

# SUPER ECC

## Enzymatic Continuous Conversion of native Starch



**Best Value Guaranteed**

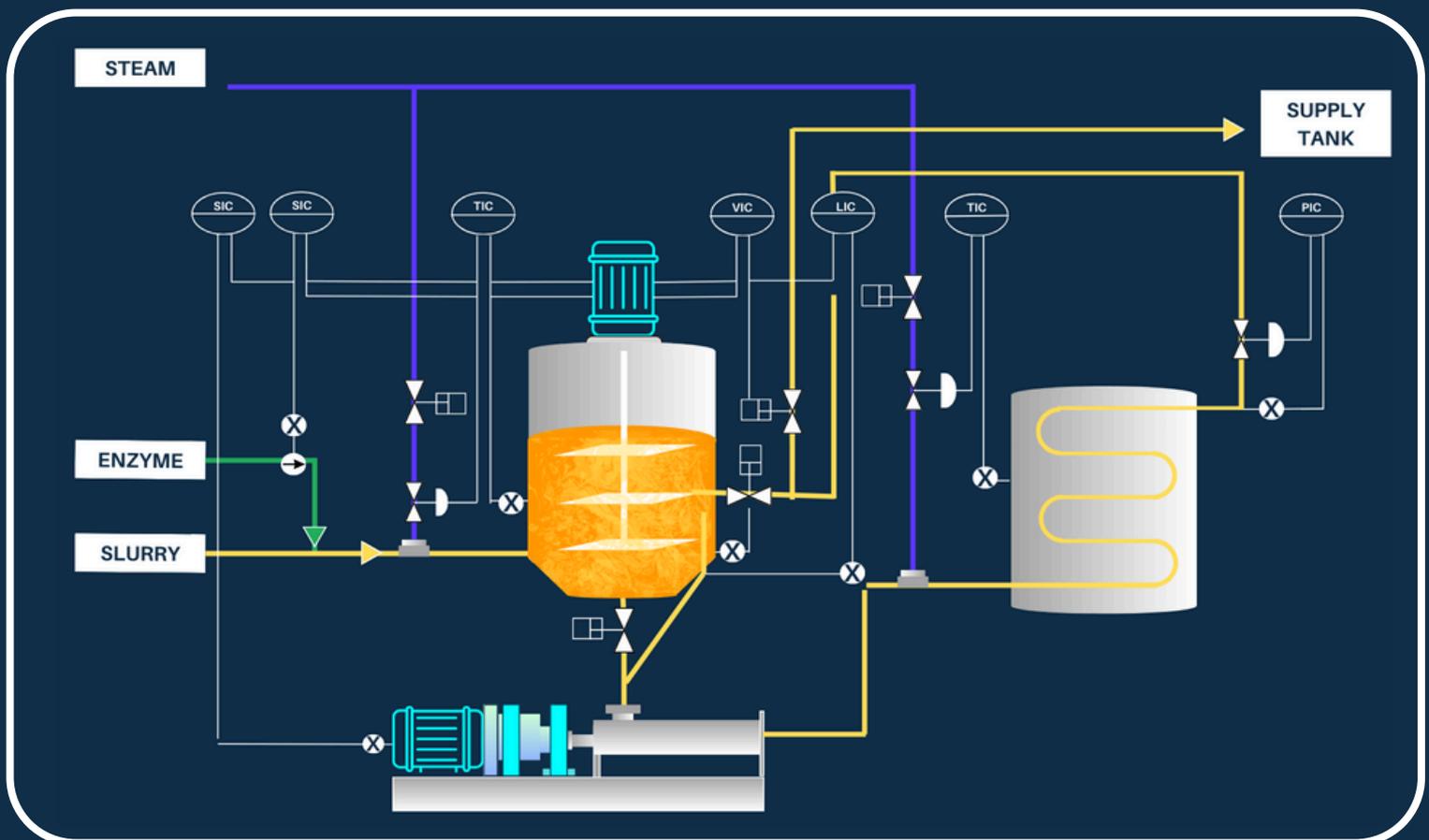
# SUPER ECC

**BVG Super ECC - ENZYME CONTINUOUS CONVERSION** - is a continuous enzymatic process for the conversion of native starches. With this technology system all native starches can be converted to an optimised final viscosity.

