



# Closing the Circle 2040

V-ZUG on the way from the recycling economy  
to the circular economy.

This is a PDF with  
clickable elements



Version 2.3  
November 2024

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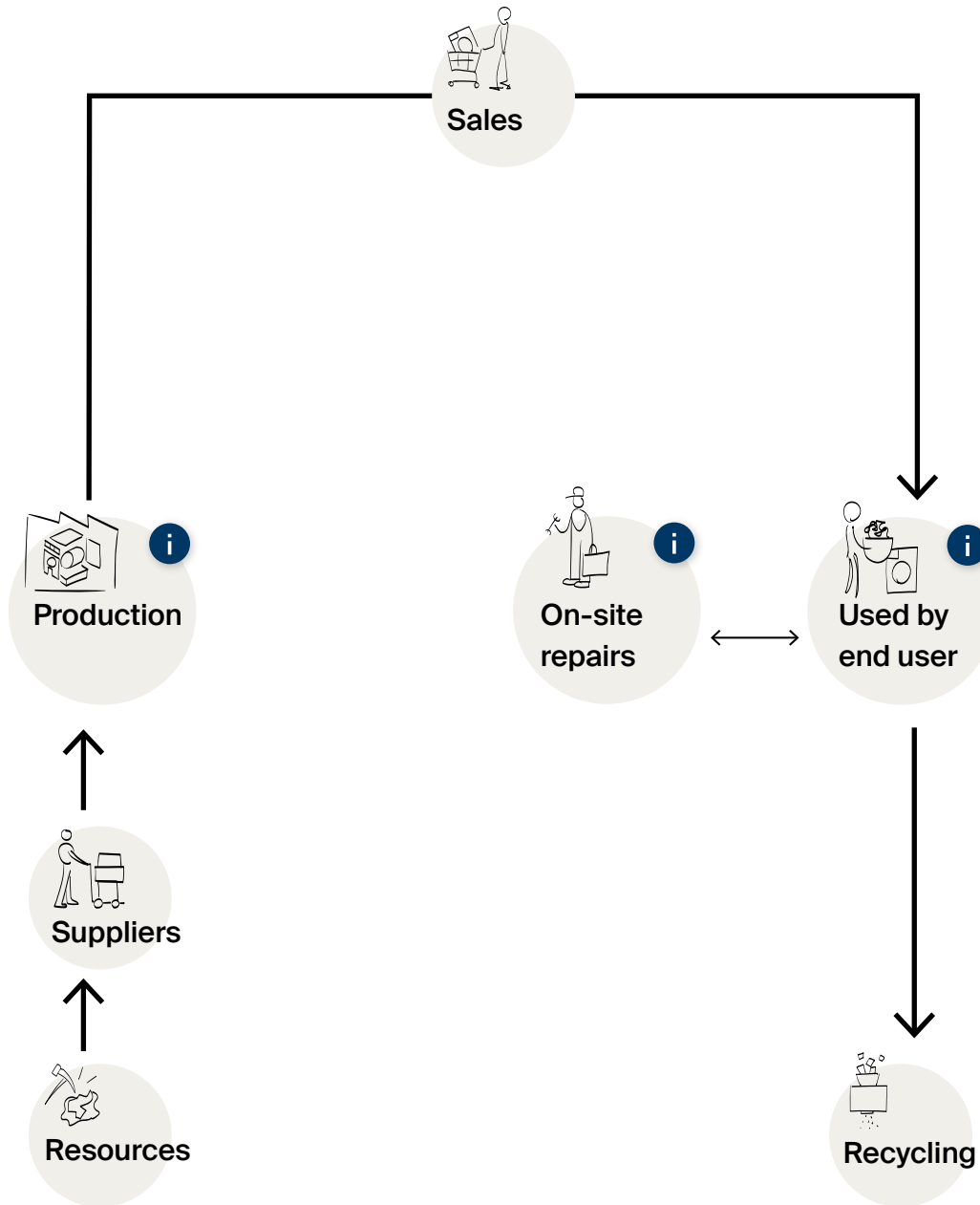
# Closing the Circle

## Perspectives

Yesterday

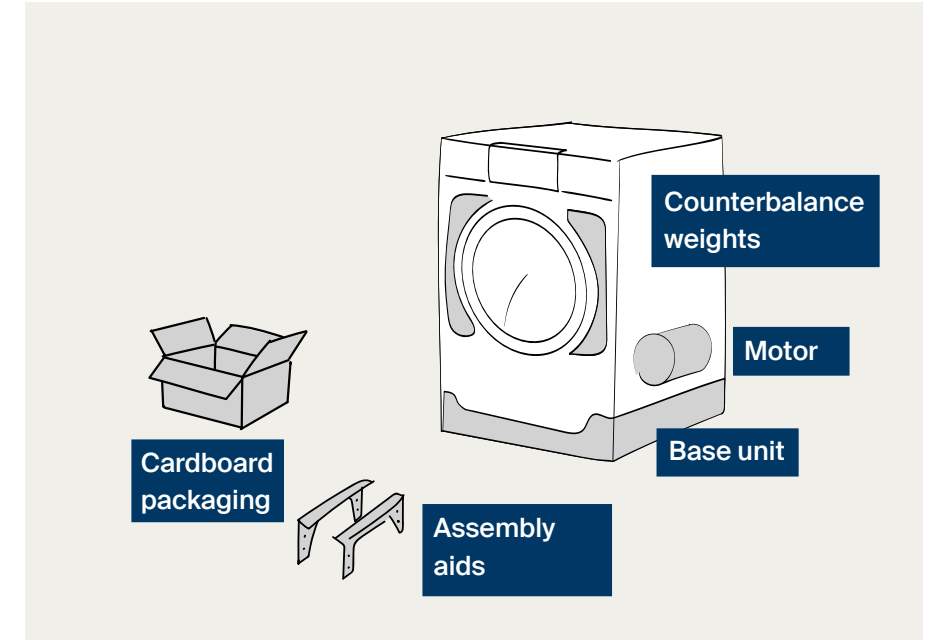
Today

Tomorrow



## The recycling economy

The prevailing linear economic model is characterized by a very high requirement for resources and energy. It involves removing natural resources from the earth (take), creating products from them (make) that are subsequently used, and eventually disposing of them (waste). This system has a severe impact on our environment and our planet's finite resources, which is why approaches such as repairing products and recycling materials seek to counteract this. Thanks to Switzerland's functioning recycling system, we can talk of a recycling economy. Contaminants are correctly disposed of, and valuable materials are retained wherever possible. But in many cases (plastics, electronics and mixed materials), it is only possible to downcycle them or recycle them thermally in waste incineration plants. This system therefore still has plenty of potential to maintain valuable resources in tip-top condition.



