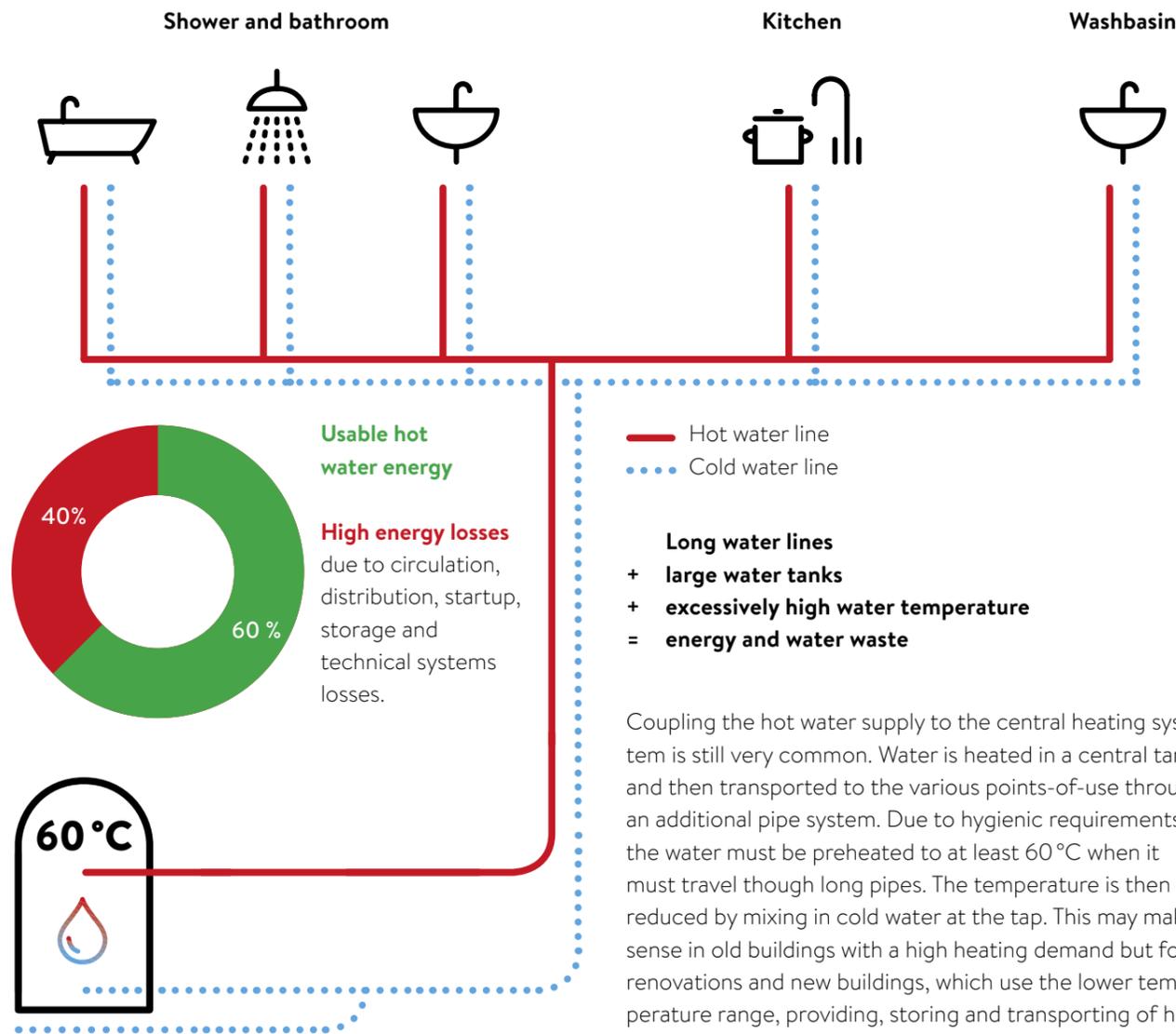


Centralised? Decentralised?

It matters!

Central hot water supply with high energy losses



Coupling the hot water supply to the central heating system is still very common. Water is heated in a central tank and then transported to the various points-of-use through an additional pipe system. Due to hygienic requirements, the water must be preheated to at least 60 °C when it must travel through long pipes. The temperature is then reduced by mixing in cold water at the tap. This may make sense in old buildings with a high heating demand but for renovations and new buildings, which use the lower temperature range, providing, storing and transporting of hot water at 60 °C means high energy losses.