Degraded starches are used on size presses, metered size presses and in coating formulations. BVG - Super ECC uses a unique venturi jet system to dissolve the starch slurry and achieve an optimised molecular weight distribution of the degraded starch molecules.

The catalytic hydrolysis of native starch is controlled by an on-line viscosimeter throughout the process. The plant runs automatically - no operator required. A modern link allows remote maintenance and troubleshooting. Using a mobile phone and notebook, it is possible to connect to the plant from anywhere in the world.

## HOW IT WORKS



# SUPER ECC & STORAGE SILO



# SUPER ECC

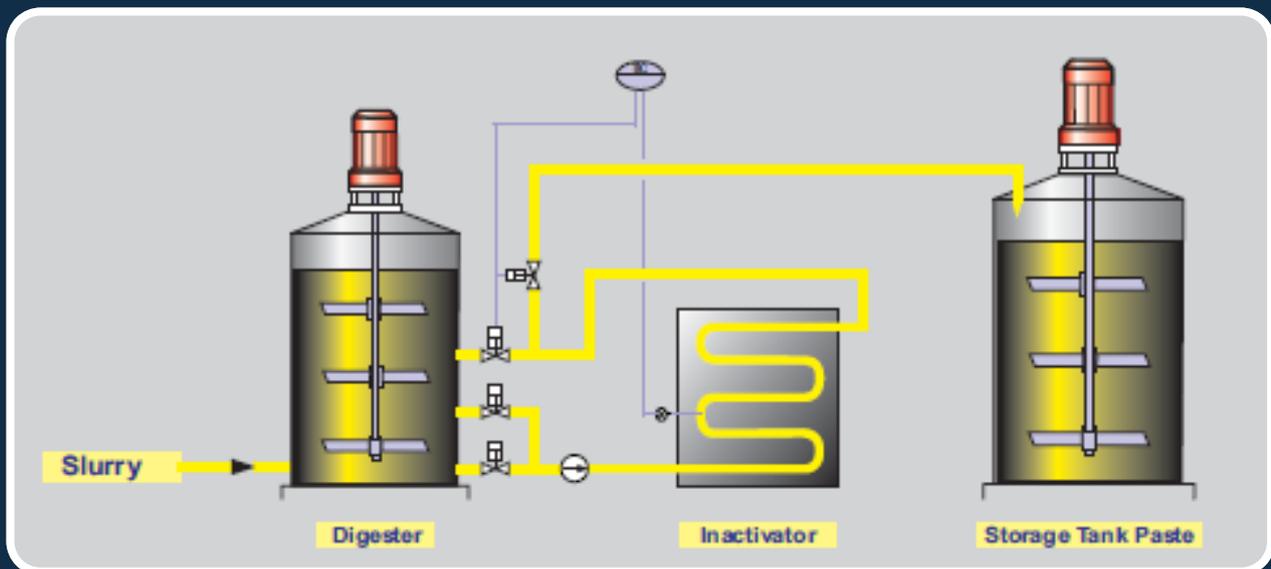


# SUPER ECC

## NO POLL

BVG holds a patent to reduce **effluent free to zero**, processing enzyme degraded starch. All systems so far produce effluent at the start/stop sequence. This is necessary to prevent active enzyme from going to the storage tank. Product flow went to drain until enzyme was inhibited safely. The new design lacks any waste, due to the fact, that the production flow is recycled back to the digester, until inhibition of enzymes is executed. The new technology is called "No Poll", which means there is No Pollution. The new technology saves starch consumption and within raw material costs, waste water treatment cost and energy demand.

## ZERO POLLUTION



Savings by "No Poll"

Starch use of 1 t/h

### Savings on Starch

Assuming there are 4 Sequences in 24h, "No Poll " can save 200kg starch/d.