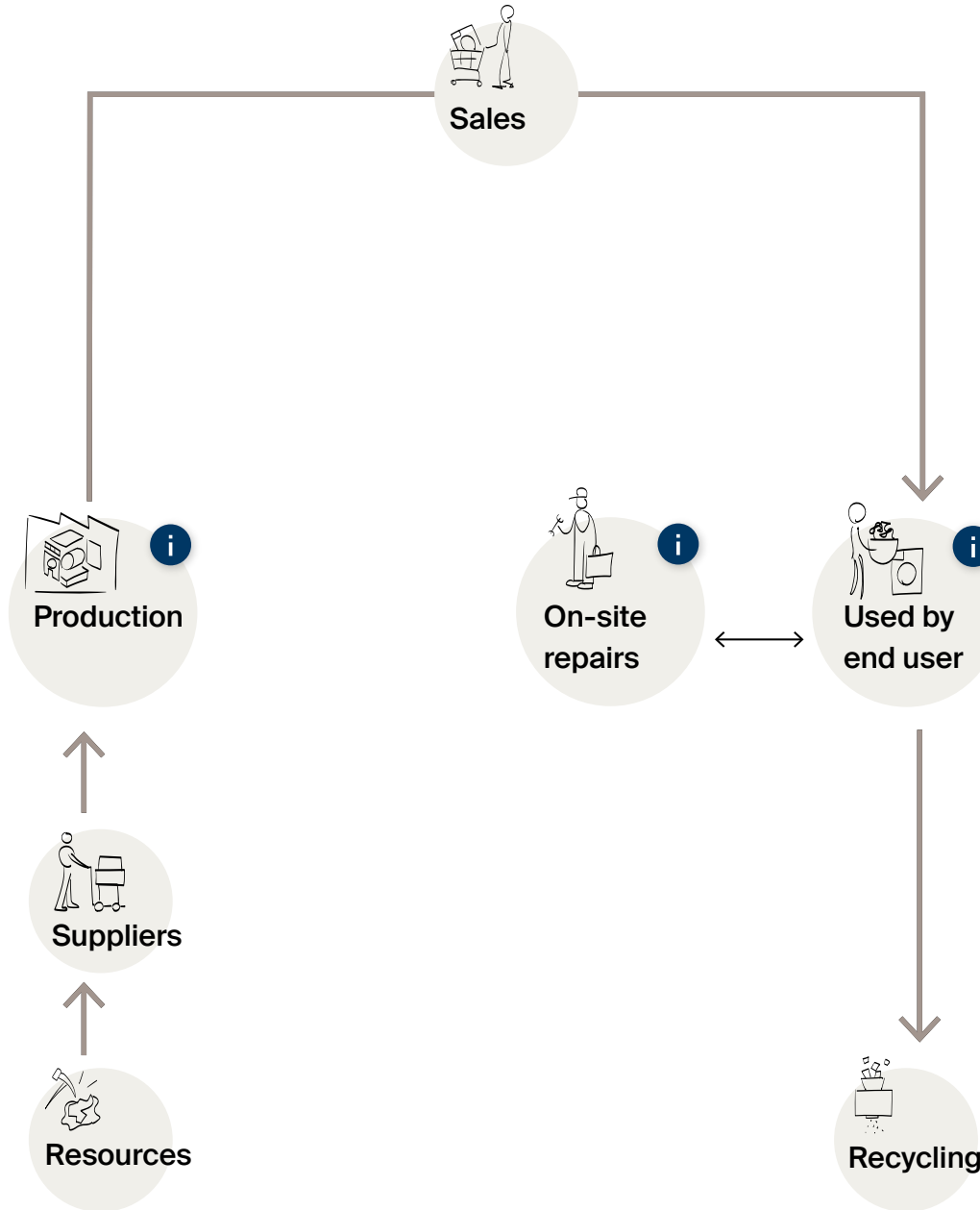
# Closing the Circle

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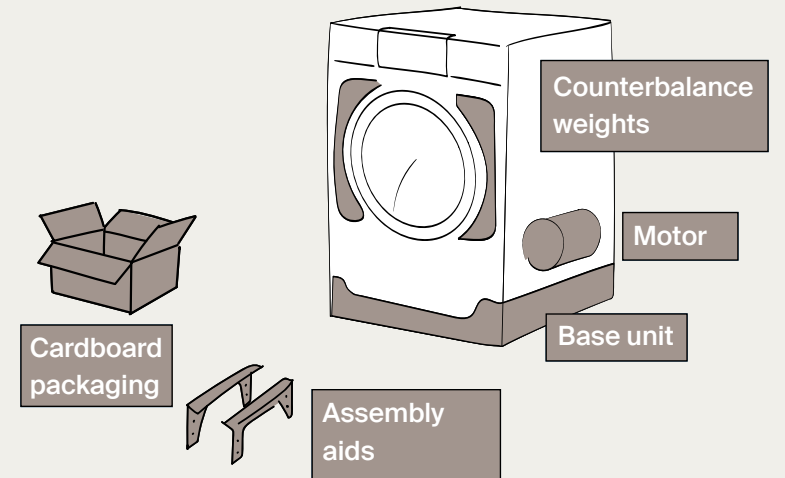


## The recycling economy

### Untapped potential

In the recycling industry, unwanted or faulty products end up being recycled in their entirety. The aim of a circular economy is to recover also the individual materials used. Even though the recycling rate is relatively high today, there is still a lot of potential (refrigerators 83%, large appliances 73%, source SENS 2023). In addition, the majority of current recycling processes are designed for the recovery of metals, but not other materials.

High requirements from subsequently severe impacts is why approaches to counteract can talk of a valuable material electronics recycle them as plenty of



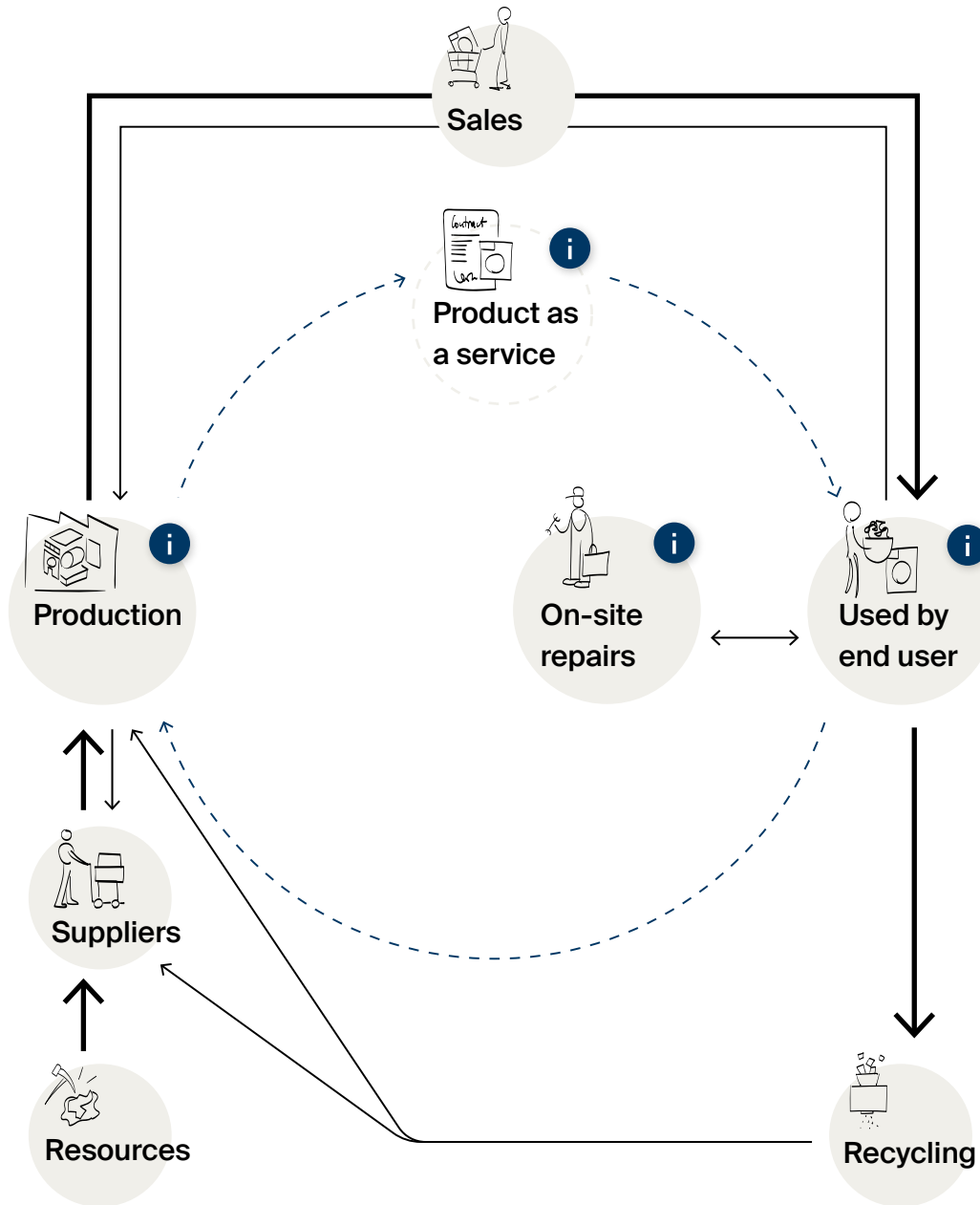
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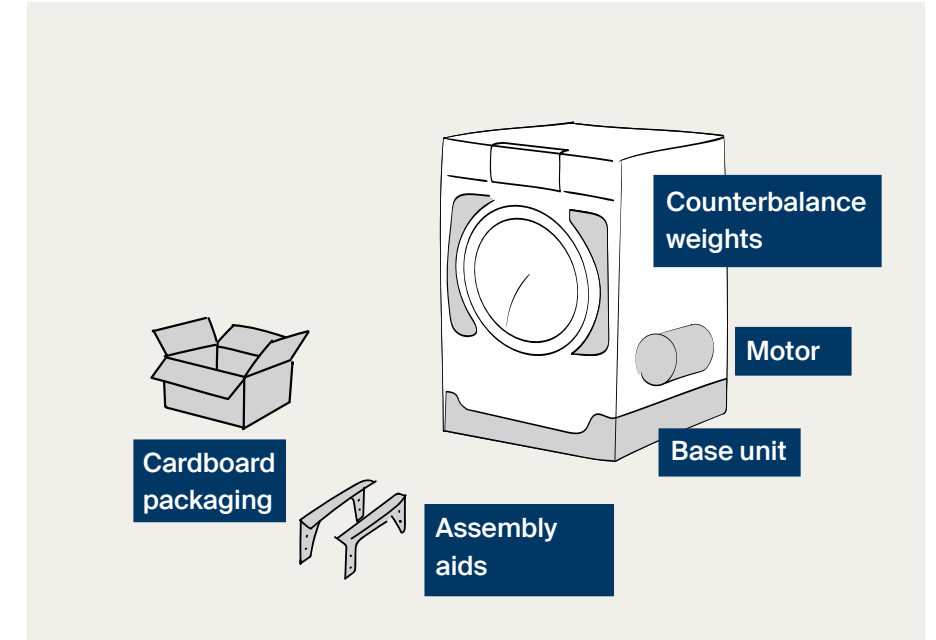
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## On the path from recycling to a circular economy

V-ZUG is using various approaches to move towards a more resource- and energy-efficient circular economy. In doing so, V-ZUG also offers the use of products as a service without having to purchase the product (Product-as-a-Service). Customers benefit from an all-round service and V-ZUG remains responsible for providing the product and maintaining it, then taking it back at the end of the contract period. Approaches such as reusing or reprocessing products, components or parts can then be applied, thereby saving resources and energy. To make a contribution here and now, V-ZUG is working with its recycling partners and other sources of returns (production, service technicians, sales partners, etc.) to keep components and parts from old appliances in circulation for longer in faultless condition.



