



# Long Term Economizer Efficiency

Improve boiler efficiency  
by up to 12% with  
HeatSponge Economizer  
technologies



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# What is an economizer?

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Traditional economizers are designed to reduce a facility's fuel use and running costs by recovering and using waste heat to preheat boiler feed water.

However, due to their construction and design, for many sites traditional economizers have failed to deliver the long-term savings promised. As a result leaking, isolated, and failed economizers have become a common site in plantrooms.

Now, thanks to the **HeatSponge** Economizer – the latest in condensing economizer technology and design, systems are finally able to permanently improve boiler efficiency by up to 12%.

## We already have an economizer installed – *why should we replace it?*

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Feedwater economizer technology has been available for the last 50 years – with condensing economizers entering the market around 10 years ago. While the efficiency benefits are clear, the standard carbon steel design of many economizers often means they develop leaks in a matter of years due to the harsh acidic flue gas environment and regular heating up or cooling down.

With many installations difficult to repair and costly to replace, without the guarantee that the same failure won't arise again, plants are forced to leave isolated, out of service economizers in place – negating any benefits to fuel use.

## Can economizer efficiencies be engineered to last?

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The **HeatSponge** Economizer has been manufactured to combat the challenges which have previously limited uptake of economizer technology.

### Long life materials

Sites which fit the **HeatSponge** Economizer benefit from a longer product life-cycle compared to traditional economizers. All surfaces exposed to flue gas or water are made from corrosion resistant stainless steel and feature 316 stainless steel tubing, minimizing the risk of leaks occurring.

### Simple to service design

The easy to service design reduces the amount of time required to maintain the inner workings with individually removable finned tubes resulting in quick replacement should wear eventually happen.

Easily integrated into your current boiler system, the **HeatSponge** Economizer's unique gas transition design makes it compatible with small space requirements.

Ideal for both new or retrofit applications, it comes as a one-piece fully insulated construction and can often be placed in the same space as an existing failed economizer.

All of this, together with savings up to four times higher than traditional economizers, makes the **HeatSponge** Economizer the ultimate, long-term single-unit solution.

### Who needs the HeatSponge Economizer?

Any facility with a steam boiler plant can benefit from an economizer. However, the technology is particularly suited to use in:

- Medium to large, industrial and institutional facilities
- Locations with a high (50% or more) boiler makeup water requirement
- Sites with existing failed economizers

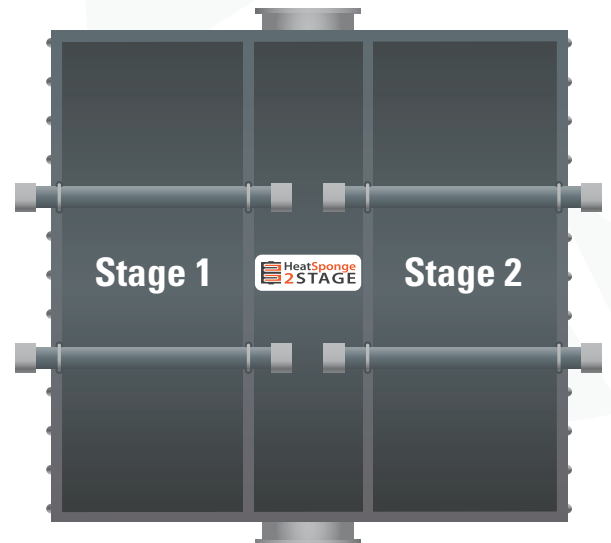
## Achieving optimum efficiency

Many boiler plants have high boiler makeup water requirements. This can mean cold water is sent to the boiler or deaerator resulting in lower boiler efficiencies

Our **HeatSponge 2 STAGE** Economizer is a model in our **HeatSponge** range that offers an industry-leading efficiency of up to 12%, with a single unit serving as both your boiler feedwater economizer and makeup water condensing economizer.

Each requirement is dealt with as a result of the product's dual economizer staged design.

The **HeatSponge** Economizer is engineered to use draft available from the combustion air fan so another fan will not be necessary. Each unit features upgraded metallurgy, and replaceable tubes are available for both conventional and condensing economizers.

