

# A TEC

## INNOVATIVE TECHNOLOGIES FOR TAILOR-MADE SOLUTIONS



A TEC  
G R O U P

A Member of LOESCHE Family



### A TEC Consulting

Increasing energy costs, stricter environmental regulations, increasing production costs and intense global competition are the driving forces for change in the cement industry.

The scarcity of energy sources and the increasing concern about chemical additives require a constant optimization of the cement industry's pyroprocess and grinding processes.

In the past twenty years, A TEC has pioneered the development of state-of-the-art technologies, which are patented worldwide, to optimize the entire pyroprocess. This was realized through high investments in our own products and the permanent improvement of the entire pyroprocess.

- Studies for Plant Engineering
- Economic analyses
- Project Management

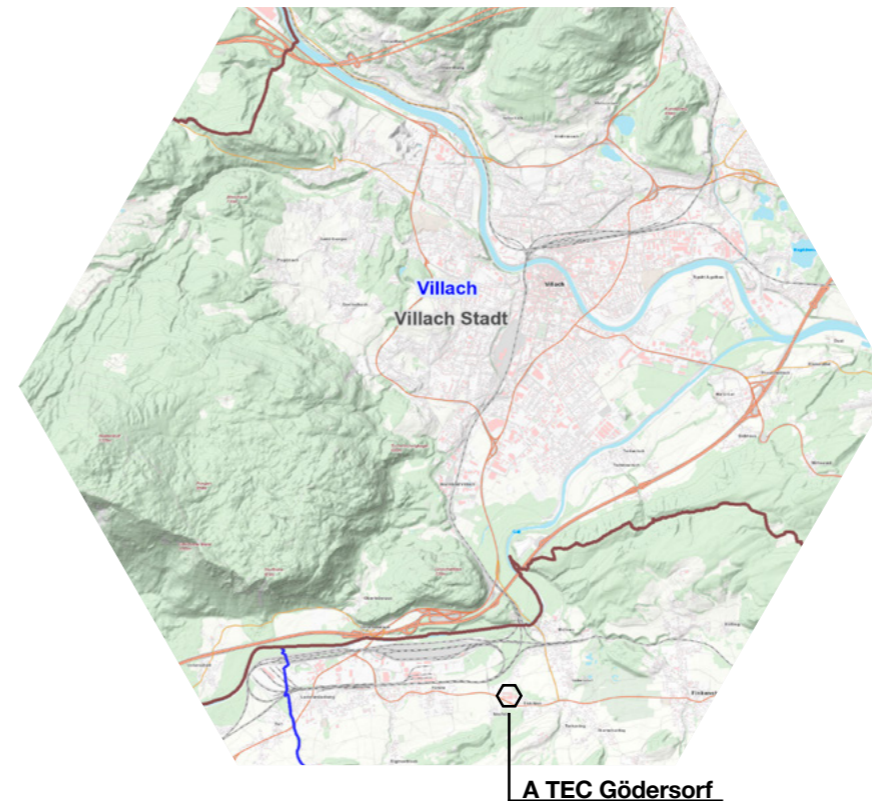
### A TEC Pyroprocess Engineering:

Worldwide unique process know-how paired with strategic partnerships in various process technologies are providing you with the global technological leading pyroprocess technology in the cement industry.

A TEC is running the world's most advanced Pilot Plant for preheater and cyclone optimization in the A TEC Process Center Austria. This is the guarantee that only highly engineered products and breakthrough process technologies are utilized in projects.

The result: A TEC supplies special solutions to turn-key pyroprocess plants. Drastic reduction of energy costs, significant increases in efficiency and the fulfilment of environmental requirements are reality.

- Significant efficiency improvements
- Drastic cuts in energy consumption
- Compliance with environmental limits



### Process Center Austria

A TEC stands for continuous research & development with universities, research institutes and industrial partners.

Constant refinement of existing patents as well as development of new products and processes ensure that A TEC stays in the global leading position in cement pyroprocess technology.





