

DP Flue Gas Cleaning Solution

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DP's specialized Flue Gas Cleaning team is based in the Midlands UK. The team has decades of experience in the industry and an excellent track record in solution design, project management and installation. Global and local emissions standards for biomass and waste-to-energy power plants are becoming increasingly rigorous. DP's experts are dedicated to meeting or exceeding these requirements, using the latest research and product designs.

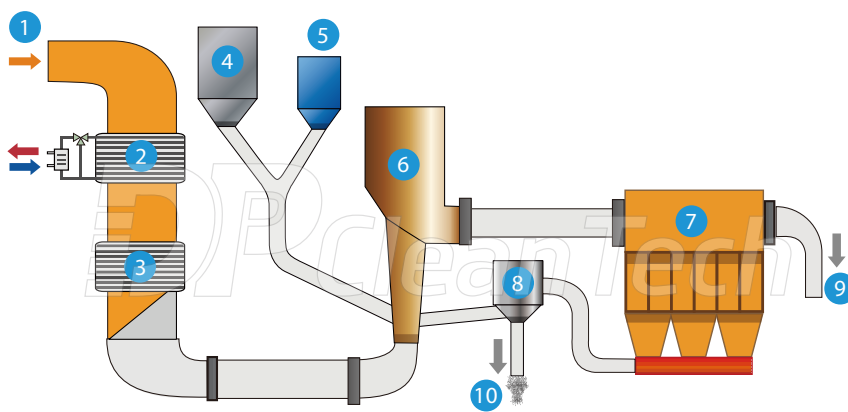
The team's remit is to provide advice and product solutions to a broad range of waste-to-energy power plant developers, owners and operators to ensure the lifetime integrity of emissions credentials for their projects. As part of the global DP Group, the FGC team benefits from expertise gained from numerous in-house projects and can leverage its supply chain

to deliver cost effective and performance guaranteed FGC solutions to owners, sponsors and operators around the world.

The combustion of solid wastes, such as municipal or industrial waste, or RDF (Refuse Derived Fuel), generates flue gases that contain pollutants. The composition of flue gas depends on the chemical make-up and the preparation of the waste, as well as the operating parameters of both the furnace and the energy recovery boiler. Typically, the following categories of pollutants are present in the flue gas before cleaning: acid components, dust, heavy metals, nitrogen oxides, polyaromatic compounds (e.g. dioxins, furans, PCB) and products of incomplete combustion (e.g. CO, CxHy). To prevent their release to ensure compliance with the prevailing legislation, the installation needs to be equipped with a highly efficient flue gas cleaning system.

DP Flue Gas Cleaning Advantages and Benefits

- Minimal maintenance cost and ease of operation
- Minimal number of moving parts
- Minimal plume formation
- Reactor tower for optimum contact
- Recirculation of residue for reduced reagent consumption
- Tailored designs to optimise spatial and pollutant requirements
- Increased energy recovery
- Built-in redundancy allows online maintenance
- Improved PAC efficiency
- Improved resistance to pollutant peaks at inlet



- | | |
|-------------------|-----------------|
| 1 Inlet | 7 Filter |
| 2 Economizer | 8 Recirculation |
| 3 Flue gas cooler | 9 Outlet |
| 4 Lime | 10 Residue |
| 5 P.A.C. | |
| 6 Reactor | |

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Process Description

- Flue gas entering the reactor tower is cooled to 140°C.
- Flue gas enters the reactor tower where hydrated lime (and activated carbon) reagents react with the pollutants in the flue gas.
- On entering the filter, trapped particles form a dust cake, allowing the neutralization and adsorption to happen.
- Captured product is recycled back into the tower via the recirculation surge hopper and screw conveyor, allowing un-activated reagent to be re-utilized.
- Used product is discharged and collected.
- Treated flue gas exits the filter at a temperature of approximately 135°C and is finally discharged through the stack.
- Continuous Emissions Monitoring system (CEM) is equipped in the exhaust stack to measure pollutant levels in the flue gas and to ensure compliance with local emissions limits.

About DP UK Team

Our UK team has a track record of over 20 years of delivering successful Flue Gas Cleaning (FGC) plants throughout the UK and across the globe. The team operates as a stand-alone business that offers FGC solutions to projects using a broad range of technologies, mainly for waste-to-energy plants. DP UK also supports projects undertaken across the DP CleanTech group, and has developed systems to enhance DPCT's proprietary combustion grate and boiler technologies. On these, DP UK works closely with the group's design, engineering and manufacturing arms in Denmark, Poland, China and Southeast Asia.



RANGE OF PRODUCTS

DP CleanTech designs and engineers a complete range of components for biomass and other WtE power plants including:

- Flue gas cleaning systems
- Air pre-heaters
- Flue gas ducts
- I.D. fans
- Air ducts
- Silencers
- Ash removal systems
- Pressure parts

EXPERIENCE

Contact us to request a comprehensive reference list. Our experience includes:

- Forestry biomass power plant operators
- Waste to energy plant operators
- Other biomass and waste plant operators
- Gasification of biomass and municipal waste
- Upgrade of existing FGC systems

MATERIALS

The quality of materials and manufacturing are guaranteed to meet prevailing international standards. By utilizing proven corrosion resistant materials and technology, we significantly extend the product lifecycle thereby enhancing the cost effectiveness of all our products.



MANUFACTURING

DP has its own manufacturing facility in Europe as well as a longstanding and trusted global supply chain. Designs are tailored according to customer needs and are built using modular components, allowing greater flexibility to manage costs.

CONTACT US

DP has 7 offices around the world in 6 countries – China, Denmark, Poland, Thailand, UAE and UK.

To ensure that we can address your needs appropriately, please email info@dpcleantech.com for enquiries or further information.

