon |
| **Quantity:** | 1 - 5 kg/h |
| **Installation place:** | Conveying air stream, exhaust gas cleaning |
| **Function:** | Volume measurement in the supply air flow of exhaust gas cleaning |

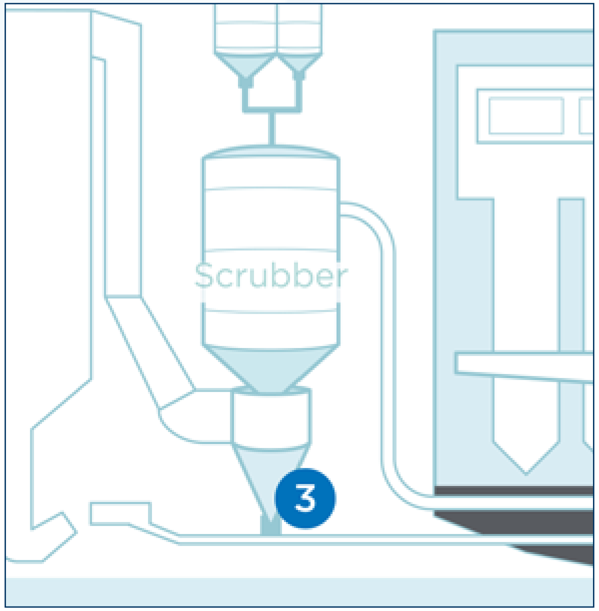
## SOLUTION

The PicoFlow is specially developed for measuring powder flow in transport lines with very low material concentrations. The measuring system delivers absolute values in g/h or kg/h. In the described application the dosing of activated carbon into the exhaust stream is required to be controlled. In order to adjust precisely the reagent injection in real time, we recommend the online monitoring of gas pollutants to be set before the injection point (see 9 ).
Furthermore the rotary valve, used for material dosing, requires to be monitored. The rotary valve can become clogged with material, therefore the material supply is interrupted at certain intervals. If the used PicoFlow continues to measure small material quantities, it can be assumed, that the internal of the rotary feeder requires cleaning.
The PicoFlow transmits the actual material volume to the plant control room.


## CUSTOMER BENEFITS

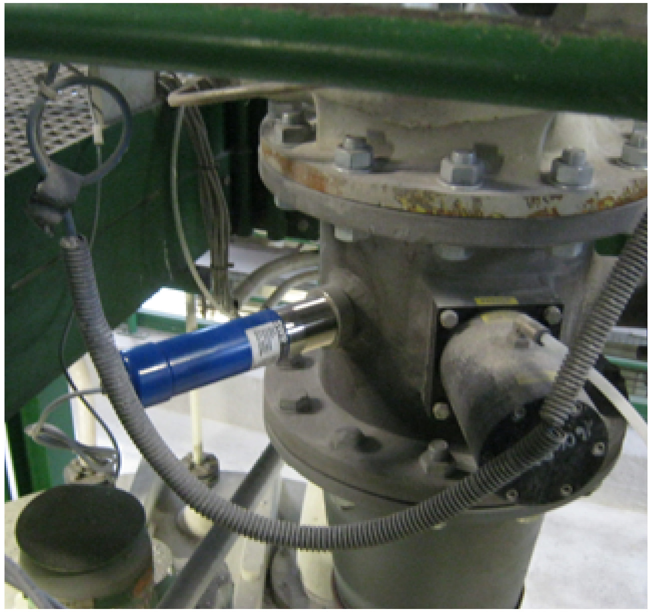
- Continuous flow measurement at low air/solid ratios
- Documentation of material consumption
- Enables reagent dosing
- Reduces reagent consumption

# 3 FLOW/NOFLOW DETECTION AT CYCLONE OUTLET




Cyclones are used to separate solids from the gas flow, for example after scrubbers.

It is important that the outlet of the cyclone is not clogged and that the material discharge after the rotary valve is ensured. A non-existent material flow after the valve indicates a blockage in the cyclone.



**Material:** Flue ash

**Installation:** Outlet of the cyclone

**Function:** Avoidance of clogging of cyclones

## SOLUTION

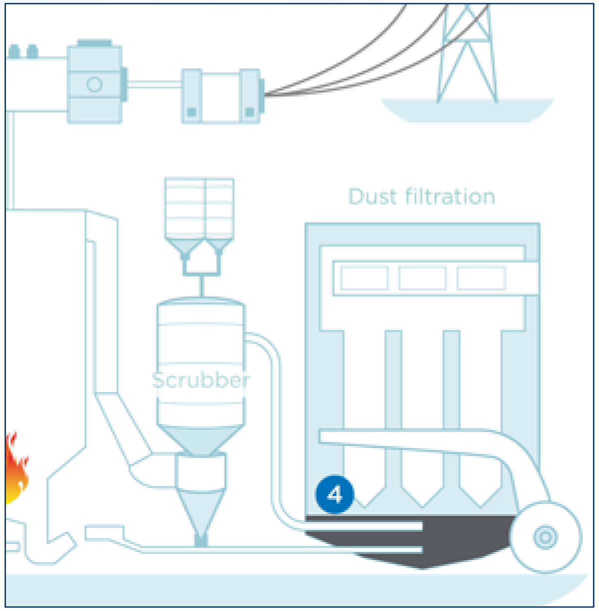
The FlowJam is a sensor that uses microwaves to reliably and quickly monitor any type of material flow.

