Quality and environment

Reliability, **durability** and unsurpassed **comfort of use**.

The combination of motivated, highly qualified employees and up-to-the-minute technology is what enables us to produce the legendary V-ZUG quality. Our products are synonymous with reliability, durability and unsurpassed comfort of use. Thirty years ago, we were the first in the industry to establish certified quality management in accordance with ISO 9001. Today, we use an integrated quality management system to manage the quality of our products and services which, in addition to ISO 9001, also covers the areas of environment (ISO 14001) and occupational safety (OHSAS 18001) and impacts not just on the head office, but also the showroom, advice and service centres. The locations in Arbon and Changzhou are also certified to ISO 9001.

Quality has many aspects: the most important one is and will remain the quality of the household appliances themselves. Before an appliance leaves our factory in Zug or Arbon, it must pass an average of 600 function and safety tests. Only then can we be certain that our products live up to our promise of "Swiss perfection for your home". Our understanding of quality also embraces process convenience, i.e. the extent to which our appliances make the daily lives of the people who use them easier and enable an enjoyable lifestyle. One facet of this is that our appliances must support healthy cooking and hygienic washing, be quiet and economical in operation and be easy to use. Our advice and maintenance services are also crucial to quality. Our Customer Service handles around 1.5 million customer enquiries a year, which equates to more than 4,000 a day. Every single one is an opportunity to persuade our customers of the quality of V-ZUG appliances. In addition, around 400 service technicians go out on call for V-ZUG on a daily basis. Working from 16 service centres in Switzerland, they advise and supply our customers, install new appliances or repair faults or breakdowns, be it in an apartment block in the city or a cabin on a remote mountainside. For us to produce appliances of the desired quality, this requirement must also be writ large in our purchasing. Our definition of quality also extends to integrity in regard to environmental and social standards, so we set clear requirements for our suppliers and audit compliance.

When one of our appliances has provided many years of service and needs to be replaced, we contribute to this through our involvement in the SENS foundation. To protect the environment and enable the reuse of raw materials, SENS joins forces with manufacturers, importers, retailers, collection points and recyclers to facilitate the professional disposal and recycling of electrical and electronic appliances.

Facts and figures

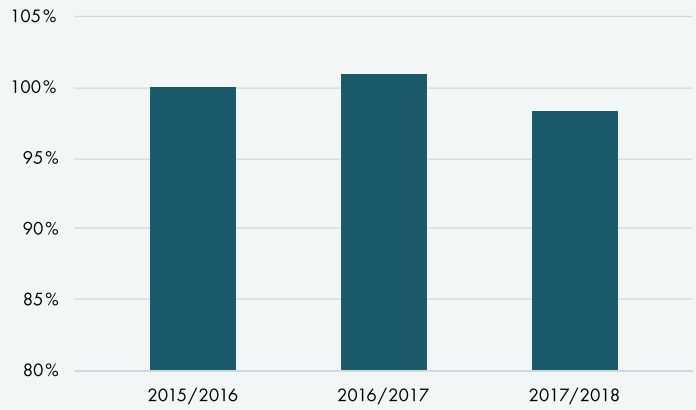

Fig. 6 Incidence of faults (Switzerland), indexed to 2015/16 situation

Fewer faults: more satisfied customers, lower costs

For our customers, faulty household appliances are a nuisance. For us, they also have financial implications: repairs and maintenance services which we carry out under warranty or as a goodwill gesture incur quality-related costs. To counter this, we continuously invest in optimized products and manufacturing and logistics processes. Compared with 2015/16 we have reduced the number of faults during the reporting period by 2%, which in turn has lowered our quality-related costs and increased the number of satisfied customers.

Our service – consistently high calibre

If a fault does occur, our aim is to respond swiftly and, if at all possible, resolve the issue on our first visit. Speed of response and successful repair on the first visit are therefore crucial statistics for our service and support. Over the last three periods, we have reduced our average response time from report to repair by 7%. The rate of faults repaired on the first visit over the same period was around 90%. In other words: in nine out of ten cases, we were able to solve the problem on the spot.