## THE TECHNICAL MASTERPIECE FOR EFFICIENCY INCREASE AND REDUCTION OF ENERGY COSTS.

HURRICLON®



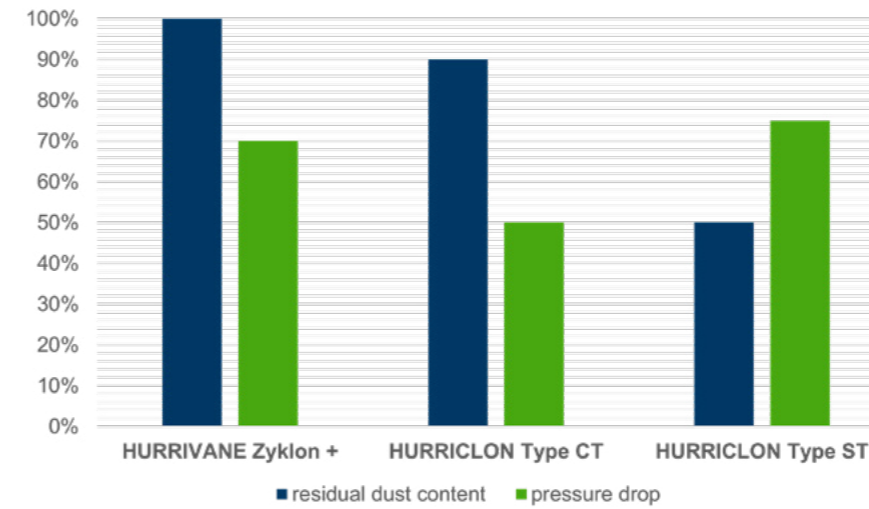
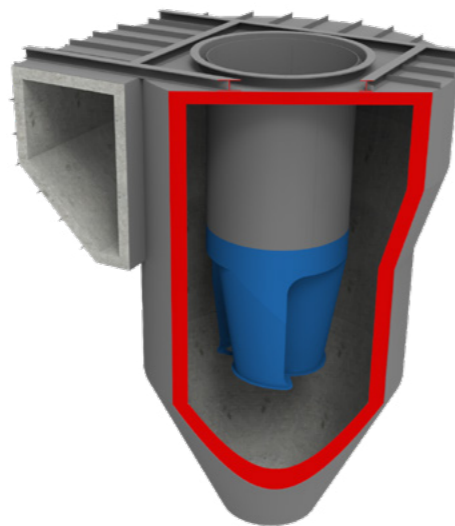
### Pressure Drop Reduction and Efficiency Increase.

Optimization becomes reality with the worldwide patented high-performance cyclone HURRICLON® and the world's best pressure drop venturi HURRIVANE® from A TEC.

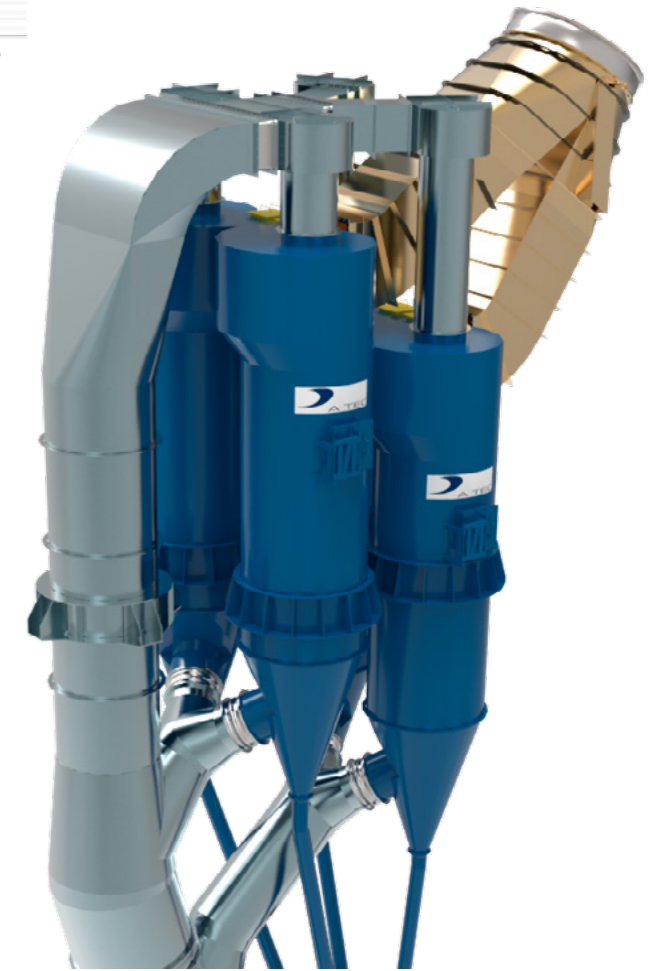
A TEC develops a tailor-made concept for the optimization of energy demands, efficiency and fulfilment of environmental requirements.