The sensor is installed using a 1.5“ thread. It does not protrude into the cross-section and measures absolutely reliably even with material build up on the sensor front-end.

## CUSTOMER BENEFITS

- Fast monitoring of the material flow
- Easy retrofitting
- Clogging of cyclones can be prevented

## 4 ASH LEVEL DETECTION AT FILTER OUTLETS




All dust from the filters will fall down into the filter outlets.

It is important to avoid a material bridge building up above the rotary valve in the outlet.

If such bridging is not recognized the material will build up into the filter and probably plugs it.

**Material:** Ash

**Installation:** In the filter outlet

**Function:** Monitoring of material build up into the filter

### SOLUTION

The ProGap 2.0 sensor is a microwave barrier type sensor to detect any build up of material in the filter outlet.

The system consists out of a transmitter and receiver and does not protrude into the cross section.

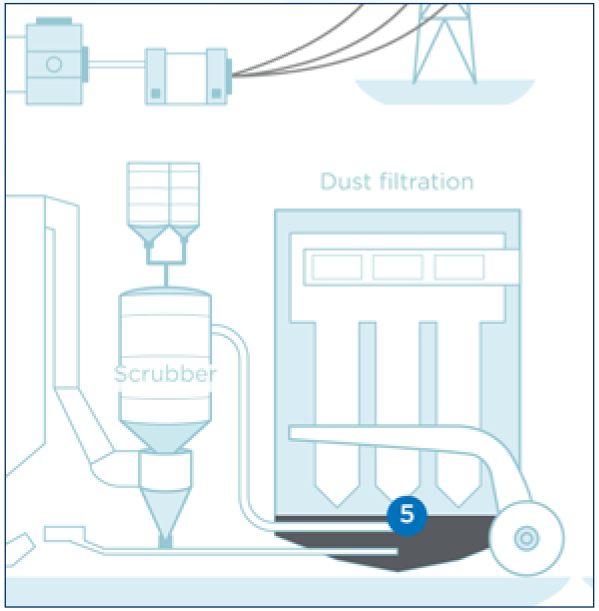
It is a very reliable method of detection compared to other solution as vibrating forks for instance.

Especially as it detects the entire width of the outlet.

### CUSTOMER BENEFITS

- Fast and reliable monitoring of material build up
- Easy retrofitting
- Avoids shutdown due to plugged filter outlets

# 5 FLOW DETECTION AT ASH TRANSPORTATION SYSTEM




Ash transportation in most cases is done by air slides systems. It is essential to ensure material flow inside the transportation system. Any plugging or interruption in the material flow must be avoided.

**Material:** Ash

**Installation:** In air slide transportation system

**Function:** Monitoring of continuous material flow

## SOLUTION

The FlowJam can be installed from the top of the upper conveying chamber.

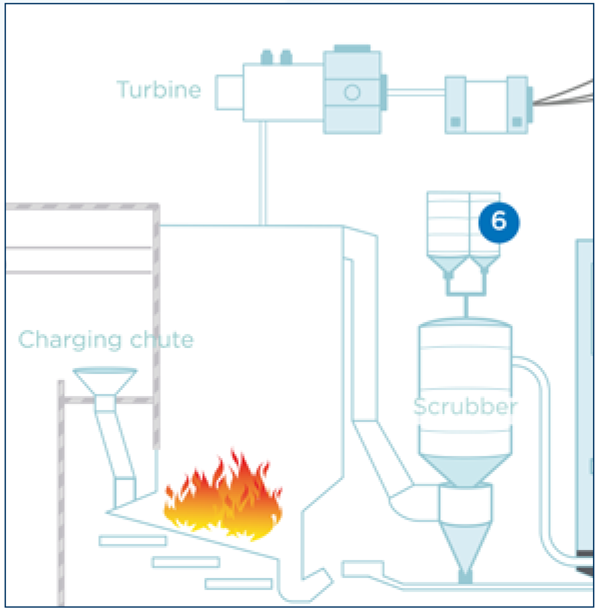
It will detect the flow contactless via a microwave beam hitting the material flow and defining Flow or NoFlow condition by evaluating the Dopplers effect.

The sensor is installed by using a 1.5“ thread. It does not protrude into the cross-section of the conveying system. The FlowJam is a reliable solution as it is not affected by material build ups on the sensor front-end.

## CUSTOMER BENEFITS

- Fast and reliable monitoring of material build up
- Easy retrofitting
- Avoids shutdown due to plugged filter outlets