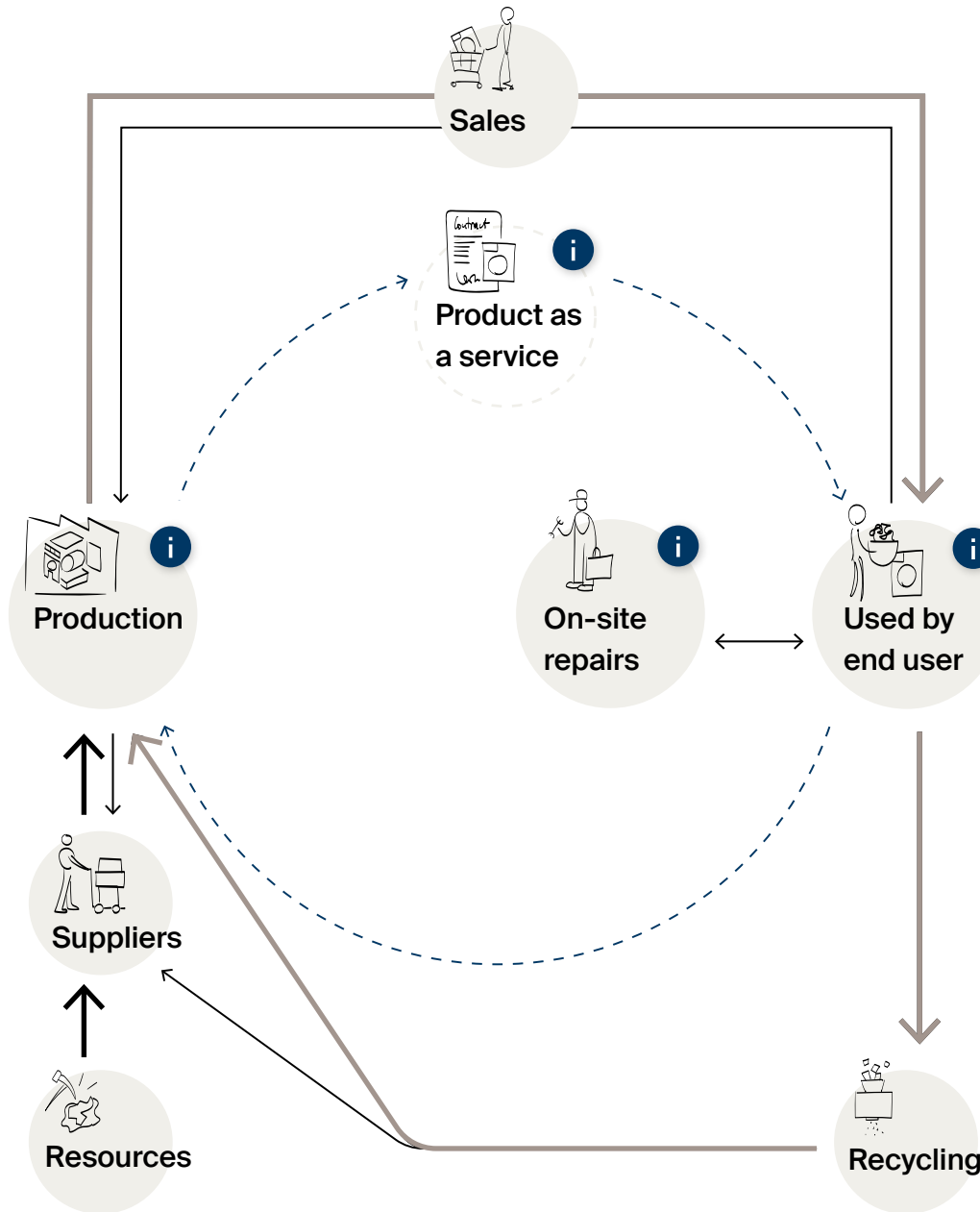
# Closing the Circle

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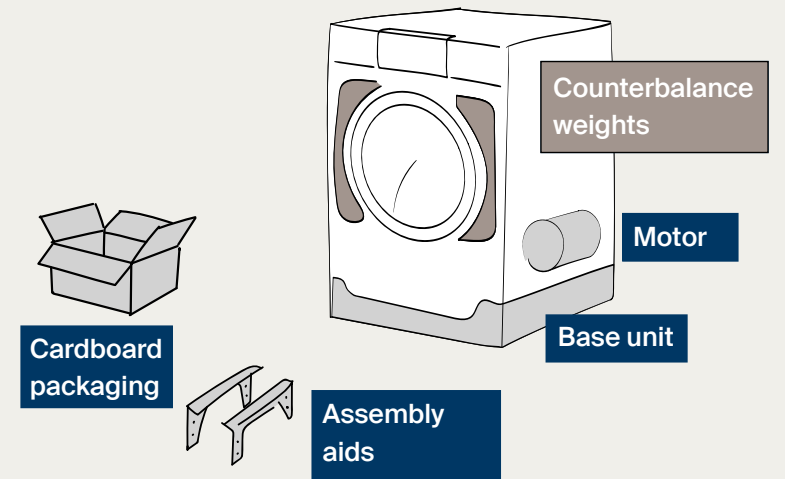
## On the path from recycling to a circular economy

### Counterbalance weights (cast iron)

Counterbalance weights are returned to the factory in Zug via recycling partners who remove them from the V-ZUG appliances.

The weights in V-ZUG washing machines have been identical for a long time and are made of robust grey cast iron. This means that they can be reused one-to-one and there is no need to use new resources. Transport routes are also significantly optimised, as the supplier of the primary raw material is over 1,000 km away from Zug, while the recycling company is only 60 km away. Overall, we can save 95% of the environmental impact (in UBP) compared to the production of new counterweights thanks to reuse.