Cost savings: app. **35.000 Euro/y**

### Other savings

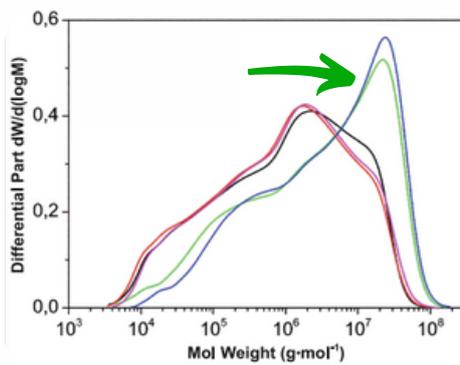
Additional savings can be achieved on steam, electrical energy and waste water treatment. Cost savings: app. **80.000 Euro/y**

# SUPER ECC

## ANALYSIS

Analysis by Fraunhofer Institute  
Biopolymers Division, Starch/Biotechnology Processes Section

### MOL-WEIGHT DISTRIBUTION



- Competitor 1
- Competitor 2
- **BVG SUPER ECC**
- Competitor 2
- **BVG SUPER ECC**

#### Benefit

- Use of native starch
- Minimal costs for operating chemicals

## TRIAL SYSTEM

Trial Systems are available ranging from 100 kg/h to 5.000 kg/h native starch.



**SUPER ECC****JET MASTER****Thermal Heater for all Types of Starch Slurries**

Suitable for the following applications in the paper industry:

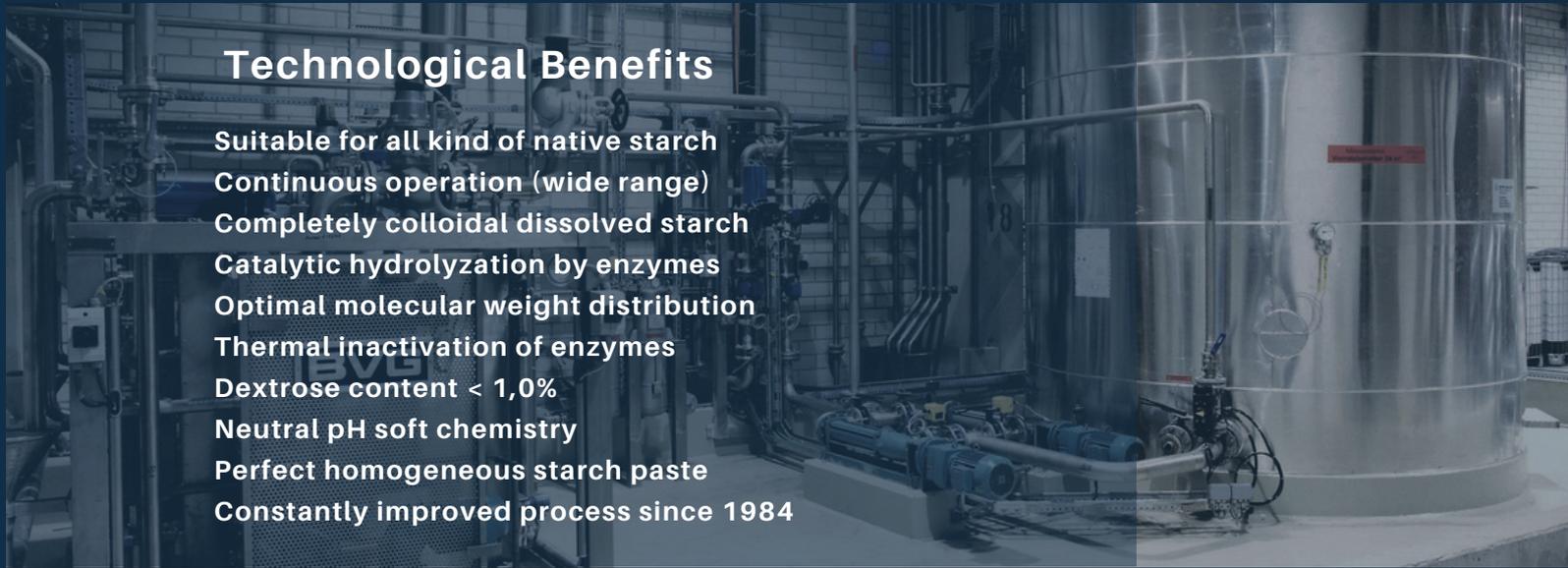
Available steam pressure starting at 1,5 bar