# 6 CONTINUOUS LEVEL MEASUREMENT IN STORAGE SILOS



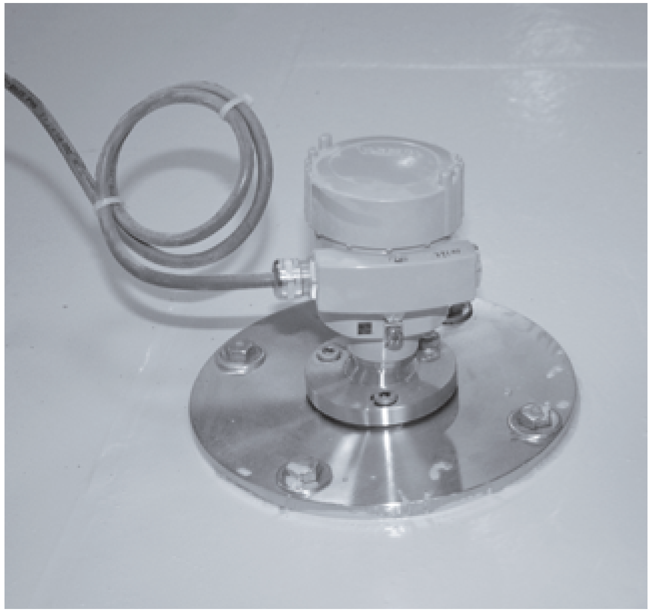

Reagents for the flue gas cleaning such as hydrated lime or activated carbon are stored in silos.

These bulk chemicals are delivered to the process by feeding into a pneumatic blow line.

For optimum process control, reliable level measurement is essential to ensure that adequate quantities of reagent are made available.

These kind of bulk chemical might be sticky and difficult to handle. Extreme dust generation and product build-up are the challenges.

That's why an advanced and reliable contactless level sensor complies with the requirements in this application.



**Material:** Hydrated lime or activated carbon

**Installation:** In storage silos

**Function:** Reliable level measurement to ensure that sufficient reagent is available

## SOLUTION

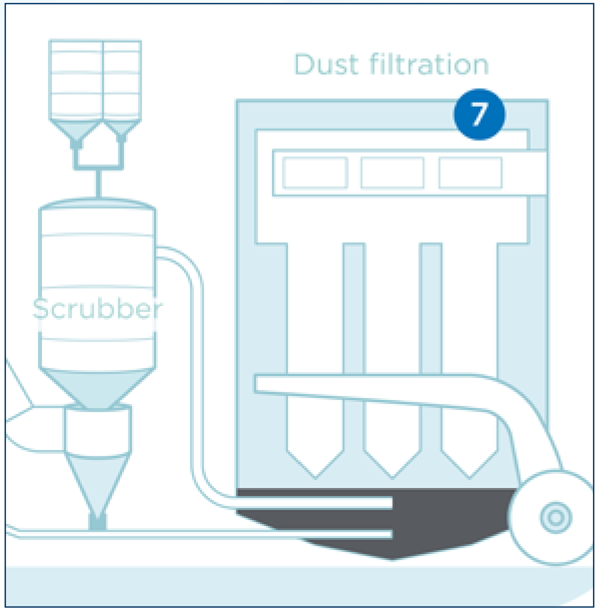
The Nico 120 is a non-contact level sensor using 80 GHz radar technology.

It can be mounted via different choices for process connection and is characterized by an excellent beam focusing which enables exact measurement even with heavy deposits on the silo walls.
The maximum distance it can measure is 120 m and process temperatures up to 200 °C.

## CUSTOMER BENEFITS

- Reliable measurement under all operating conditions
- Optimal control of storage product
- Wear and maintenance-free

## 7 SINGLE BAGHOUSE OUTLET MONITORING




To ensure baghouses are working under optimum performance conditions, the installation of dust monitors to continuously monitor and display particulate emissions provides valuable feedback on filter plant performance.

**Material:** Particulate emissions

**Installation:** Baghouse chamber

**Function:** Optimized baghouse performance to control particulate emissions

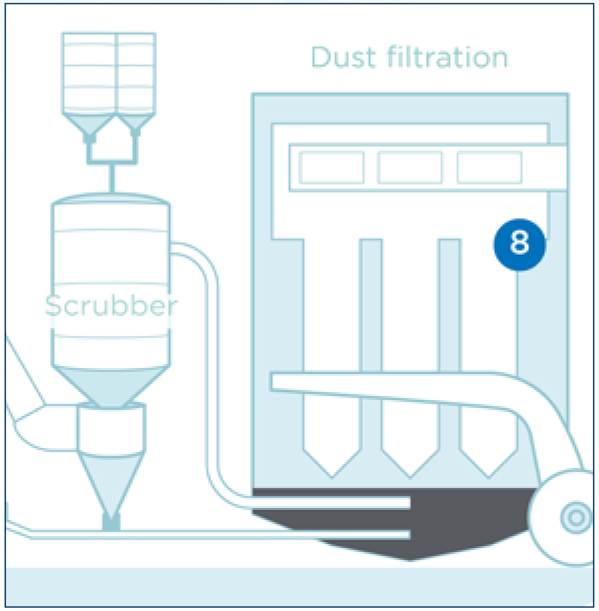
### SOLUTION

The VIEW 370 monitors dust levels from baghouse filters. The sensor is installed after the filter and measures the particulate levels immediately after the outlet. The proximity to the outlet and the capability to measure readings once a second provides pulse data from the baghouse cleaning cycle allowing operators to quickly identify increased emissions associated with a poorly performing baghouse or damaged filter media. The sensor communicates to a remotely loaded control unit where set-up, configuration, local display and output signals are available. Sensor self-checks to validate measurement integrity including zero, span/reference drift checks, probe contamination and communication checks are built-in.