Optimization becomes reality with the worldwide patented high-performance cyclone element HURRICLON® and the world's best pressure drop venturi HURRIVANE® from A TEC.

HURRIVANE®



HURRICLON® CT + ST und HURRIVANE® are improving efficiency and pressure drop by up to 50% compared to conventional cyclones.





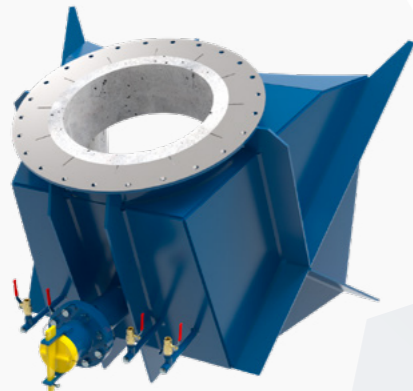
### EFFICIENCY INCREASE WITH LOWER ENERGY COSTS.

**The weakest Link in the Chain determines its overall Strength.**

For A TEC process optimization means to look at the whole pyroprocess, to calculate optimization potentials and to intervene at the right places.

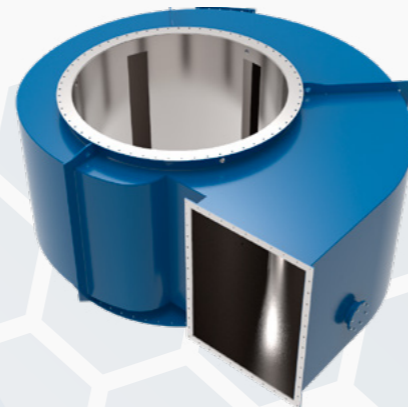
A TEC's longtime experience and more than 600 successfully completed projects are proving competence and technological leadership.

Our process engineers are constantly developing existing and new products and processes in our worldwide unique Pilot Plant.



#### A TEC SPLASH BOX

The V-shaped chamber dispenses cement meal evenly to optimize heat exchange. No pressure drop increase in the downcomer duct.



#### A TEC REDUCLOR®

The most efficient Bypass Technology. Reduction of bypass dust through low gas intake velocity and use of the A TEC maintenance-free quenching chamber.



#### A TEC PENDULUM FLAP

For maximum Tightness and higher Performance. Easily adjustable counterweights ensure 100% tightness and process safety. The possibility to completely swivel the back cover out enables quick maintenance without dismantling.



#### A TEC TERTIARY AIR GATES

For the most efficient calciner burner operation. Innovative design features to ensure continual availability for operating point adjustment.