Required for high solids starch cooking

Introduced by BVG in 1984 an continuously improved

# SUPER ECC

## Technological Benefits

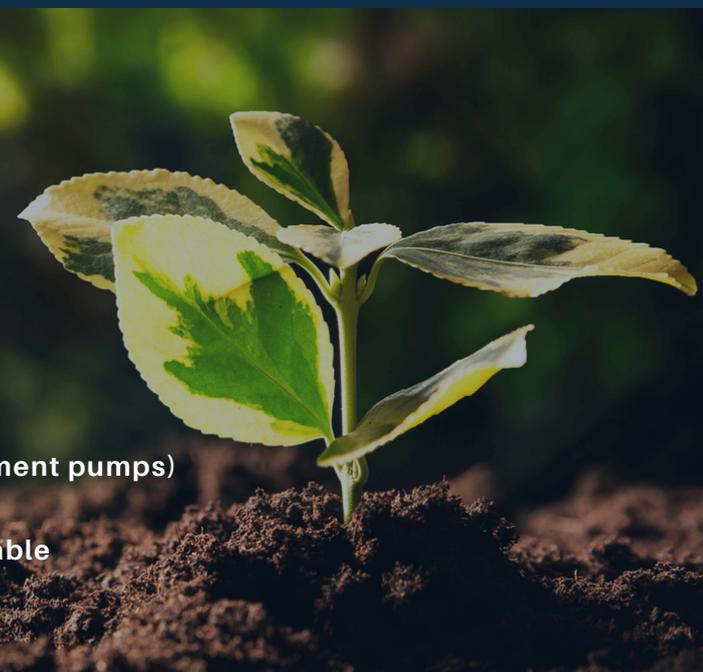


- Suitable for all kind of native starch
- Continuous operation (wide range)
- Completely colloidal dissolved starch
- Catalytic hydrolyzation by enzymes
- Optimal molecular weight distribution
- Thermal inactivation of enzymes
- Dextrose content < 1,0%
- Neutral pH soft chemistry
- Perfect homogeneous starch paste
- Constantly improved process since 1984

## Technical Benefits

- Clean design
- No operator demand
- Minimum maintenance demand
- Quality construction made in Germany
- Pickle bathed and stress relieved cooking chamber
- High output and compact design
- Minimal steam pressure supply 1,5 bar [g]
- Slurry content 4-40% d.s. (depending on application)
- High quality standard that lasts for generations
- Most reliable cooking chamber in the market

## Economical Benefits



- Highest starch efficiency in the paper industry
- Minimal enzyme demand
- Lowest electrical energy demand
- Highest energy efficiency (closed design)
- Wastewater free operation since 2012
- Small operation costs
- No wearing parts (apart from positive displacement pumps)
- Minimal space demand
- Pressure Equipment Directive (PED) not applicable
- Capable to retrofit existing installations