### CUSTOMER BENEFITS

- Valuable feedback on filter plant performance
- Location of leaking and broken bags in fabric filters
- Reduced maintenance time and costs
- Increased emission control

# 8 PREDICTIVE BAG FILTER ROW MONITORING




The ability to predict and identify which bag filter row or chamber is likely to fail enables plant operators to achieve maximum service life from filters, reduce maintenance and increase production time while reducing and controlling the potential for large-scale emission events and the associated environmental impact.

Multi-chamber filter performance monitors in conjunction with ENVEA cloud services software accurately track dynamic dust emissions to allow remote and real-time observation of bag and cartridge condition, enabling the location of failing bag rows to be anticipated.

**Material:** Particulate emissions

**Installation:** Multi-compartment baghouse

**Function:** Optimized baghouse performance to control particulate emissions

## SOLUTION

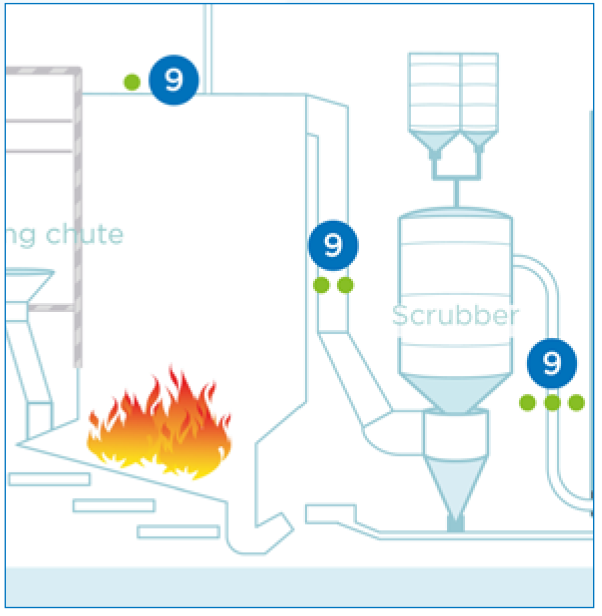
The LEAK LOCATE 320 and the LEAK LOCATE 662 Multi-chamber Filter Performance Monitors provide remote observation of bag and cartridge filter condition. Installed in the outlet of each compartment, the network of sensors connect to a controller which provides a large graphical user interface and onward communication to a PC or PLC network.

The system is supported by ENVEA cloud services software for downloading, displaying, analyzing and reporting data with advanced features for monitoring emission trends and identifying failing or broken bags. The addition of the Predict software module enables structured and predictive baghouse maintenance using real-time data.

## CUSTOMER BENEFITS

- Early prediction and location of leaking and broken bags in fabric filters
- Reduced unplanned filter outages resulting in reduced maintenance and cost
- Increased emission control

# 9 PROCESS GAS MONITORING - COMBUSTION OPTIMIZATION




Incineration has a number of outputs such as the ash and the emission to the atmosphere of flue gas. Before the flue gas cleaning system, if installed, the flue gases may contain particulate matter, heavy metals, dioxins, furans, sulfur dioxide, and hydrochloric acid. If plants have inadequate flue gas cleaning, these outputs may add a significant pollution component to stack emissions.

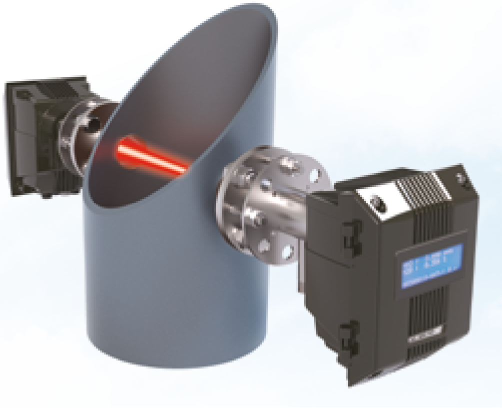
9 • Gas monitoring at the boiler outlet

Combustion optimization is not only a question of power. Monitoring the flue gases on a boiler or burner, makes sense ecologically as well as economically. Poor combustion can produce corrosive compounds and ash deposits in the boiler itself. To avoid damage due to these by-products, combustion must be accurately evaluated by monitoring mainly the $O_2$ and the CO.

**Material:** Combustion gases: $O_2$ and CO

**Installation:** At the boiler outlet

**Function:** Reliable and accurate monitoring of $O_2$ and CO for combustion control optimization



## SOLUTION

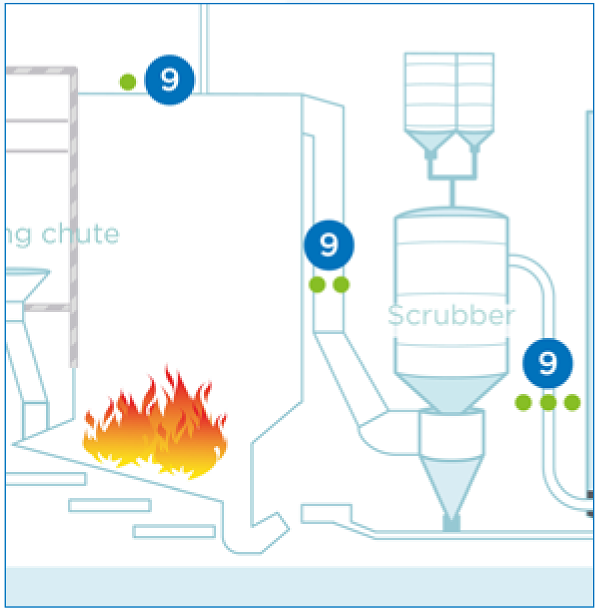
Extractive multi-gas NDIR solutions such as the MIR 9000H, the MIR-IS or the in-situ monitor LAS 300-XD based on the TDL technology are used for online monitoring of gas parameters. and able to measure in real time and simultaneously these 2 species. If the use of in-situ system is not suitable, the new extractive gas analyzer MIR 9000e will also be perfectly adapted to measure $O_2$ and CO.