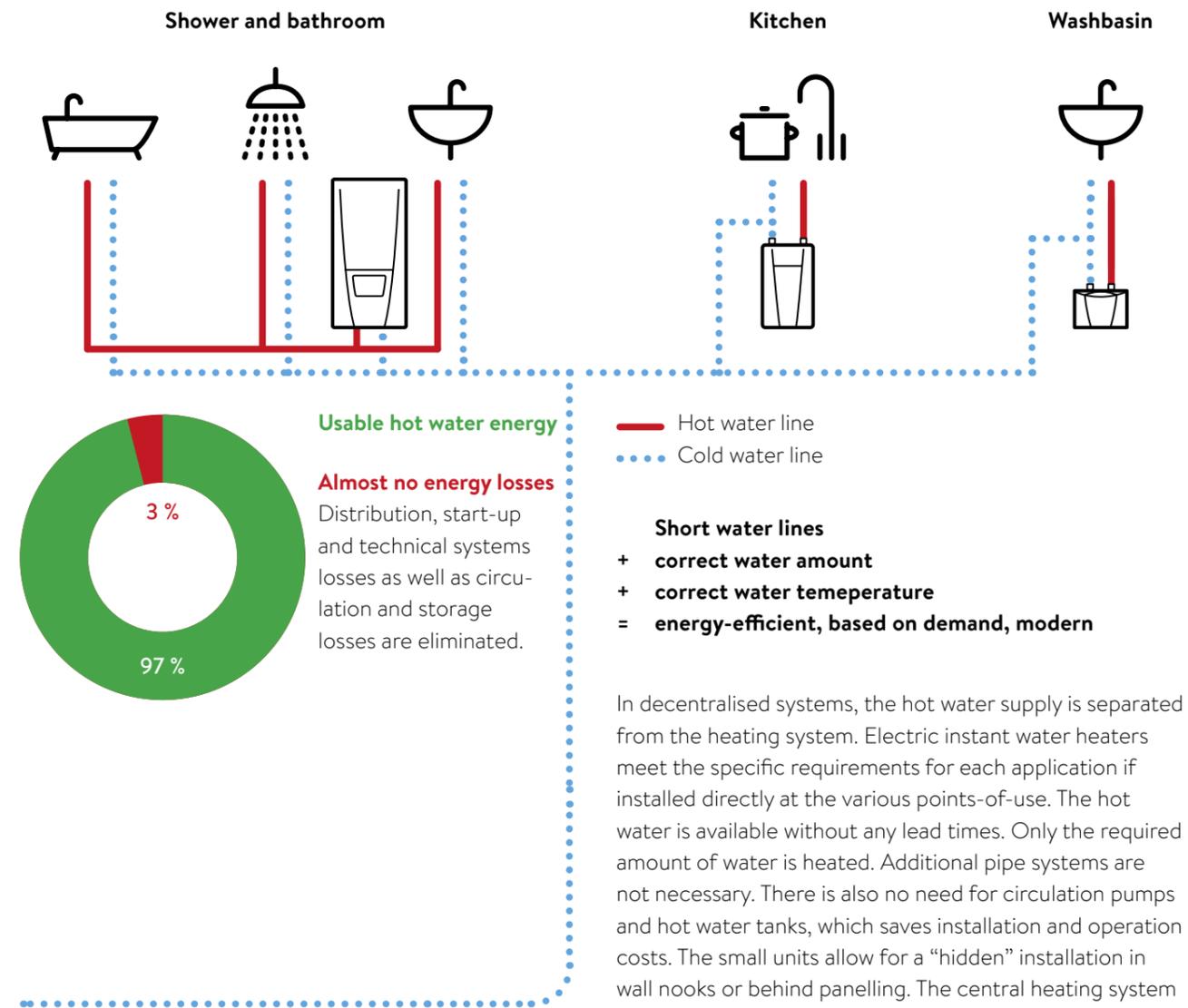
The “Energy Industry Research Association” divides energy losses in centralised hot water preparation into circulation, distribution, start-up and storage losses. In a one-family home, these losses add up to at least 40 % of the entire energy requirements. Add to that the higher investment costs compared to the decentralised solution.

Energy quantities for centralised hot water preparation with intelligent circulation on work days (example).

	1-family home	3-family home	12-family home
Useful hot water energy [Wh/d]:	4,280	8,500	34,000
Circulation losses [Wh/d]:	570	3,000	12,000
Distribution losses [Wh/d]:	27	50	180
Start-up losses [Wh/d]:	110	160	730
Storage losses [Wh/d]:	1,300	2,100	4,000
Technical systems losses [Wh/d]:	890	2,200	10,500
Total hot water requirements [Wh/d]:	7,177	16,010	61,410

Source: Final report of the Energy Industry Research Association mbH in collaboration with TU Munich, FFE no. ZVEI-01, 2011.

