



# IMPROVE BOILER EFFICIENCY

*with our range of bed materials for Bioenergy*



*Material solutions advancing life*

# IMPROVE BOILER EFFICIENCY

with our range of bed materials for Bioenergy

As rapid growth in bioenergy limits the availability of traditional wood-based fuel, the industry is seeing a sharp increase in the use of high-alkali feedstocks such as agricultural and domestic waste.

But burning high-alkali materials causes increased bed agglomeration, fouling and corrosion, resulting in more shutdowns and reduced overall boiler efficiency. It can also create higher levels of NOx emissions.

To combat these issues, the choice of boiler bed material is critical. That's why Sibelco has developed the FLOWGARD® range of minerals and additives. Our solutions enable the use of agricultural and domestic waste as an efficient alternative to wood-based feedstock, helping to improve heat transfer and temperature control whilst limiting or eliminating unwanted side effects.

## FLOWGARD® KAOLIN

The addition of FLOWGARD® kaolin to a boiler bed mix helps to minimise or eliminate slagging, fouling and corrosion caused by the use of alkaline feedstocks.

Burning these types of feedstocks results in alkaline metals such as sodium, potassium and calcium being released into the flue gas as vapor. This causes complex reactions including dissolution, sulfation and sintering.

With an alumina content of ~35%, Sibelco kaolin works as an alkali sorbent, capturing and encapsulating alkali elements within compounds which remain solid at boiler temperatures before exiting as fly or bottom ash. Its effectiveness enables the efficient burning of otherwise hard to use fuels, resulting in significant cost savings.

FLOWGARD® kaolin is mined and processed at our plants in Devon (UK) and Hostun (France).

## FLOWGARD® SILICA SAND

We offer a wide range of premium-quality silica sands, accurately calibrated to ensure physical properties in line with customer specifications.

FLOWGARD® silica is used by biomass operators across Europe as a high-performance bed material for the efficient combustion / gasification of low alkali fuels.

## SCOREX® CALCIUM SILICATE

To reduce dependence on primary raw materials such as sand, we have developed SCOREX® - an innovative, more sustainable bed material made from recycled blast furnace slag.

SCOREX® rejects impurities, reduces bottom ash and causes less boiler erosion, thereby increasing the lifespan of both the fluidized bed and the boiler.

## GREENFLOW™ OLIVINE

Drawn from Sibelco's uniquely pure olivine deposit in Åheim, Norway, GREENFLOW™ is a high-performance bed material for both CFB and BFB boilers.

As a magnesium iron silicate, GREENFLOW™ has a much higher resistance to alkaline fuel sources than sand. It therefore limits the impact of reaction problems such as agglomeration, fouling and corrosion.

The catalytic properties of GREENFLOW™ help to increase combustion efficiency and its use enables boiler operators to reduce costs by burning higher volumes of agricultural and domestic waste feedstock whilst using less bed materials.

**Key advantages of GREENFLOW™ over standard bed materials:**



# WHY CHOOSE SIBELCO?

*Our portfolio of performance bed materials is supported by in-depth technical knowhow, helping you to achieve maximum boiler efficiency.*

## GLOBAL PRESENCE – LOCAL MINDSET



With operations in 31 countries, we deliver local solutions to customers worldwide. We leverage our extensive network of quarries, processing plants and warehouses to deliver the best material solutions to your door.

## SUSTAINABLE SOLUTIONS



Founded in 1872 and still privately owned, we always take a long-term view. We invest for the future to secure a long-term supply of high-quality materials, always ensuring that economic growth is balanced with environmental stewardship and social responsibility.

## CONSISTENT QUALITY



As well as the natural purity of our mineral-based materials, rigorous quality control at each stage of processing and delivery ensures that our products meet your exact specifications to deliver optimal performance every time.

## SPECIALIST SUPPORT



Our dedicated team provide you with the highest standards of technical support and customer care via our network of laboratories and sales offices.

## FIND OUT MORE

To learn more about our range of bed materials, please get in touch:

Web: [www.sibelco.com/renewable-energy](http://www.sibelco.com/renewable-energy)

Email: [renewableenergy@sibelco.com](mailto:renewableenergy@sibelco.com)

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