Both these monitors offer excellent stability, high selectivity and accuracy, and are suitable for harsh environments, such as acid gases, high gas concentrations, etc.

## CUSTOMER BENEFITS

- Measuring continuously the $O_2$ and CO allow for immediate adjustment of the air injection and better control of feeders, and so to optimize the efficiency of the combustion process.
- Reduces the long-term impact of the CO corrosion load to the boiler wall.
- Furthermore, the energy efficiency factor in incineration plants has become a key parameter for assessing the amount of energy produced and converted into electrical energy or steam. Meeting or exceeding the energy efficiency thresholds of this formula allows high efficiency installations to benefit from a status of "recovery" rather than "disposal".

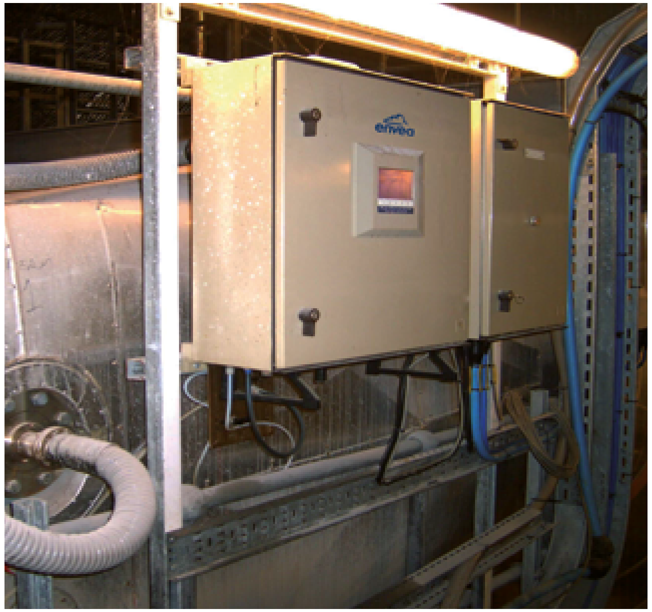
# PROCESS GAS MONITORING




9 Acids abatement

During the incineration process when waste is burned, acids are produced due to the plastics or other materials contained in the waste. Neutralization/absorption of these species prior to the dust filtration treatment is essential to avoid damage to the filter media and excess of emissions. This operation is carried out by injecting a quantity of lime, limestone slurry, active carbon powder or sodium bicarbonate powder proportional to the pollutant concentrations (dioxins, furans, heavy metals, acids).

In order to adjust precisely this pollutant reduction in real time, on-line monitoring of HCl, NOx or $SO_2$ (precursor of $SO_3$ and sulfuric acid derivates) must be set on the process, before the injection point. Measuring the water content would allow the detection of a possible leak in the boiler.



**Material:** Raw gases
HCl, NOx, $SO_2$, (CO, $O_2$, $H_2O$)

**Installation:** Before the injection point

**Function:** Online monitoring of gas parameters allowing for precise adjustment of absorber/ neutralizer injection, to comply with emission regulations (ELV)

## SOLUTION

Extractive multi-gas NDIR solutions such as the MIR 9000H, the MIR-IS or the in-situ monitor LAS 300-XD based on the TDL technology are used for online monitoring of gas parameters.

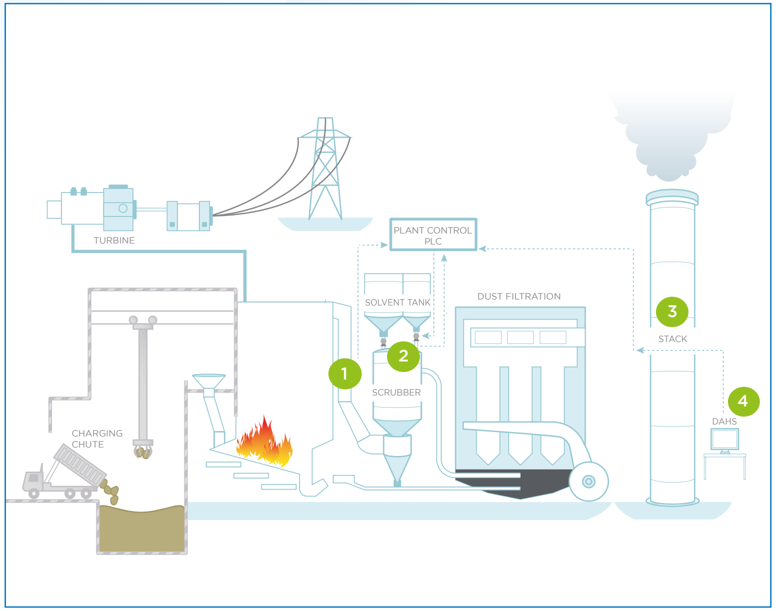
For the Mercury abatement control, the SM-5-R online mercury analyzer is used.