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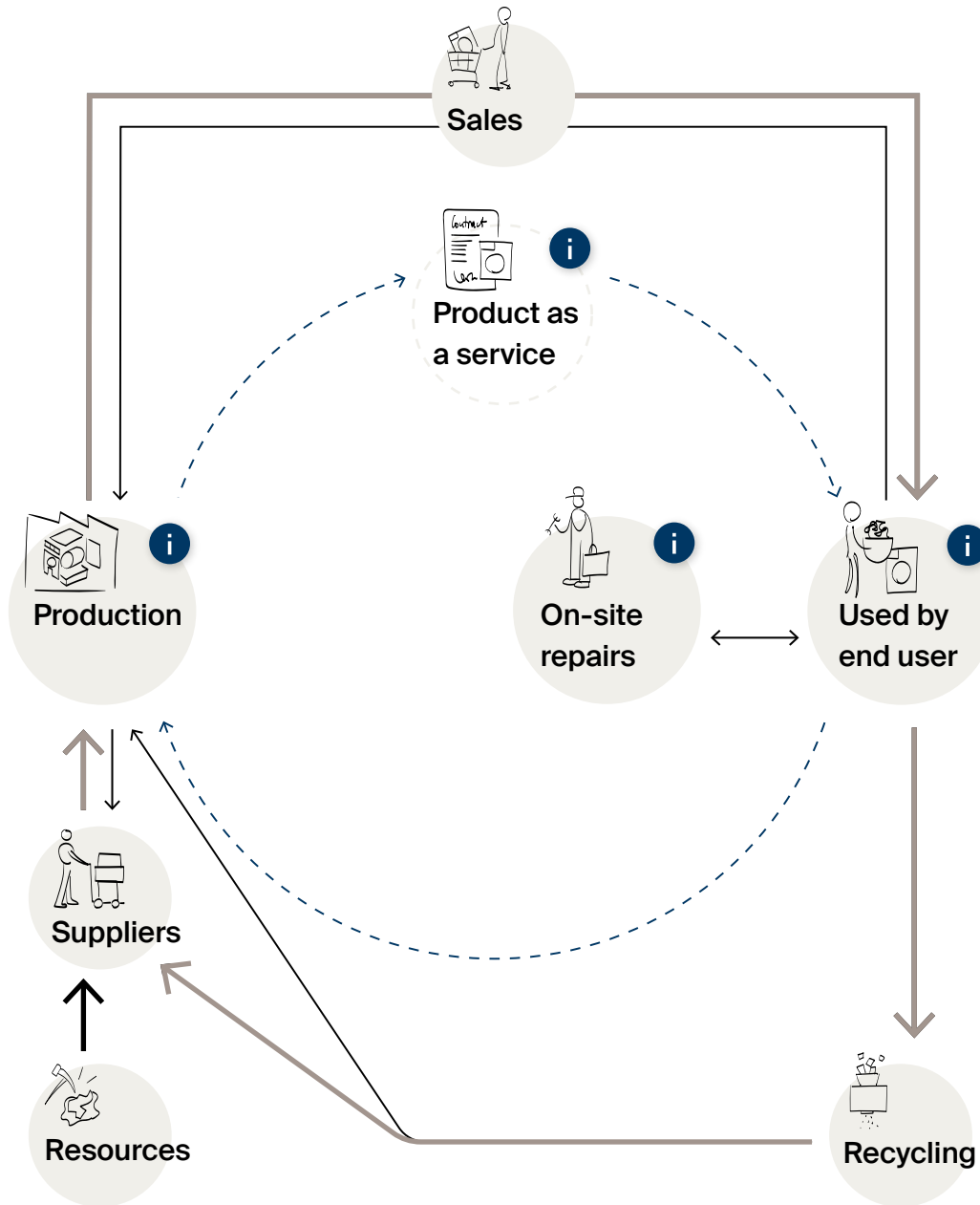
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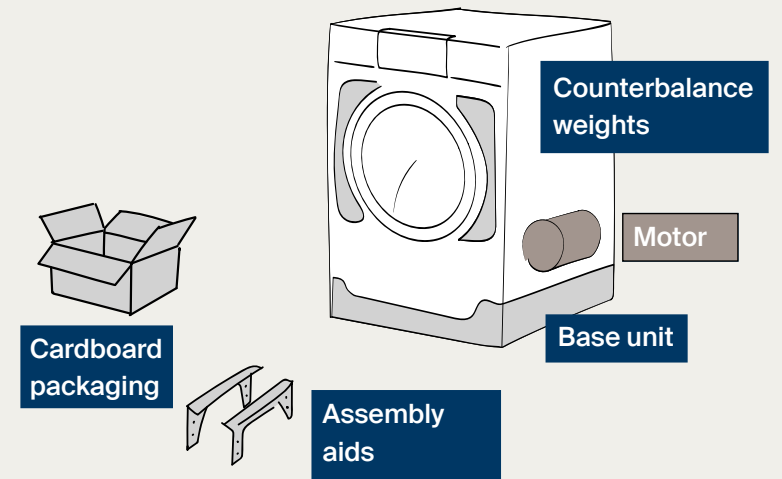


## On the path from recycling to a circular economy

### Motor (electronics)

The motors in washing machines are designed to have a very long service life. Washing machines are often sent to be recycled when their motor could still operate for a considerable number of hours. We are currently ascertaining whether and how these motors could be fitted into new appliances following a professional inspection process – giving customers consistent quality and warranty coverage. In any case, this approach may also be suitable as secondary spare parts for ‘V-ZUG Product as a Service’ appliances for which we retain ownership.

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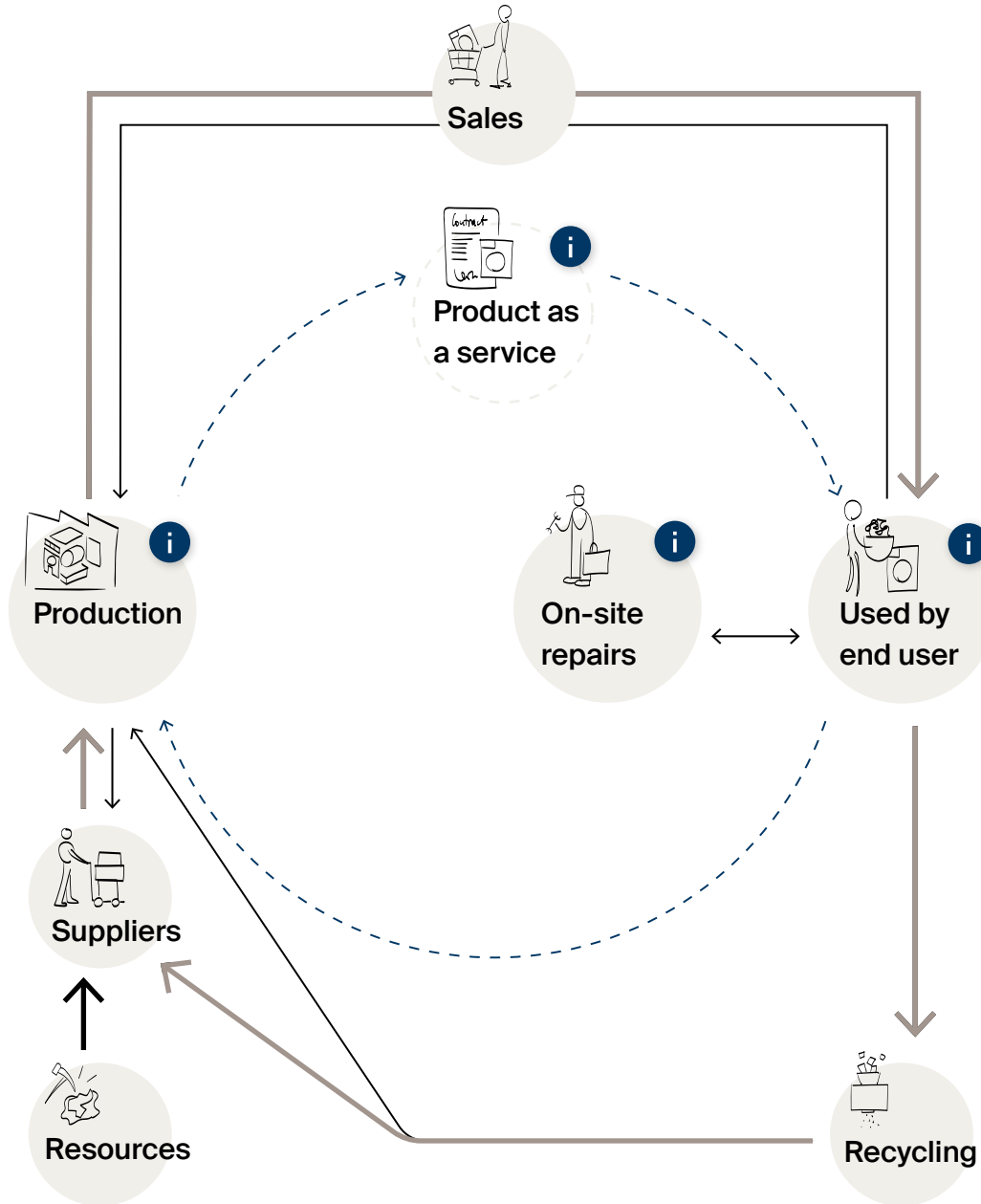
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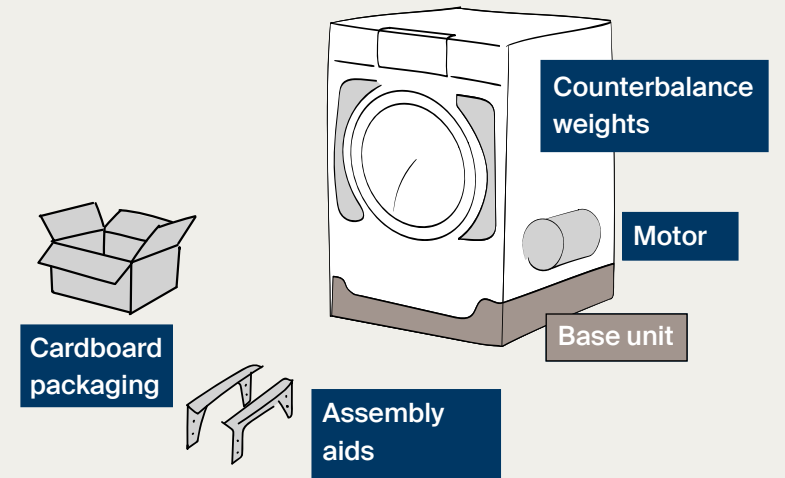


## On the path from recycling to a circular economy

### Base unit (plastic)

Dismantled washing machine base units (made of polypropylene, enriched with 40% calcium carbonate) can be used by our suppliers in Bremgarten (30km away) as a primary material for manufacturing new base units. They are delivered to Zug several times a week and, on the return trip, the supplier can transport used base units and shred them in its plant. This allows us to close the material cycle together with our suppliers. We are currently optimising the processes so that we can scale them up in the future.