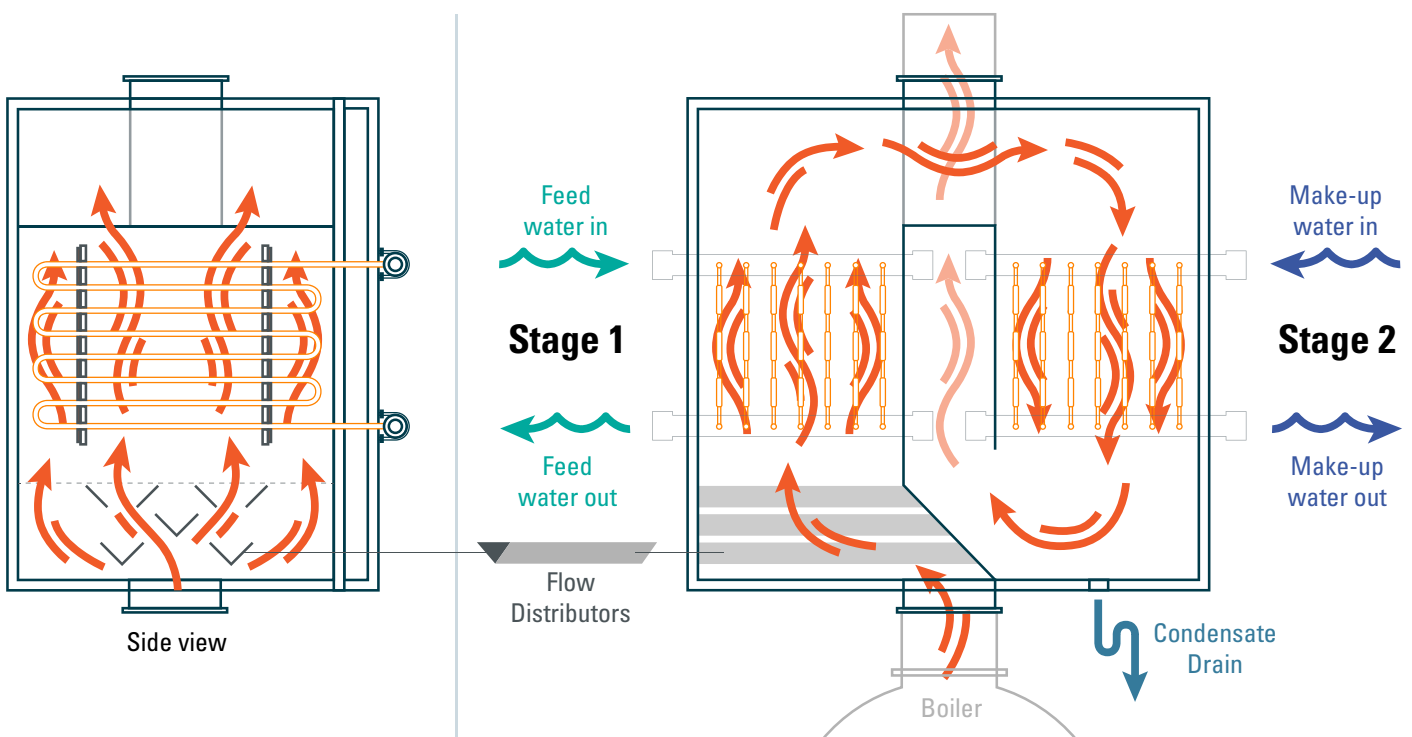


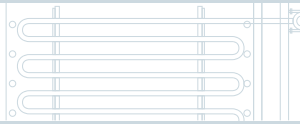
## HeatSponge 2 STAGE Economizer

The first stage pre-heats feedwater, typically saving between 2% and 4% of boiler fuel.

When makeup water requirements are high, a second condensing stage preheats cold boiler makeup water as high as 200°F / 93°C. This provides an additional saving of 6% to 8%, resulting in a total efficiency improvement of up to 12%.

The two stage offset design eliminates the potential of condensation flowing back into the boiler.





## Quick installation

- One-piece fully insulated construction
- Ideal for new or retrofit applications
- Compatible with small space requirements due to gas transition design



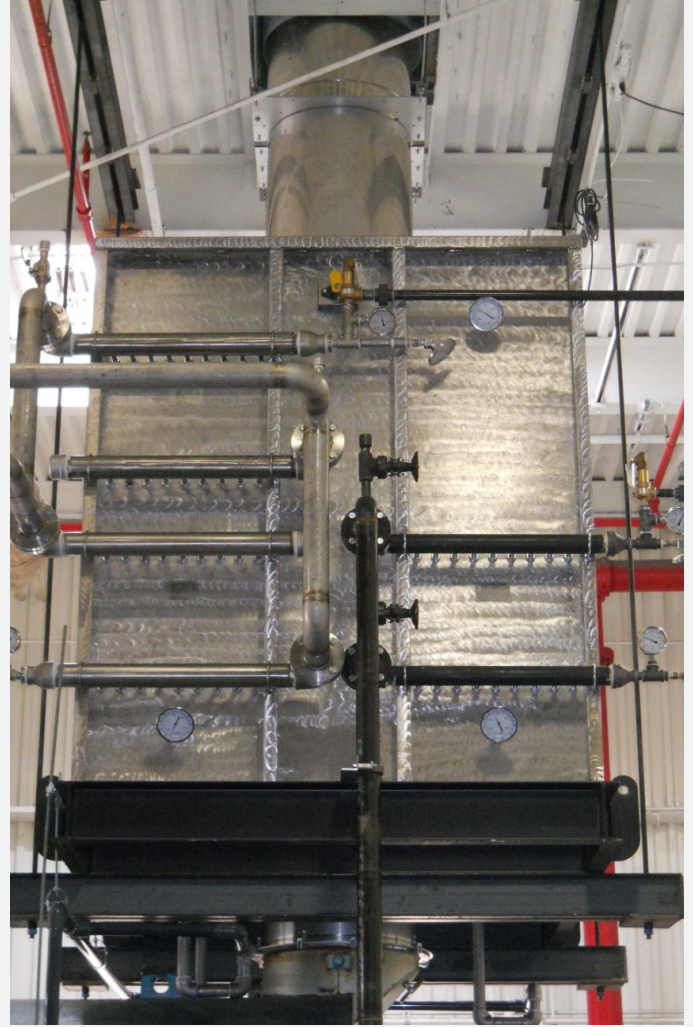
## Durable, easy to maintain design

- Stainless steel construction
- Removable compression-fit tubes – with no ASME code welding required
- Detachable rear door for full access to the inside of the unit



## Optimal efficiency

- Two stage economizer for both feed and makeup water
- Between 8% and 12% increase in boiler efficiency
- A unique condensing economizer that brings condensing efficiencies to conventional boilers



## Thermal Energy International

Thermal Energy International is a full service, design-build firm with engineering accreditation. Established in 1996, our team of professionals is highly experienced in plant and process energy efficiency evaluations and innovative solution development.

We design, manufacture and deliver custom solutions which reduce energy costs, improve efficiency and reduce the environmental impact of your facility.

Join the list of energy efficient organizations making the HeatSponge Economizer the *last economizer they ever buy.*