Decentralised hot water supply is energy-efficient



In decentralised systems, the hot water supply is separated from the heating system. Electric instant water heaters meet the specific requirements for each application if installed directly at the various points-of-use. The hot water is available without any lead times. Only the required amount of water is heated. Additional pipe systems are not necessary. There is also no need for circulation pumps and hot water tanks, which saves installation and operation costs. The small units allow for a “hidden” installation in wall nooks or behind panelling. The central heating system can now be adjusted precisely to the requirements of the building and be turned off completely during the summer.

Circulation and storage losses are eliminated, since water is not preheated and stored in large quantities. The distribution, start-up and systems losses only amount to 3 % of the energy requirements. According to the latest findings of the “Energy Industry Research Association”, decentralised hot water supply with electric instant water heaters is a highly efficient energy-saving system.

Energy quantities for decentralised hot water preparation on work days (example).

	1-family home	3-family home	12-family home
Useful hot water energy [Wh/d]:	4,280	8,500	34,000
Distribution losses [Wh/d]:	20	45	170
Start-up losses [Wh/d]:	35	70	380
Technical systems losses [Wh/d]:	70	210	580
Total hot water requirements [Wh/d]:	4,405	8,825	35,130
Savings vs. centralised hot water preparation [Wh/d]:	2,772	7,185	26,280

Source: Final report of the Energy Industry Research Association mbH in collaboration with TU Munich, FFE no. ZVEI-01, 2011.

What is my own hot water requirement actually?

	 10 sec	 2 L/min	 35 °C
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Washbasin

How long do you wash your hands? Rarely longer than 10 seconds! Did you know that? For such short duration, it makes sense to obtain the water at the desired temperature as quickly as possible. What else do you expect at the hand wash basin? Comfortably warm water, no mixing with cold water to obtain the desired temperature and no long wait times. No problem with E-mini instant water heaters. Our units are also elegant and small and thus almost unnoticeable under the hand wash basin or they can be installed "hidden" behind panels or in nooks.



Our solution:
E-mini instant water heater

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	 2 min	 5 L/min	 48 °C
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Kitchen

What are the uses for warm or hot water in the kitchen? Dishwashers are becoming more and more efficient and, if used appropriately, are often more economical than doing the dishes by hand. But especially when it comes to cleaning individual items, manual dish washing is required. Quickly washing a pot, filling a glass of water, washing one's hands before preparing food or rinsing fruit and vegetables. These are water uses in the kitchen that require very different temperatures. E-compact instant water heaters provide your desired temperature with the push of a button, without adding cold water to the mix or scalding yourself with hot water. Compact instant water heaters also save space and can be installed easily under the sink.



Our solution:
E-compact instant water heater

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	 1 min	 4 L/min	 40 °C
	 5 min	 8 L/min	 38 °C
	 12 min	 10 l/min	 40 °C

Shower and bathroom

On average, taking a shower lasts 3 to 5 minutes, even if the process seems much longer to us. We also would like to obtain our personal "comfortable temperature" quickly: simply open the tap, without long adjustments and mixing. With E-comfort instant water heaters, those unpleasant cold or hot bursts under the shower have become a thing of the past. And don't forget the safety aspect, because any scalding has now become impossible with the appropriate setting. These units provide exactly the convenience we expect from a modern wellness area.



Our solution:
E-comfort instant water heater

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That's how you make friends!



Instantly hot water

As soon as you open the tap, the water flows with your desired temperature. The water is only heated in the amount and for the time you actually need it. Due to short water lines and modern technology.

Efficient

Saving energy

No more long water lines and circulation losses because the units are installed directly at the point of use. The water is no longer preheated and stored in large amounts. That saves energy. And it saves investment costs: Long waterlines, circulation pumps and hot water tanks are no longer necessary.



Protecting the environment

The process from design to the finished product is very sustainable and is continuously put to the test. We work according to the environmental management standard ISO 14001. Users conserve water and energy with electric instant water heaters.

SHORT & SWEET

Short water lines

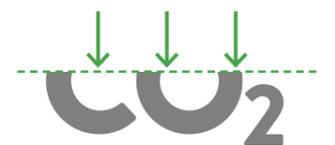
Electric instant water heaters are installed directly at the point of use. Long water lines are avoided. Water is heated more quickly and there is barely any heat loss.