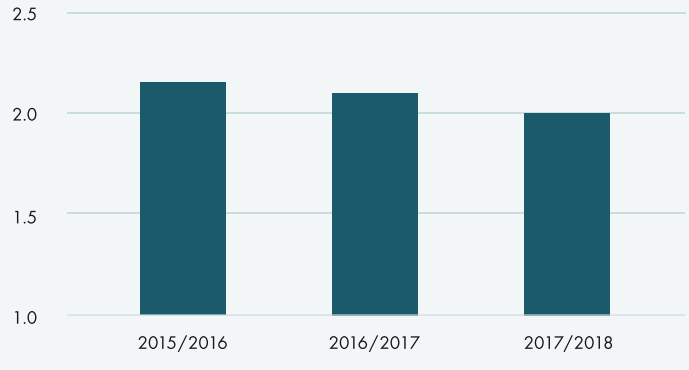

Fig. 7 Average response time from report to repair, in days (Switzerland)

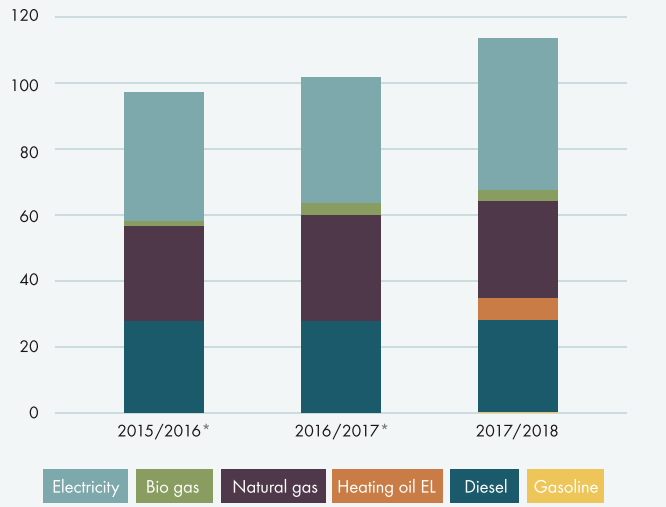

Fig. 8 Energy consumption within V-ZUG by energy sources in TJ

Rise in absolute energy consumption

In 2017/18, absolute energy consumption within the organization was 113.2 terajoules (96.9 TJ excluding Arbon/Changzhou). That figure is made up of electricity (40.6 %), natural gas and biogas (29 %), diesel (24.3 %) and petrol (0.04 %) for our own fleet of vehicles (including trucks), and heating oil (6 %). Energy consumption has therefore risen by 11.4 % compared with the prior period. If we exclude Arbon/Changzhou, consumption is down around 5 % compared with the period 2016/17.

CO_2 emissions also up

In 2017/18 our business activities caused a total of 4,781 tonnes (3,707 t excluding Arbon/Changzhou) of energy-related CO_2 emissions. These are comprised of diesel (42.4 %), natural gas (34.4 %), heating oil (10.4 %) and petrol (0.1 %). Electricity accounts for 12.7 %. At the Zug site, electricity (which we have sourced entirely from Swiss hydroelectric power since 2014) causes zero emissions. CO_2 emissions have therefore risen by 22.7 % compared with the prior period. If we exclude Arbon/Changzhou, emissions are down 4.7 % compared with the period 2016/17.