To control precisely the absorber/neutralizer injection, the use of a SolidFlow 2.0 or PicoFlow sensor linked to the gas monitors is helpful.

## CUSTOMER BENEFITS

- Important savings on reagent consumption and related costs
- Less reagent injected leads to a reduction of bottom ash quantity. Consequently, treatment costs of this solid outputs, most of time considered as hazardous, are significantly reduced.
- Improved process robustness and reduced maintenance costs
- Reduction of stack emissions and therefore compliance with regulatory ELV limits and air pollution reduction
- Measuring the $H_2O$ content would avoid dampness of the reagent, which may lead to pasty deposits on the treatment filters.

# 9 PROCESS GAS MONITORING




9 •• Mercury abatement

Mercury can be produced due to the batteries or other materials contained in the waste when it is burned. It has become a key topic for incinerator operators in the light of the new BREF incineration. It indeed sets BAT Associated Emission Levels (BATAELs) to be met by December 2023, requiring, in consequence, incinerators to include the continuous monitoring of mercury in their process. Its neutralization/absorption prior to the dust filtration treatment is carried out by injecting a quantity of lignite coke oractivated carbon to the pollutant concentrations. To precisely adjust this pollutant reduction in real time, online monitoring of Hg must be set on the process before the injection point.

**Material:** Hg

**Installation:** Before the injection point and in the stack

**Function:** Online monitoring of gas parameters allowing for precise adjustment of absorber/neutralizer injection, to comply with emission regulations (ELV)

## SOLUTION

The SM-5-R allows the continuous measurement of Hg upstream of the flue gas treatment (**1**) and SM-5 in the stack for Hg CEM on low concentrations (**3**).

The SM-5 provides the mercury speciation (Hg° / Hg2+ / Hg total) which allows a better knowledge of the flue gas real composition and a possibility to better manage the neutralization process.

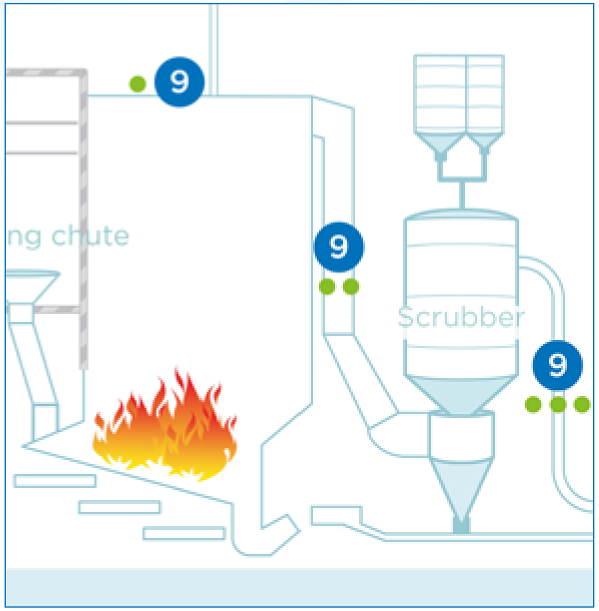
Thanks to the SM-5 and the equipment for real-time mass flow measurement of absorbent (**2**), ENVEA can offer a global solution for Hg measurement in Waste-to-Energy process.

ENVEA's DAHS system (WEX software) also provides trends and predictive data guaranteeing an optimized injection process of reagents (**4**).

## CUSTOMER BENEFITS

- Compliance with regulation (BREF incineration) and ELV
- Important savings on reagent consumption and related costs
- Less reagent injected lead to a reduction of bottom ash quantity. Consequently, treatment costs of this solid output, considered as hazardous, are significantly reduced.
- Improved process robustness and reduced maintenance costs

# 9 PROCESS GAS MONITORING




9 ●●● NOx abatement control

In order to achieve compliance with NOx emission limits the application of ammonia or derivatives of ammonia (e. g. urea) as a reduction agent has proved successful.

The nitrogen oxides in the flue-gas basically consist of NO and $NO_2$ and are reduced to $N_2$ and water vapour by the reduction agent. Two processes are important for the removal of nitrogen from flue-gases - selective non-catalytic reduction (SNCR) and selective catalytic reduction (SCR). In both these systems, the flow rate and control of $NH_3$ must be continuously adjusted and controlled to prevent excess $NH_3$ emissions (slip), to reduce environmental impact and cost of reagents. To optimize this process, it is essential to use an analyzis system for simultaneous and continuous monitoring of $NH_3$ and/or NOx.