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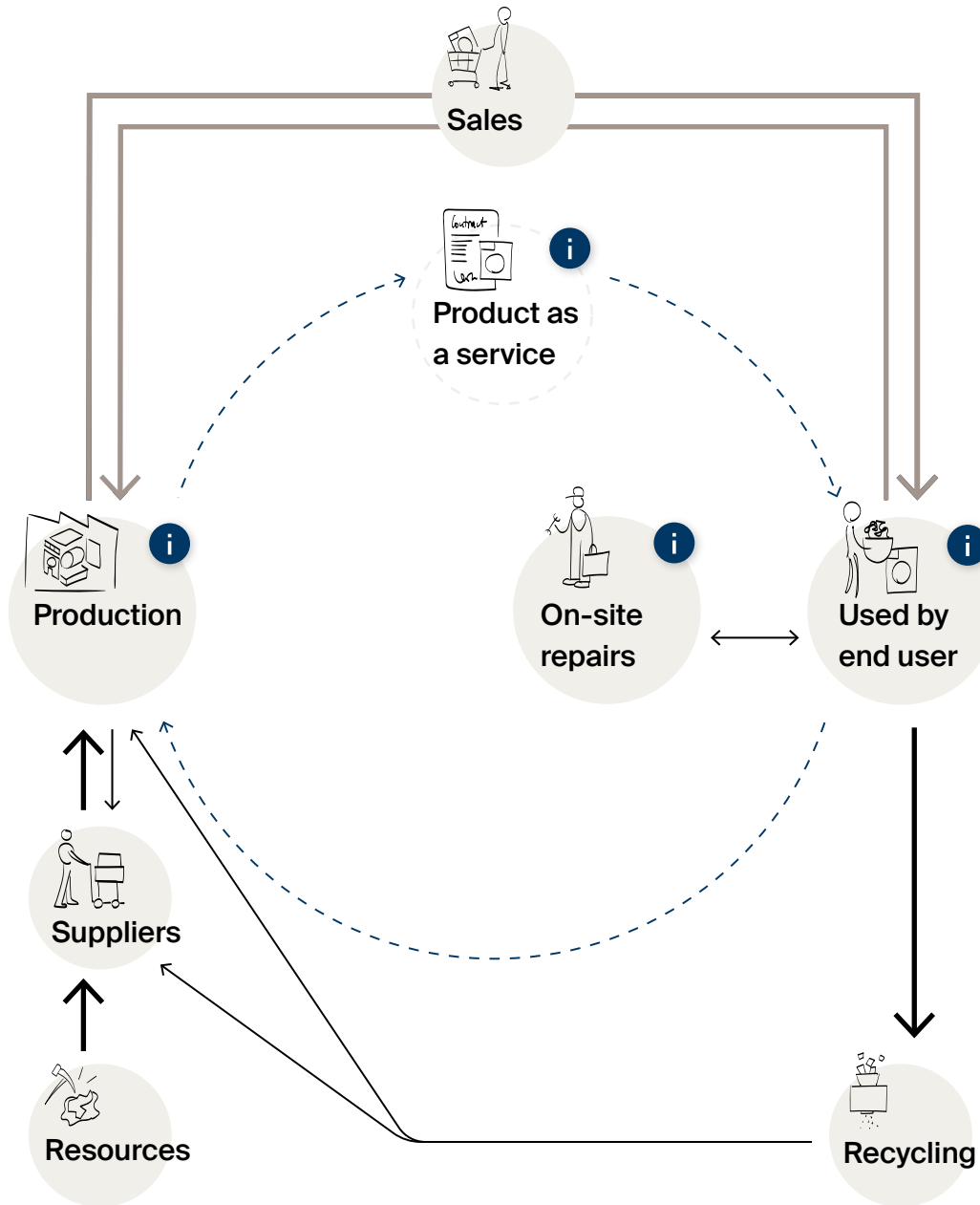
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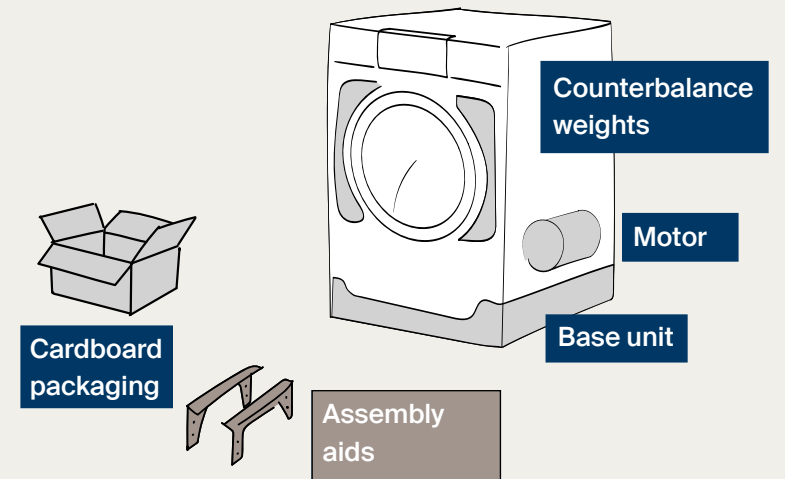


## On the path from recycling to a circular economy

### Assembly aids (metals, plastic)

When appliances are installed, assembly aids are sometimes needed. As this is not clear in advance, these are included with every product. In the event that these parts are not required, our service technicians ensure that they are returned. This means that the parts can be returned to stock on a one-to-one basis. We are also currently looking into how we can ensure the return when the appliances are installed by specialist external partners.

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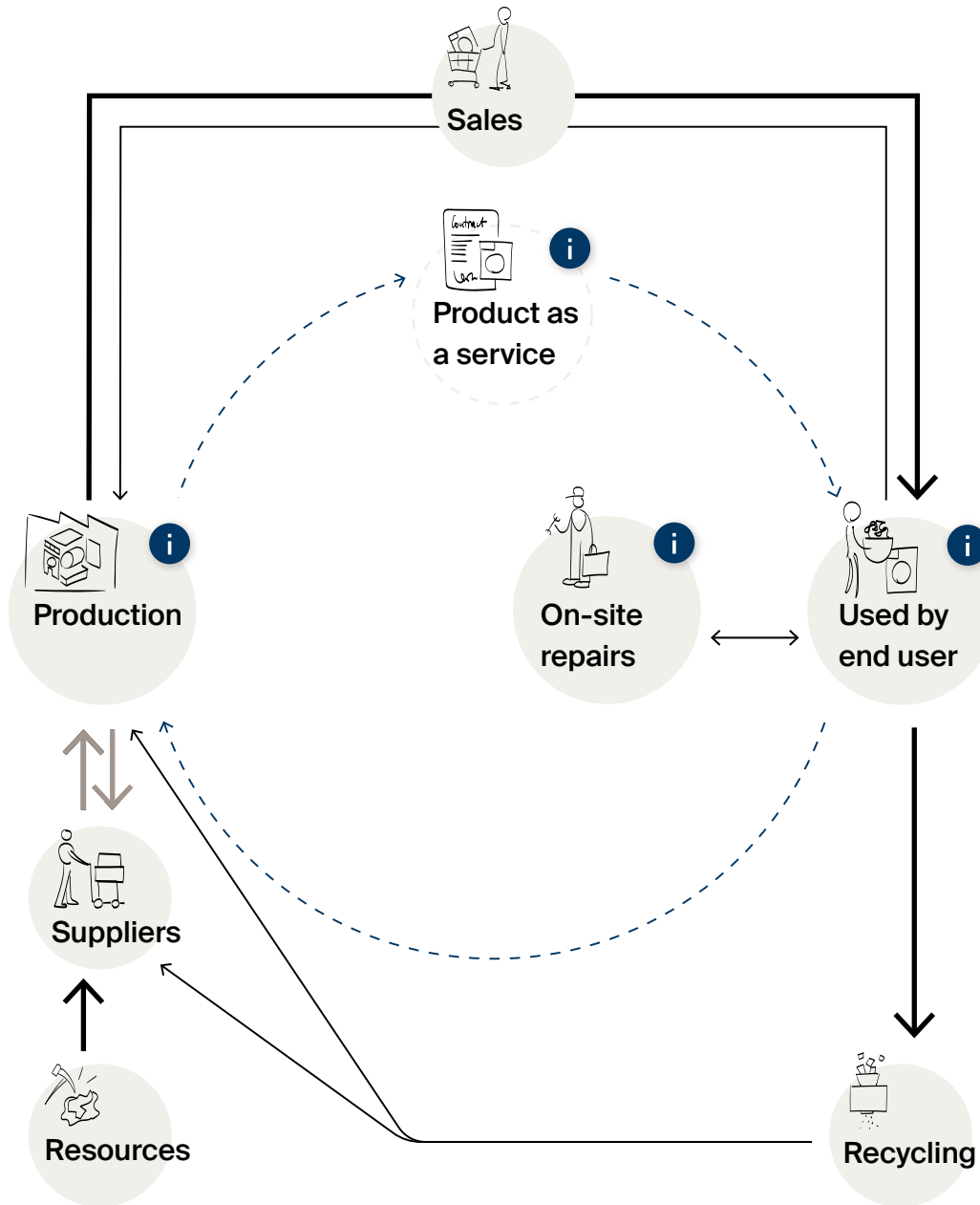
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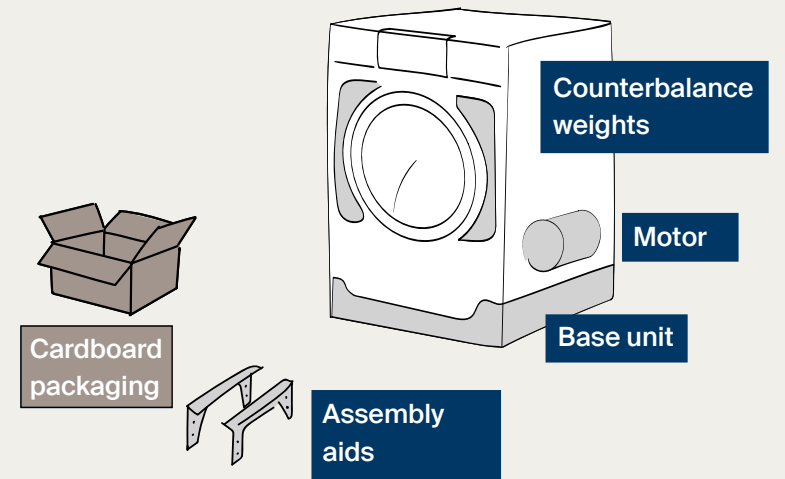