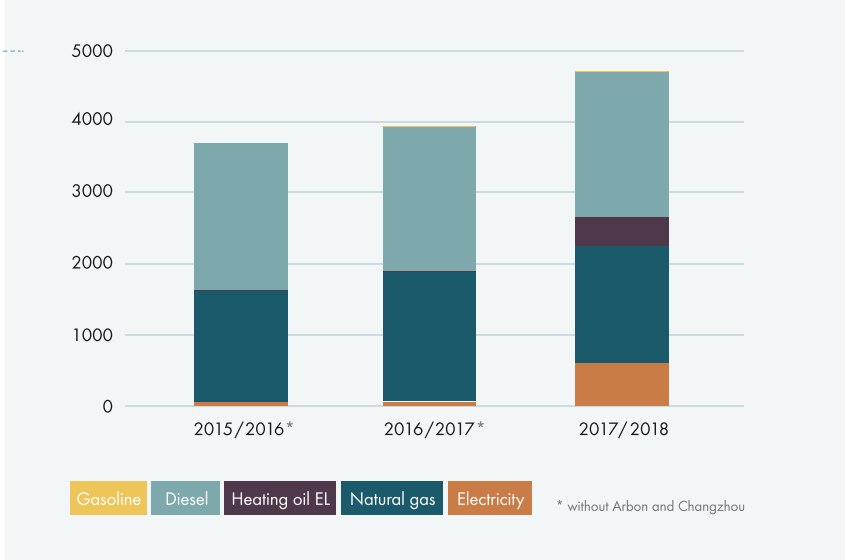

Fig. 9 Direct site emissions (Scope 1; electricity, gas, heating oil EL) and direct off-site emissions (Scope 2; diesel in tonnes of CO_2)

In it for the long haul

Everybody's talking about Industry 4.0, artificial intelligence and machine learning, including us, given their relevance to the digitization of our processes and products. For example, an "Idefix" is in operation on the production line for our combi-steam cookers. This is a driverless transport system that we are currently testing. Put simply, Idefix independently transports parts from A to B. Rather than doing this in a straight line, it takes a longer, apparently circuitous route. The purpose is to gather valuable experience for a point in the future when we deploy driverless systems in production. Recently, we tested acoustic sensors in combination with artificial intelligence (AI) in our quality inspection activities: a microphone attached to the dishwasher door records noise during the wash cycle and the AI in the cloud clarifies in a matter of seconds whether the spray arm inside the appliance is working properly. Even though these and other technologies are not (for now at least) financially viable, we are gaining valuable insights which will be a big help to us later on, for example in remote diagnosis of faults in dishwashers. The objective is to organize production and services more efficiently.

More refrigeration with less energy

Just a stone's throw from the vast lido in Arbon where thousands of visitors go to cool off each summer, our refrigeration technology is a year-long focus for us. Since 2013 we have been producing our range of refrigerating appliances in the premises of the former Arbonia-Forster-Holding. In order to do this even more efficiently in future, last winter we upgraded our thermoforming unit. As the name implies, this unit uses heat as well as a vacuum and pressure to mould the interior containers for our refrigerators. "Thanks to the new unit, we can dismantle our two old units – the new one is faster and more efficient in many respects", explains Max Herger, CEO of V-ZUG Cooling Technology Ltd. As well as being twice as fast, the new technology also makes for a more precise and stable forming process. This in turn enables us to use thinner plastic plates and therefore less material. Plus, because the unit requires significantly less energy to generate the same heat output, we save a lot of energy. Max Herger is very pleased with the results of the first six months: "We expect an energy saving of 20 % or 138,000 kilowatt hours a year compared with the old units; this will make the investment worthwhile in the future, and not just in financial terms", he is pleased to report.

Energy savings
of **20 %** or **138,000 kilowatt hours** per year.

Thanks to a new thermoforming unit

Increasing **energy efficiency** and steadily reducing our **CO_2 emissions** .

Target agreement with the Confederation

A far-sighted investment

Together with other companies in the Metall Zug Group, we have signed a binding target agreement with the Confederation for our Zug and Arbon sites, to the end of 2020. In this agreement, we voluntarily commit to increasing energy efficiency and steadily lowering our CO_2 emissions. In return, we will be exempted from the national CO_2 levy on fuels. In Arbon, we will exceed the targets agreed for 2020, so we can use the leeway this creates to generate CO_2 attestations. For the Zug site, we have repeatedly made a public commitment to carbon-neutral production after 2020. We are sticking to this target, even though it is likely that we will not achieve the agreed reductions by 2020. Paradoxical though this may sound, from the perspective of the Metall Zug Group it is entirely consistent and logical: instead of buying more biogas in the here-and-now to achieve the reduction targets, we are paying an annual fine to the Confederation and a levy to the Metall Zug Group. In 2018, the Group introduced an internal CO_2 levy of CHF 120 per tonne at its subsidiaries for their carbon footprint (heating and motor fuels). These funds are paid into an internal fund which is available for energy efficiency projects, most notably the Multi Energy Hub (MEH) on our main site (see Society). Thanks to these investments, the MEH is likely to be phased in from 2020 onwards, enabling both our production facility in Zug and the technology cluster to benefit sooner from a carbon-neutral energy supply.