**Material:** Gases, $NH_3$ and or NOx

**Installation:** Before SCR treatment.
If SNCR, this measurement can be done at the boiler outlet (9.2)

**Function:** NOx reduction and $NH_3$ slip control to comply with emission regulations (ELV)

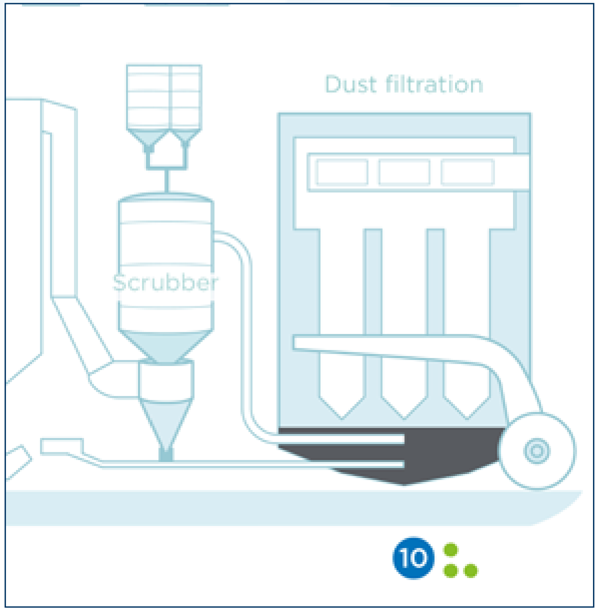
## SOLUTION

For SCR, the use of the NDIR heated and extractive multi-gas analyzer MIR 9000H, offering the capability of measuring the $NH_3$+$H_2O$ or $NH_3$+NOx+$H_2O$ in parallel is recommended. For information, the same analyzer can measure additionally other parameters such as $H_2O$, CO and $O_2$.
If sole the measurement of $NH_3$ is to be made, the use of the Cross Stack TDL sensor LAS 300 XD-NH3 offers real time monitoring.
As the SCR requires zero dust level, the complementary use is recommended, before the SCR, of a dust monitor, such as a View 370 or DM 170.

## CUSTOMER BENEFITS

- Avoidance of reagent overdosing (cost reduction) or underdosing (non-compliance with NOx ELV)
- Improved process robustness and reduced maintenance costs
- Reduction of stack emissions and therefore compliance with regulatory ELV limits and air pollution reduction

# 10 PROCESS LEAKAGE DETECTION




10 • Particulate leakage detection

A waste incineration plant burns waste. A final product of this incineration process is filter dust, which is stored in silos before being evacuated.

For the ambient air monitoring of the silos, conveying lines and connected rooms, plant managers look for a maintenance-free way to detect dust leaks and malfunctions.

Optical techniques were not considered because of the degree of dust contamination in this part of the plant and the therefore expected cleaning and maintenance effort.

The monitoring device should detect limit values. The overstepping of these limit values should be displayed promptly in the control room.


| | |
|---|---|
| **Material:** | Filter dust |
| **Installation place:** | Beneath convey lines to storage silos for filter dust |
| **Function:** | Monitoring and protection of air particles in remote parts of the plant |

## SOLUTION

The AirSafe 2 monitors the dust concentration in ambient control and process locations, silo areas, boiler houses and workstations. The device operates on the triboelectric measuring principle and is low maintenance in comparison with optical methods.

In this application, the ambient air of a silo, where filter dust from the incineration process is stored, and its convey lines should be monitored.

Here the AirSafe 2 is used for the monitoring and the protection of production facilities. In case of a violation of the predetermined limit values the AirSafe 2 gives a signal to the control room.

For explosive atmospheres the EX version (gas Ex zone 1, dust Ex zone 21) can be used.


## CUSTOMER BENEFITS

- Fast response of the sensor in case of exceeding limit levels
- Improvement of plant security and prevention of plant damages
- Easy monitoring of remote system components
- Health and safety issues
- Avoidance of explosion risks

# 10 PROCESS LEAKAGE DETECTION


10 Odors & process gas leakage detection

There are many variations to the incineration process and plants for all kinds of waste: solid waste, sewage, hazardous waste, medical waste, etc. However, they all feature diffused sources (as opposed to conveyed sources, such as stacks) of odorous, non-odorous gases and particulates that can be unhealthy. These sources don't have a defined waste air flow, therefore the emission of odors occurs by diffusion / convection from odorous surfaces exposed to the atmosphere such as landfills, ponds, tanks, buildings, or from gas leaks from non-air-tight ducts or equipment.

The monitoring of gas pollutants and particulates in ambient air aims at preventing complaints from the neighbourhood, protecting workers and neighbours' health, and ensuring an efficient and environmentally friendly operation of the site.

**Material:** Particulates and gases in ambient air such as $NH_3$, $SO_2$, $H_2S/CH_4$, VOC, etc.

**Installation place:** Close to the diffused sources

**Function:** Continuous and real-time monitoring of gas pollutants and PM in ambient air

## SOLUTION

ENVEA offers turnkey solutions for real-time on-site air quality monitoring. They include fixed stations and mobile labs featuring a full range of eco-designed, connected reference analyzers that are certified and approved by major labs and organizations around the world. These can be wireless coupled to a network of micro-sensor based Cairnet mini stations, powered by solar panels and located across the site. Data acquisition and management is centralized thanks to ENVEA's cloud-based systems, so you can access your data anywhere at any time via the web on your PC or smartphone.