Convenience Efficiency



Lowering costs

Electronic instant water heaters use up to 85 % less energy than conventional storage heaters.



CO₂ down

The amount of renewable energy in the electricity mix is growing as CO₂ emissions which are generated by burning fossil fuels are reduced. Compared to centralised gas or oil heating systems, decentralised hot water supply can lower CO₂ emission up to 35 %.



More hygiene

Electric instant water heaters heat up the cold water to the perfect temperature within seconds, directly at the tap, as it flows through the unit. The heated water is used immediately and unused water is avoided in the water line systems. That's why testing for Legionella bacteria becomes unnecessary. This is what makes decentralised water heating more hygienic and efficient.

Precise

Ideal temperature

On many units, each user can set his or her individual temperature preference precisely. Directly at the unit, by remote control or via app. This also provides more security by avoiding scalding accidents

COOL!

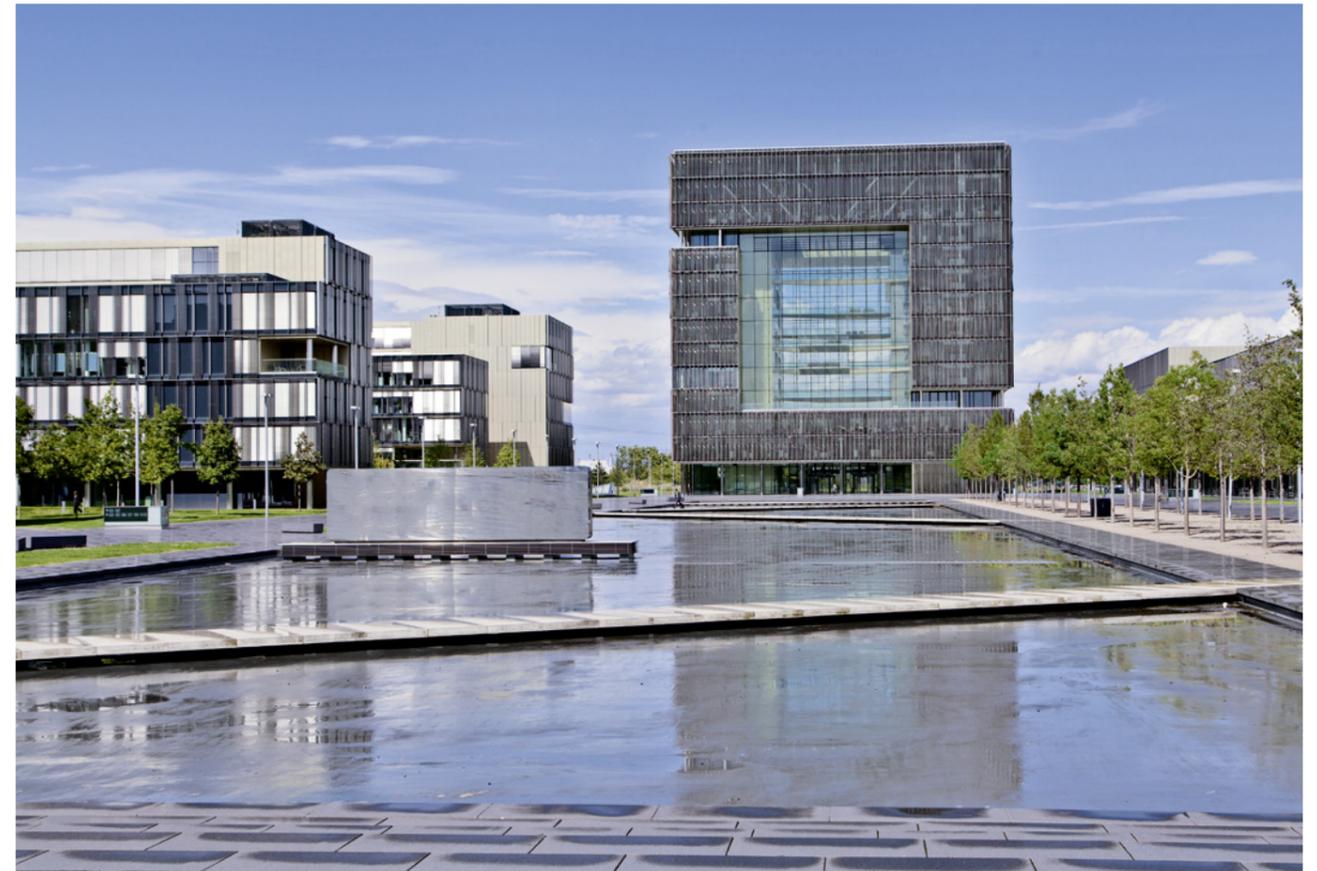
Conserving water

That's pretty cool, right? No wasted water. Hot water is immediately available with electric instant water heaters. It is not necessary to run water for a long time to obtain the desired temperature. In centralised systems with 15 metres long water lines, for example, about 4.8 litres of water are wasted.