### Raw Meal Grinding

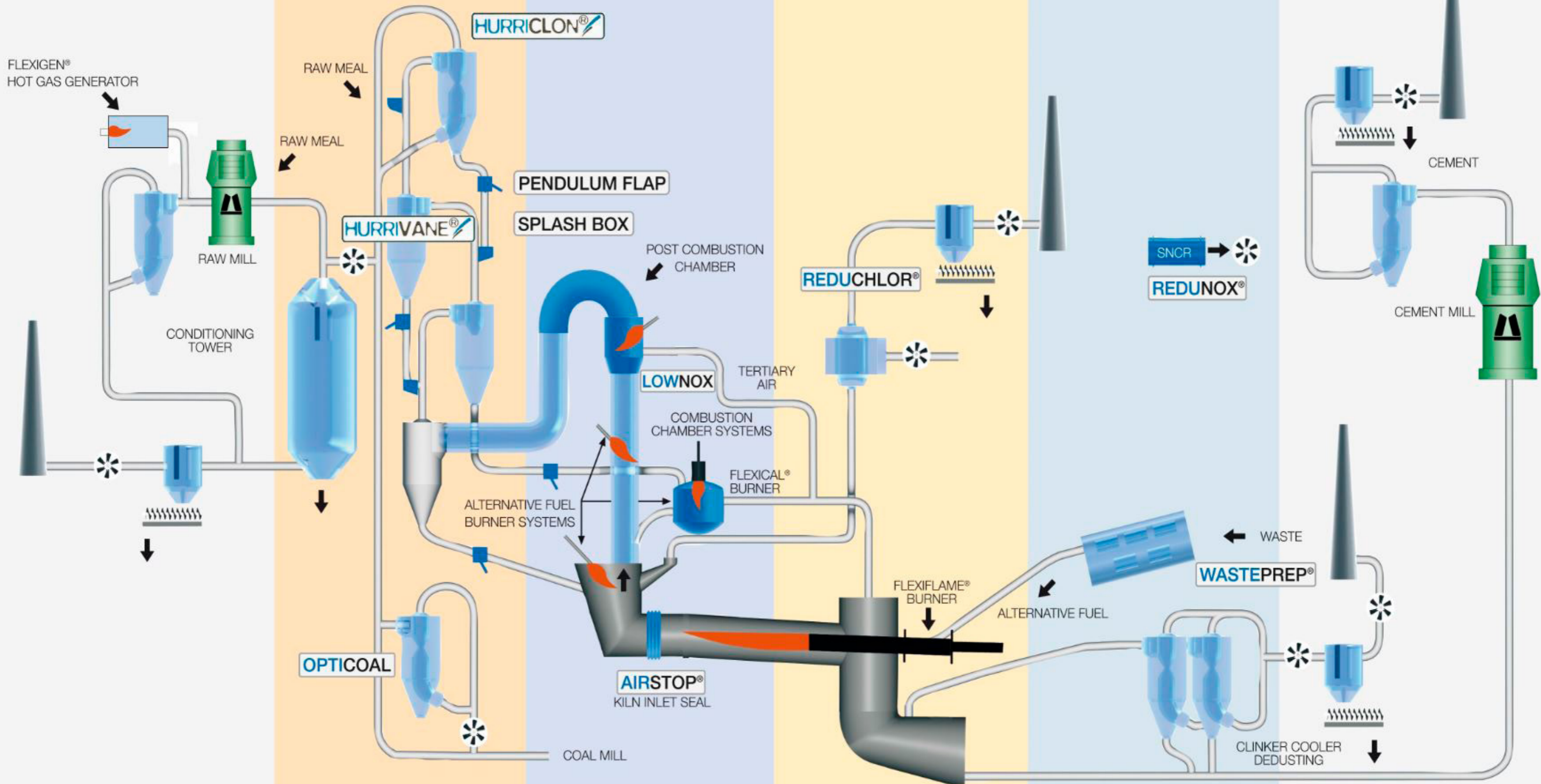
### Preheater

### Calciner

### Bypass

### Environmental Process Technologies

### Cement Grinding





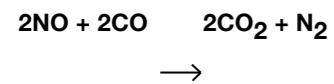
### ENVIRONMENTAL PROCESS ENGINEERING

#### Improvement of Environmental Balance.

The use of modern and innovative technologies in combination with a worldwide leading process know-how is offering significant potential for the reduction of environmental impacts in the cement industry.

