

Electrode boilers

Using technologies that help to improve your energy productivity* is a sure way to optimise production processes and, as a result, grow your business. Switching to electrode boilers is an attractive option to achieve more with the energy you use.

How the technology works

- Electricity flows through streams of water to create heat or steam - electric current is carried by means of the conductive and resistive properties of water.

Insights

Technological advances made electrode boilers very effective in converting electric energy into heat.

They are:

- A highly reliable technology
- 99% efficient - almost all the energy consumed produces steam
- Designed to have only a few components
- Compact in size
- Designed to operate on both single phase and three phase electricity
- Fast to start up and quick to respond
- Easier to operate and control than boilers powered by fossil fuels

* Energy productivity is defined as the ratio of output divided by energy consumption

- Environmentally friendlier than boilers powered by fossil fuels; they do not emit harmful gases like carbon monoxide and do not need pollution control systems

- Designed to minimise thermal stressing due to temperature inequalities
- Designed to better control temperature and distribute it more equally and uniformly.
- Designed to produce better quality steam and eliminate the need for moisture separators in the lines
- Designed to have no component at a high temperature except the water itself
- Cheaper and easier to maintain than boilers powered by fossil fuels

Manufacturers supply electrode boilers in a range of voltages and outputs, thereby providing an extremely wide control range to accurately maintain steam pressure over widely varying load conditions.

Benefits

- Cost savings due to high overall efficiency
- Less wastage or product loss as a result of poor process heat control
- Fuel supply continuity
- No production delays or interruptions as a result of fuel delivery delays
- No necessity for bulk fuel handling or storage

Importantly, the technology strengthens your green growth credentials because it is friendlier to the environment.

Improving the conversion of electric energy into heat help to optimise energy productivity and put your business on a path to growth and expansion

Main end uses of the technology

- Chemical manufacturing
- Pharmaceutical manufacturing
- Paper processing
- Food processing, including bakeries
- Laundry and dry cleaning
- Textile processing
- Heating in commercial buildings
- Bottling plants
- Breweries
- Dairies

Optimise your energy productivity

Eskom's Energy Advisors, in regions across South Africa, are dedicated to offering advice to business customers on the latest technology and process developments, including electrode boilers.

Moreover, they are dedicated to supporting business customers achieve their growth targets by offering them advice on how to use energy in the most productive way possible within specific operational frameworks.

Having a clear understanding of the potential impact of energy productivity and how it can *maximise output by using energy most optimally* requires a business to have *energy use intelligence*:

- Understanding its energy needs
- Understanding its electrical systems and processes
- Investigating the latest technology and process developments
- Understanding the cost saving benefits of energy-smart technologies
- Recognising areas where energy is used least and most
- Analysing how to reduce energy investment costs
- Considering how energy use patterns can be changed from peak to off-peak periods
- Realising that energy savings in one area can be used to power growth in another area

Eskom's Energy Advisors specialise in advising business customers in the commercial, industrial and agricultural sectors on how to gather *energy use intelligence*.