# SUPER ECC

## LABORITY SYSTEM

Customized Equipment Solution for Technical Center

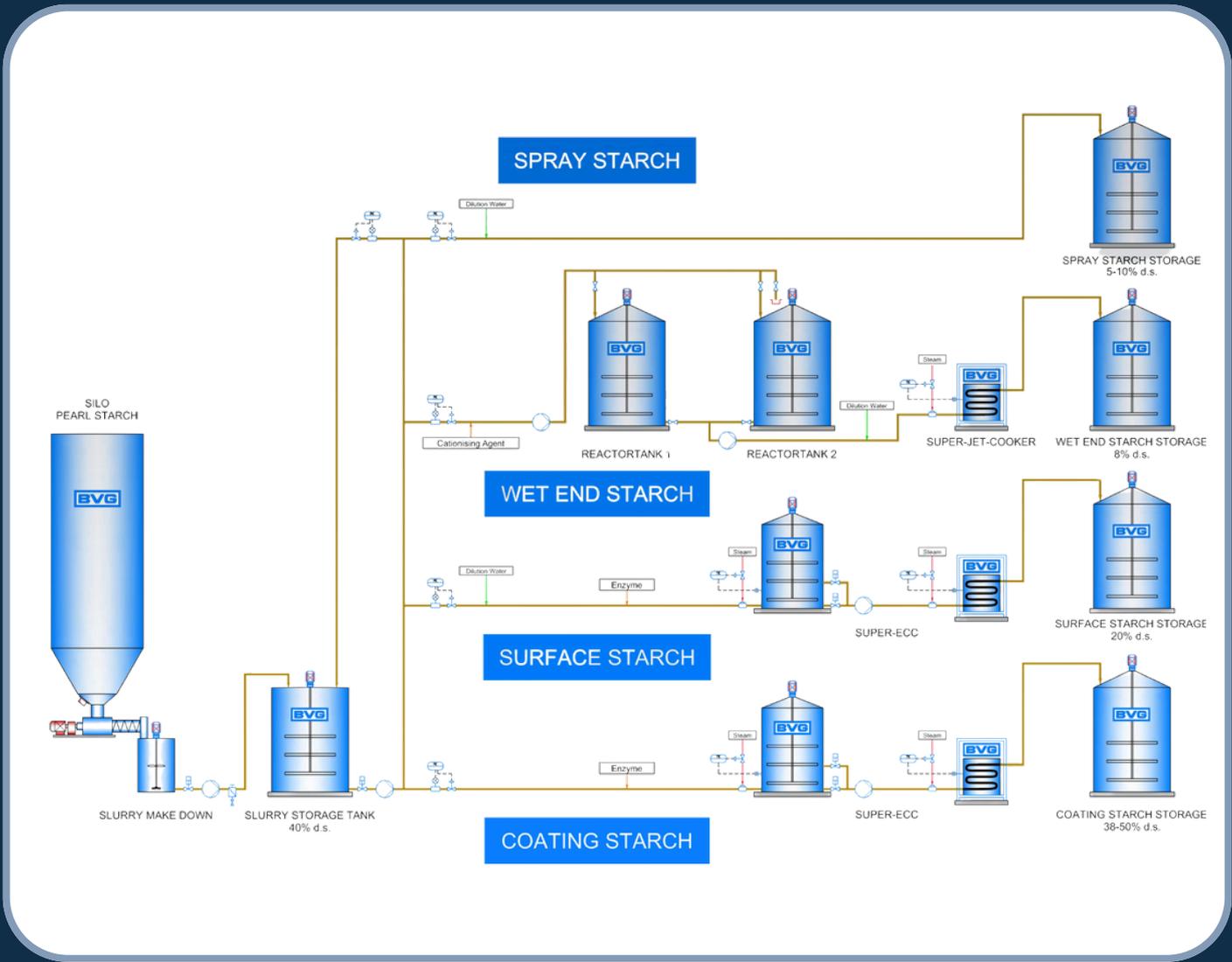




# STARCH PROCESSING SYSTEM

## MILL-WIDE

For Spray - Wet End - Surface - Coating Starch based on native starch





## CONTACT



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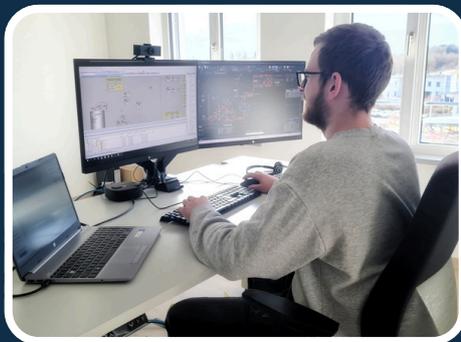
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Shandong Province

## BVG-SERVICE



Remote



On-site

# Best Value Guaranteed

PROCESS EQUIPMENT | PROJECT ENGINEERING | SERVICE | CHEMICALS

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