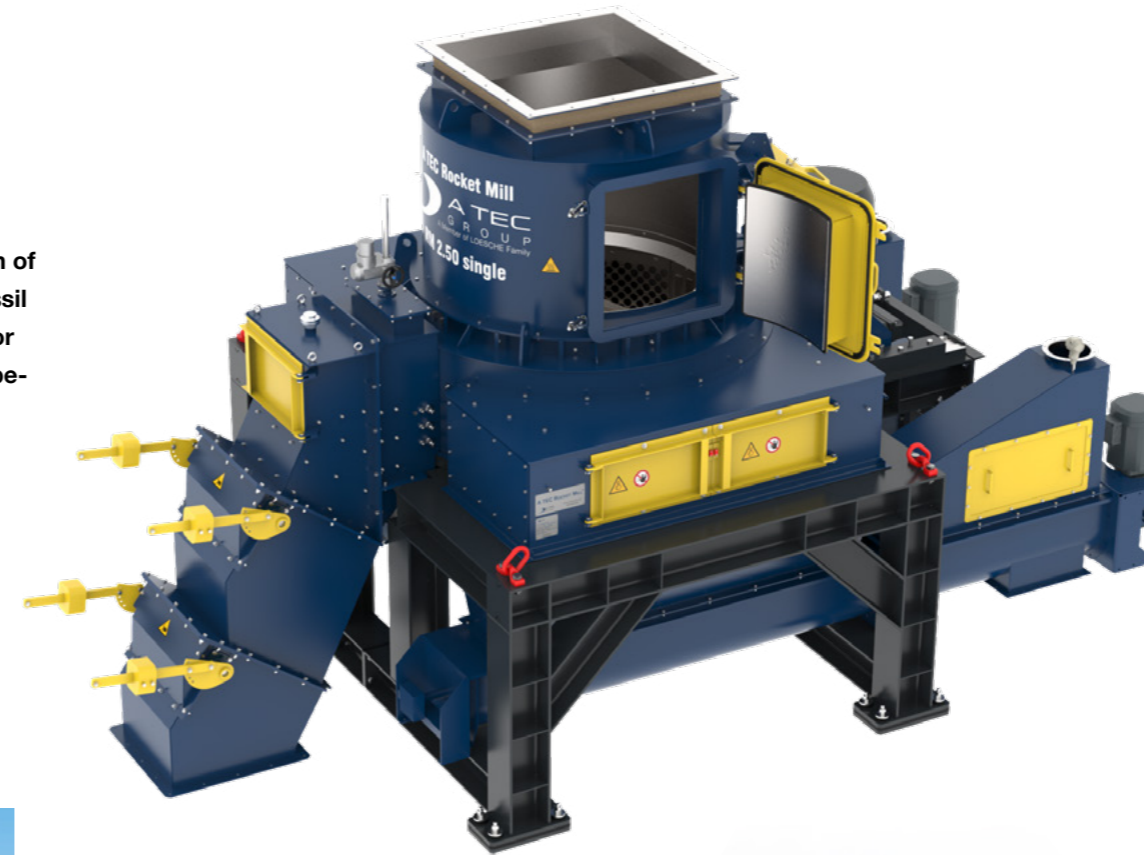
#### REDU-NO<sub>x</sub> – CALCINER

Staged injection of fuel, air and raw meal shall inhibit the formation of NO<sub>x</sub> in the calciner and partially reduce main burner NO<sub>x</sub> by the following chemical reaction:



With A TEC's process know-how, the reduction of bypass dust quantities, lowering the use of fossil fuels and the recycling of genuine resources for reuse in the process or for the free market to become a reality.

In order to successfully invoke this reaction, a temperature window of 1000 C - 1200 C is necessary, as are the correct amount of CO gas and sufficient residence time.

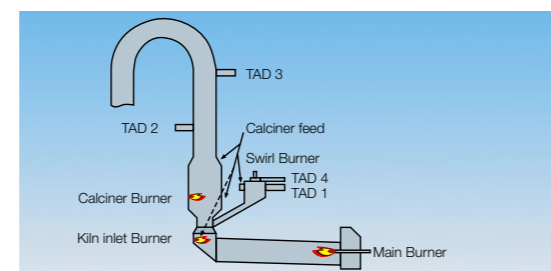
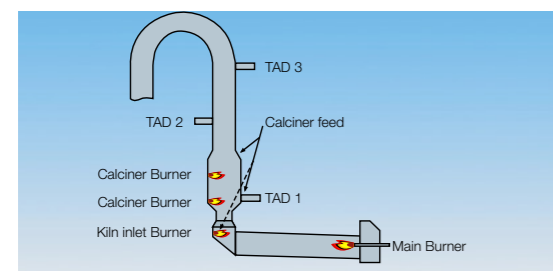


#### WASTEPREP®

The whole process of preparation, treatment, storage, dosing and feeding of alternative fuels requires extensive experience.

A TEC can help you to reach:

- Reduction of fossil fuel consumption
- Reduction of CO<sub>2</sub> emissions
- Recycling of waste
- Reduction of energy costs



#### REDU-NO<sub>x</sub> – Calciner (RNC system)

For existing calciner systems intending to use high-energy fuels:

- Fuel injection points at the kiln inlet, and at 2 positions within the calciner loop
- Staged feed of raw meal and tertiary air to control the chemical reactions

#### REDU-NO<sub>x</sub> – Combustion Chamber Calciner (RNC-CC system)

For new calciner systems intending to use low energy fuels:

- main fuel injection in the combustion chamber
- Staged feed of raw meal and tertiary air to control the chemical reactions

Typical achievable NO<sub>x</sub> emissions  
200 / 500 (with SNCR / without SNCR)