## On the path from recycling to a circular economy

### Packaging (recycled cardboard)

Our cardboard packaging supplier delivers new packaging for our appliances three times a week (70% recycled cardboard) and at the same time we fill the truck with cardboard from the factory for the return journey. After appropriate processing, this in turn is the raw material for our recycled packaging. This results in a circular flow between V-ZUG and its supplier (50km away). Virtually no resources are lost and transport is optimally utilised.

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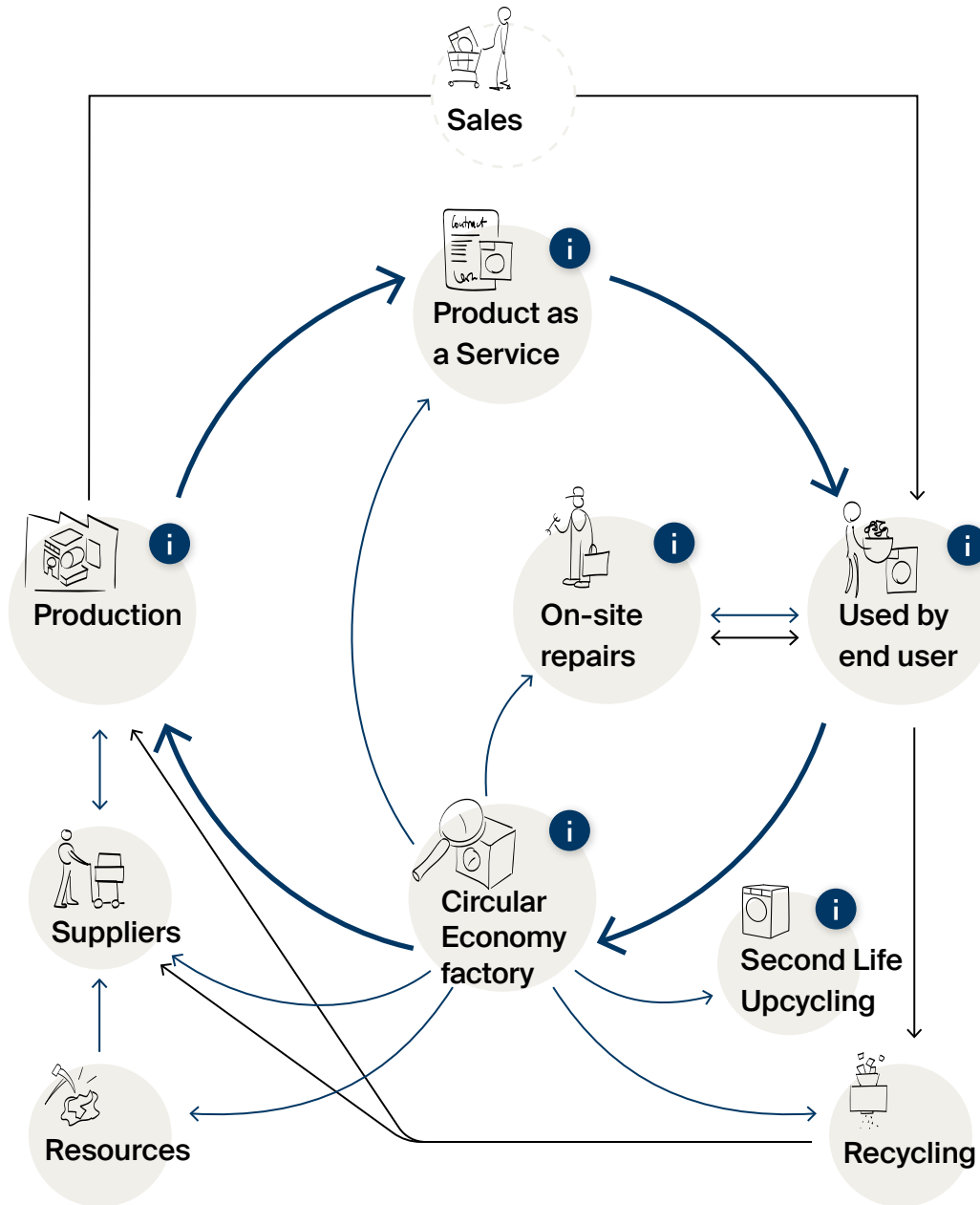
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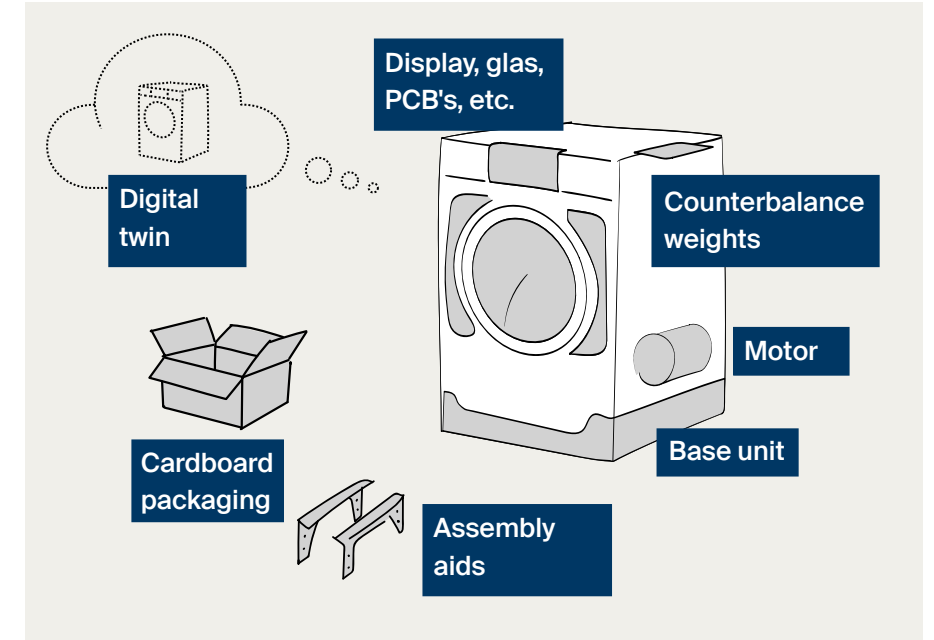
Tomorrow



## Vision 'Closing the Circle 2040' – Implementing the circular economy

The majority of V-ZUG appliances are no longer sold, but instead made available in form of product-as-a-service. These appliances remain the property of V-ZUG and are therefore returned to the factory in Zug, where they are triage (examined and sorted). The aim is to integrate appliances, components and parts into a circular flow and keep them there for as long as possible in order to save resources and energy. To ensure this happens, our products are developed according to design-to-circularity guidelines and our production is geared towards circular manufacturing.

In contrast to the linear economy, this model is therefore no longer based primarily on the use of primary resources, but rather on resources that have already been utilised in the past and incorporated into our products. In this way, the circular economy decouples economic success from resource consumption and thus contributes to a reduced ecological footprint, a sustainable economy and society.