Electric instant water heaters are used all over the world.

Our electric instant water heaters are utilised in private, business and public buildings all over the world. Owners, contractors, architects, developers and investors rely on our expertise and our special service in the area of energy-efficient hot water preparation. Our large range of products nearly always provides a fitting and smart solution for their hot water supply needs. You can find CLAGE products in renowned hotels, in office buildings, in modern architectural houses and all other places where one would not want to do without the convenience of an efficient hot water supply.

References are available at clage.com



Private households

Electric instant water heaters are in use in nearly all residential properties: in one- and multi-family homes and, of course, in apartments as well. It makes a lot of sense to invest in decentralised warm water technology with modern electric instant water heaters, both in existing and in new buildings. At the washbasin, in the kitchen or in the bathroom: Electric instant water heaters provide more energy efficiency and convenience at home.

Housing construction

For renovation projects in buildings with outdated technology, one of the main issues is modern and energy-efficient heating and hot water technology. In new construction projects, the demand for general heating is constantly reduced due to technical advancements. For the highest savings potential, central heating and the hot water supply should be completely separated. Electric instant water heaters are an energy-efficient and hygienic solution.

Commercial buildings

E-mini instant water heaters at washbasins for employees, customers and visitors make each bathroom facility more comfortable. Our energy-efficient units directly at the point of use are the optimal solution in large buildings with long water lines.

Hospitality

Electric instant water heaters are utilised in hotels, resorts and restaurants. You'll even find our Zip drinking water systems on cruise ships.

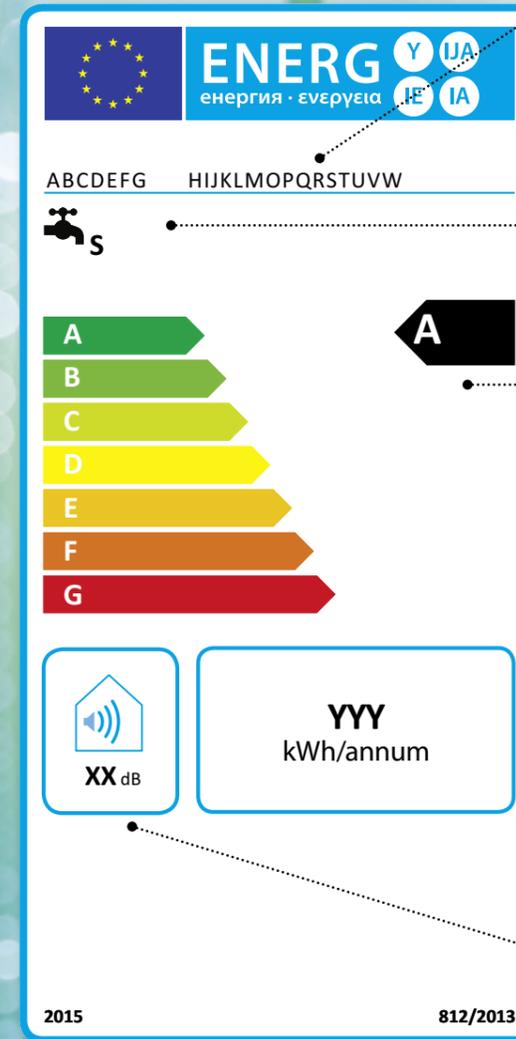
Industry

Workplaces and employee showers can be equipped with our units. Our product line also features special units for particular requirements.

Public buildings

Frequently used bathrooms in public areas should be equipped with efficient electric instant water heaters. In combination with the appropriate taps and faucets, they can provide optimum hygiene and corresponding savings.

Aaaahhhh. Energy efficiency label Class A for our instant water heaters.



Manufacturer and product

Dispensing profile

The efficiency of a unit depends on its intended use. At the washbasin, for instance, a water flow of approx. 2 litres per minute is sufficient (tap profile XXS), a kitchen sink needs about 5 l/min (tap profile XS), while supplying several points-of-use in a bathroom or in an apartment requires a water flow of approx. 10 l/min (tap profile S).