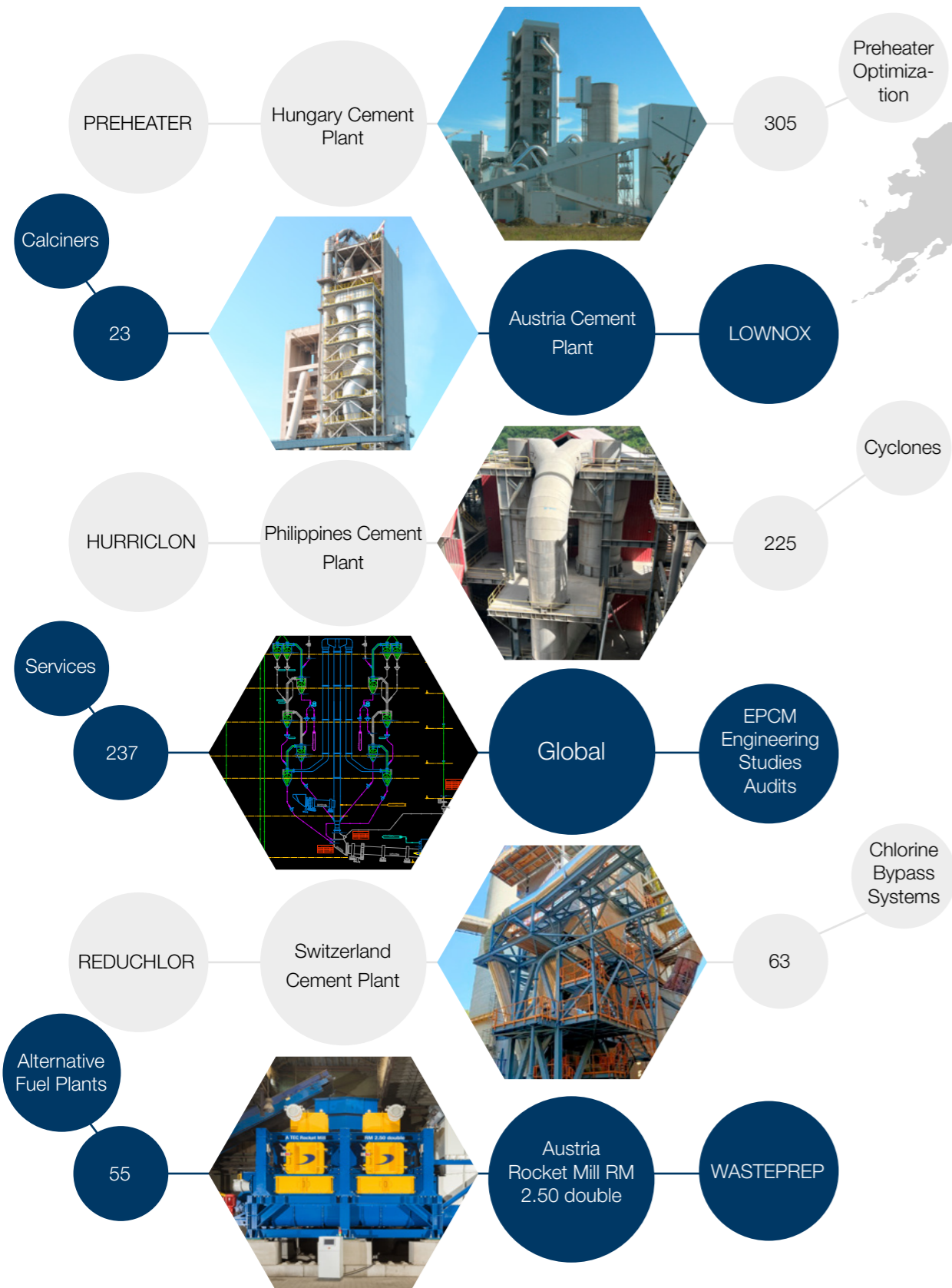
### A TEC CONSULTING

A basic requirement when building new plants or modernising existing plants is to have access to independent market surveys, to select appropriate process routes and the right equipment, to shorten the implementation time and to reduce costs significantly overall.

A TEC supports clients during the planning and development phases of projects to improve existing plants or to build new plants in the cement industry. The range of service span from concept definition through to commissioning the finished plant.

- Studies for plant upgrades
- Economic analyses, feasibility studies, ROI calculations
- Processes to comply with legal requirements
- Basic engineering, supply limits definitions
- Selection of technologies
- Technical specifications, supplier selections
- Project Management for quality, schedule and budget compliance
- Installation and commissioning supervision
- Training and support of plant personnel





### WORLDWIDE LEADING ENVIRONMENTAL ENGINEERING FOR RELIABILITY AND OPERATIONAL SAFETY.

Through worldwide patented innovative products and leading engineering know-how together with long-time, extensive, proven experience in optimization projects in pyroprocess, A TEC is your reliable partner.

More than 1.000 successfully completed projects are proof of our strength and competence.





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