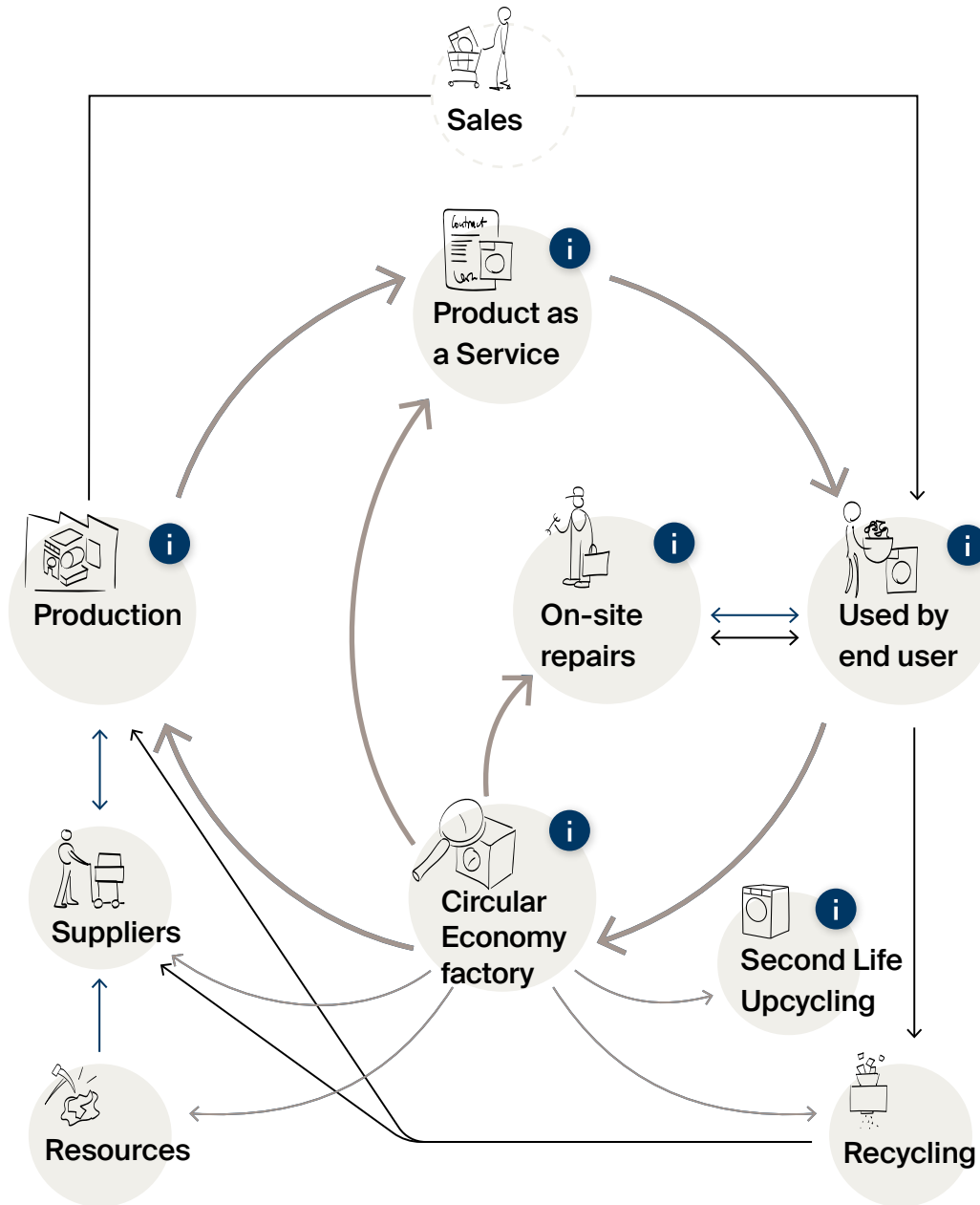
# Closing the Circle

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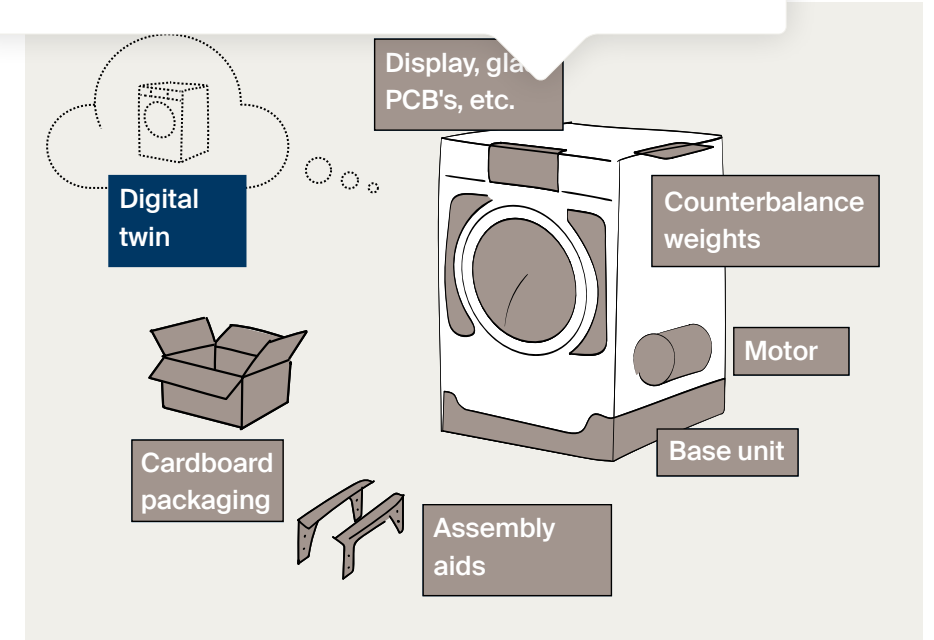


## Vision 'Closing the Circle 2040' – Implementing the circular economy

### Exploiting existing potential

In the circular economy, appliances will no longer end up directly in a recycling facility, but will be channeled through the circular factory. During triage, all resources are assessed according to whether and how they can be reused. The aim is to keep all appliances, components and parts in the cycle for as long as possible in the highest quality. Only when individual parts can no longer be repurposed will they be transformed into primary materials once more via a recycling facility.

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# Production and assembly

The V-ZUG Group continues to invest heavily in Switzerland as a place to think, create and work. With the ongoing site transformation and modernisation of the production facilities in Zug and the new refrigerator production site in Sulgen, operational efficiency and productivity are being increased in order to ensure sustainable and competitive production in Switzerland.



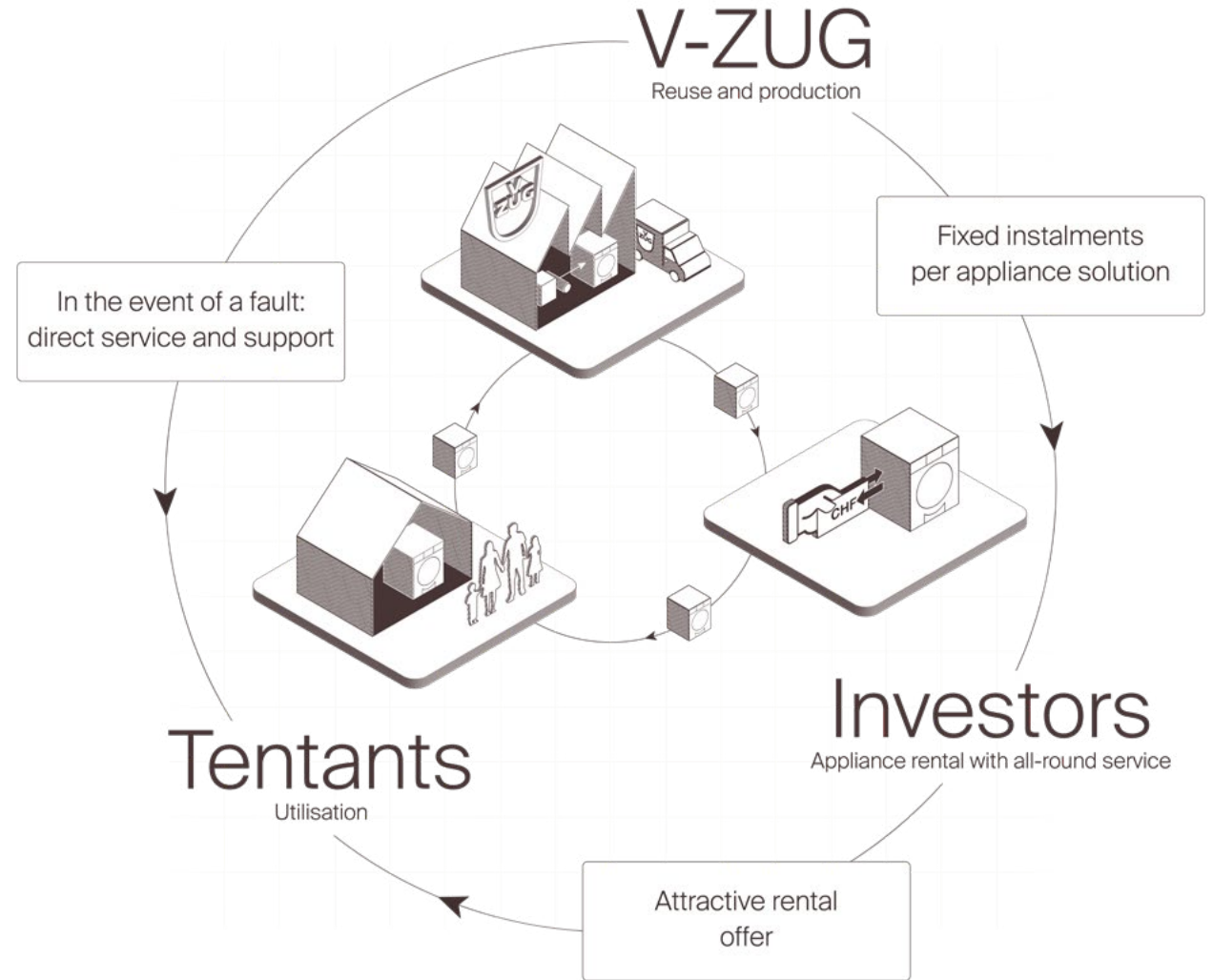


# V-ZUG Product as a Service

Alongside conventional sales in the B2B business, V-ZUG offers a household appliance solution in the form of a service. This essentially involves using services instead of owning products. The service includes installation, service & support, the replacement of appliances and their return. In addition, tenants of our customers' tenants can contact V-ZUG Service directly if something goes wrong with their appliances. Thanks to fixed instalments, the property management or investors have predictable costs over the term of the contract without tying up capital and V-ZUG extends its responsibility for the appliances and ensures their integration into the circular economy.