Energy efficiency class

The seven energy efficiency classes for household appliances corresponds to the traffic light system: a green bar represents the best efficiency class (A) and a red bar stands for the worst efficiency class (G). In a comparison of the various hot water systems, demand-based instant water heaters were awarded the best energy efficiency class (A).

Annual energy consumption

However, the energy efficiency class is not the only deciding factor but the detailed information on the label matters as well. Within each efficiency class, there are significant differences in energy use. The hot water unit should initially be selected according to its intended use – its tap profile. An important factor is the comparison of the annual energy consumption!

Noise level during use

The noise level for all CLAGE instant water heaters is at a low 15 dB and thus hardly noticeable.

By the way:

The energy advantage of electronically controlled instant water heaters is not listed on the energy label. The actual use of demand-based water heating can provide energy savings of up to 30% compared to hydraulically controlled instant water heaters within efficiency class A. The reason is the demand-based heating of the water to the desired temperature. The electronic controls automatically adjust the power consumption – and thus the energy use – to the actual water amount.

Yes to renewable energy, No to less convenience.

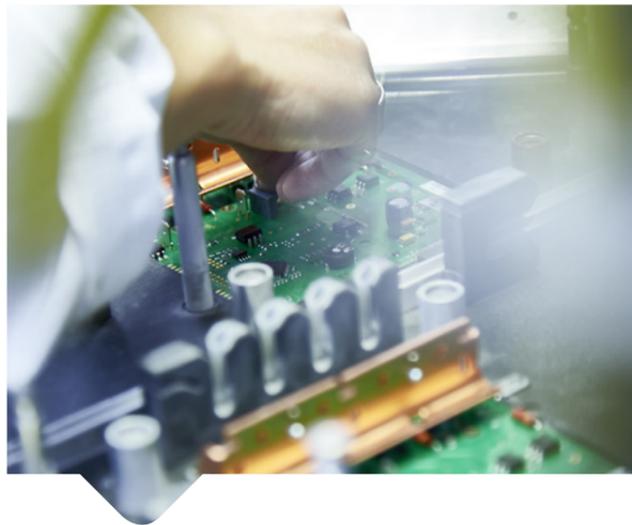
Simply abandoning energy production from fossil energy sources is not enough, since the demand for technology and new household appliances is increasing constantly.

We all must contribute our share to make this a reality. And it is only possible with energy-efficient technology and corresponding appliances.

Conclusion

The new energy labels for hot water units confirm that decentralised hot water supply with electronically controlled instant water heaters is one of the most energy-efficient technologies.

“Our experts
ensure quality.”



Consultation by experts

You will receive a comprehensive consultation, even on-site, by our in-house and field representatives.



> Phone: +49 4131 8901-38
> E-mail: export@clage.de

Technology & Production

Over 200 elite researchers and experienced production staff members are employed at the CLAGE R&D and production base, ensuring that each and every water heater that comes off the assembly lines is of unparalleled, unmatched quality. The world-class researchers there are tasked with the creation and manufacture of cutting-edge user- and environmentally-friendly products. They're constantly innovating and pushing technological boundaries, whether it's from use of the IES® bare wire heating system in mini instantaneous water heaters or incorporation of proprietary electronic touch control panels on full-sized instantaneous water heaters. Professional training is provided constantly to keep the staff up-to-date in their specific areas of expertise and new developing technologies.

Quality assurance

Quality assurance is the most crucial part in the production process, as the quality of raw materials, components and products have to be assessed long before assembly is complete. When it comes to safety and quality control, German tests have long been recognized worldwide as the gold standard. Our Instantaneous Electric Water Heater series has passed both German and international tests – including the certification DIN EN ISO 14001:2008 and the international standard ISO 14001:2009 – a qualification granted for meeting many of the world's top standards.

Special CLAGE Service



Unit registration

We will have easy access to all unit information for registered products. This includes information for maintenance purposes, supplemental products or software updates.



Training and seminars

There is an increasing demand by customers to receive comprehensive information from their installer about energy efficiency. That's why we are offering our training course “Energy-efficient hot water supply” at our CLAGE Academy.



Marketing support

In order to make the world more and more energy-efficient, we need our partners and expert installers. We will be glad to provide support for company representation and external advertising and will also link our partners online.



Customer satisfaction

In order to constantly optimize our products and service, we need your opinion. That is why we regularly conduct customer satisfaction analyses.