## CUSTOMER BENEFITS

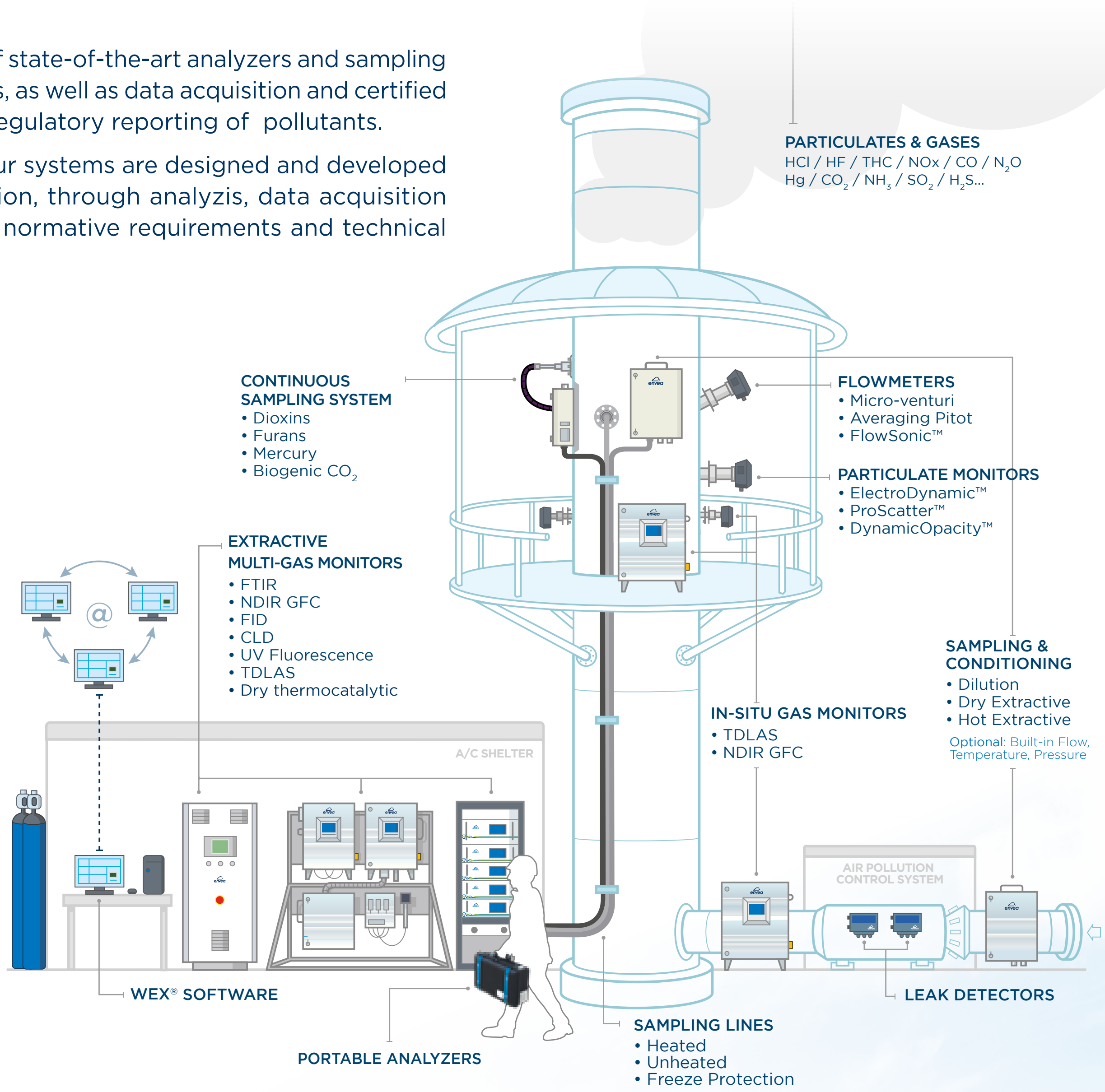
- Identification of pollution sources
- Quick turnaround and implementation of countermeasures in case of detected on-site pollution thanks to multi-location and real-time monitoring of ambient air
- Protection of workers and neighbours' health
- Increased plant efficiency

# 11 STACK COMPLIANCE MEASUREMENT

ENVEA is recognized worldwide for its complete range of state-of-the-art analyzers and sampling systems for continuous monitoring of industrial emissions, as well as data acquisition and certified software solutions for the acquisition, processing and regulatory reporting of pollutants.

Based on decades of extensive industrial experience, our systems are designed and developed as **complete, turnkey solutions**. From sample extraction, through analyzis, data acquisition and reporting, each system is configured to meet the normative requirements and technical constraints of each of our customers.


For further information please refer to the CEMS catalogue



# A STRONG GLOBAL PRESENCE

ENVEA is a leading manufacturer of cutting-edge on-line monitoring solutions for industry, laboratory and local & government institutions.

Faithful to the principles on which it was founded – innovation & quality, ethics & social responsibility, shared values & transparency – the group is committed to providing you with solutions and assistance at the highest standards in order to comply with applicable regulations; as well as the optimization of industrial processes for an improved efficiency, significant savings of raw materials & energy and the reduction of environmental impact.


Our worldwide references guarantee a perfect understanding of your needs and ability to manage a vast range of applications:

More than 40.000 air quality monitors are measuring the pollution of cities worldwide: Barcelona, Seoul, Rio de Janeiro, Istanbul, Mecca, New Delhi, Moscow, Paris, Budapest, Abu Dhabi, Bangkok, Beijing...

Over 28.500 processes & emission sources are monitored worldwide across a broad range of industries such as: chemical, minerals, metal, waste to energy, incineration, food and pharma, engine manufacturers, or wood industry.

Process - Emissions - Ambient

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