Additional information about V-ZUG Product as a Service

- [Advantages at a glance](#)
- [Video: Sustainable, fix-rate laundry service](#)





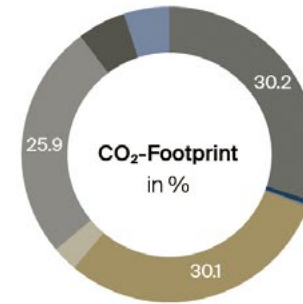
# Usage

What sort of products we develop and how we manufacture them is important. But how our customers use these products is equally important.

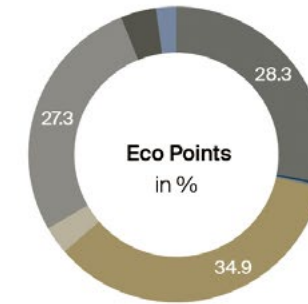
The product life cycle assessment shows where the largest environmental footprint occurs throughout the entire lifespan. Taking the example of a V-ZUG Adora V4000 washing machine, this is as follows (in environmental impact points UBP's): 28.3% is generated during the manufacture of the machine, 69.2% during use (see graph below).

During the usage phase, we want to help our customers to use the appliances as ecologically as possible. We see digitalization and connected appliances as a huge opportunity to provide support in the form of useful advice and functions. Quality, durability, efficiency and access to repairs and spare parts are also important aspects of using resources sustainably during the usage phase.

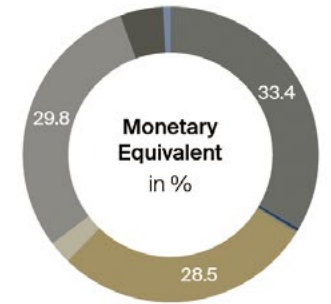
AdoraWash V4000



in % | in kg CO<sub>2</sub>e



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	in %   in kg CO <sub>2</sub> e	in %   in EP	in %   in CHF
● <b>Manufacturing (cradle-to-gate)</b>	<b>30.2   265</b>	<b>28.3   672,000</b>	<b>33.4   309</b>
● Packaging	0.5   5	0.3   7,580	0.3   3
● Transport	0.4   3	0.2   5,520	0.2   2
● Use - Electricity	30.1   264	34.9   828,000	28.5   264
● Use - Water	2.9   26	3.1   72,700	2.4   23
● Use - Detergent	25.9   227	27.3   648,000	29.8   276
● Effect of detergent in water	5.3   46	3.9   93,400	4.6   42
● Recycling/Disposal	4.8   42	2.0   47,840	0.7   7
<b>Total (cradle-to-cradle)</b>	<b>100.0   878</b>	<b>100.0   2,375,040</b>	<b>100.0   925</b>



# On-Site Repairs

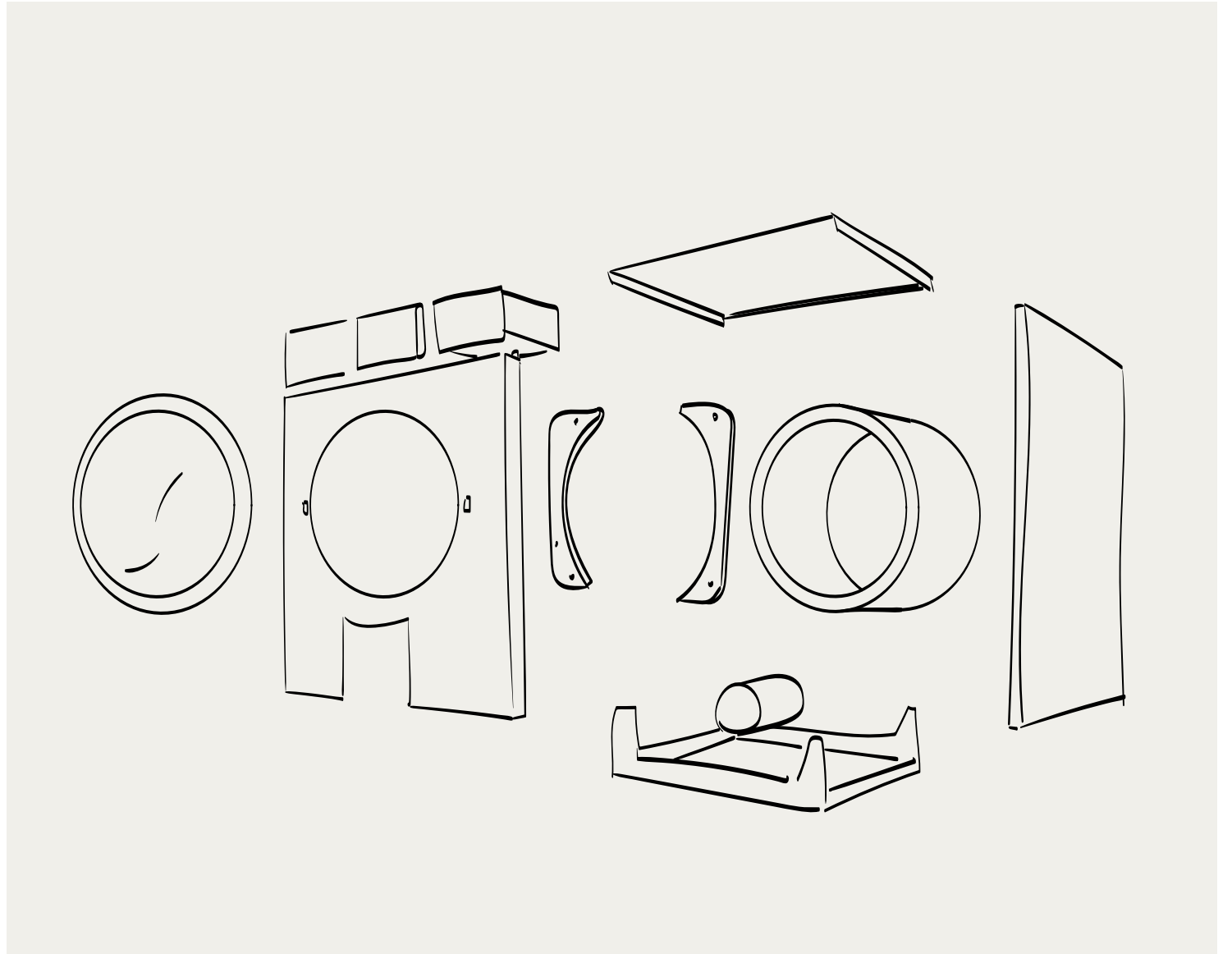
Repairing and maintaining products that are already on customer premises helps to extend their lifetime. From the point of view of a circular economy, these two approaches are very advantageous, since they ward off wear and tear (maintenance), and restore damaged and defective products to working order (repair). The reparability of our V-ZUG appliances and the availability of spare parts for up to 15 years from purchase play an essential role here. V-ZUG is far more than just a Swiss manufacturer of household appliances. For instance, we support our customers throughout the entire service life of our appliances with the leading, most highly skilled service organization in the sector. Over 300 service specialists are deployed at 22 locations in Switzerland, and V-ZUG Service is therefore always nearby, across the country.





# Closing the Circle factory

In the circular economy, production processes will differ significantly from those of today. Not only will primary resources be delivered to our site, but also products that left the manufacturing plant several years before. This requires a "circular economy factory", where the dismantling of "old" appliances plays a key role. Triaging will be carried out to ascertain the best use of returned resources. This will alter production processes, influence product design (for ease of dismantling) and create new jobs. All this has one goal – to keep resources in circulation for as long as possible in great condition. We are looking forward to the future! Where and how the reuse factory will be operated is open to discussion. It will either be created internally at V-ZUG, or existing partners such as recycling companies will develop further in this direction. There will also be opportunities for new service providers and start-ups in this field.

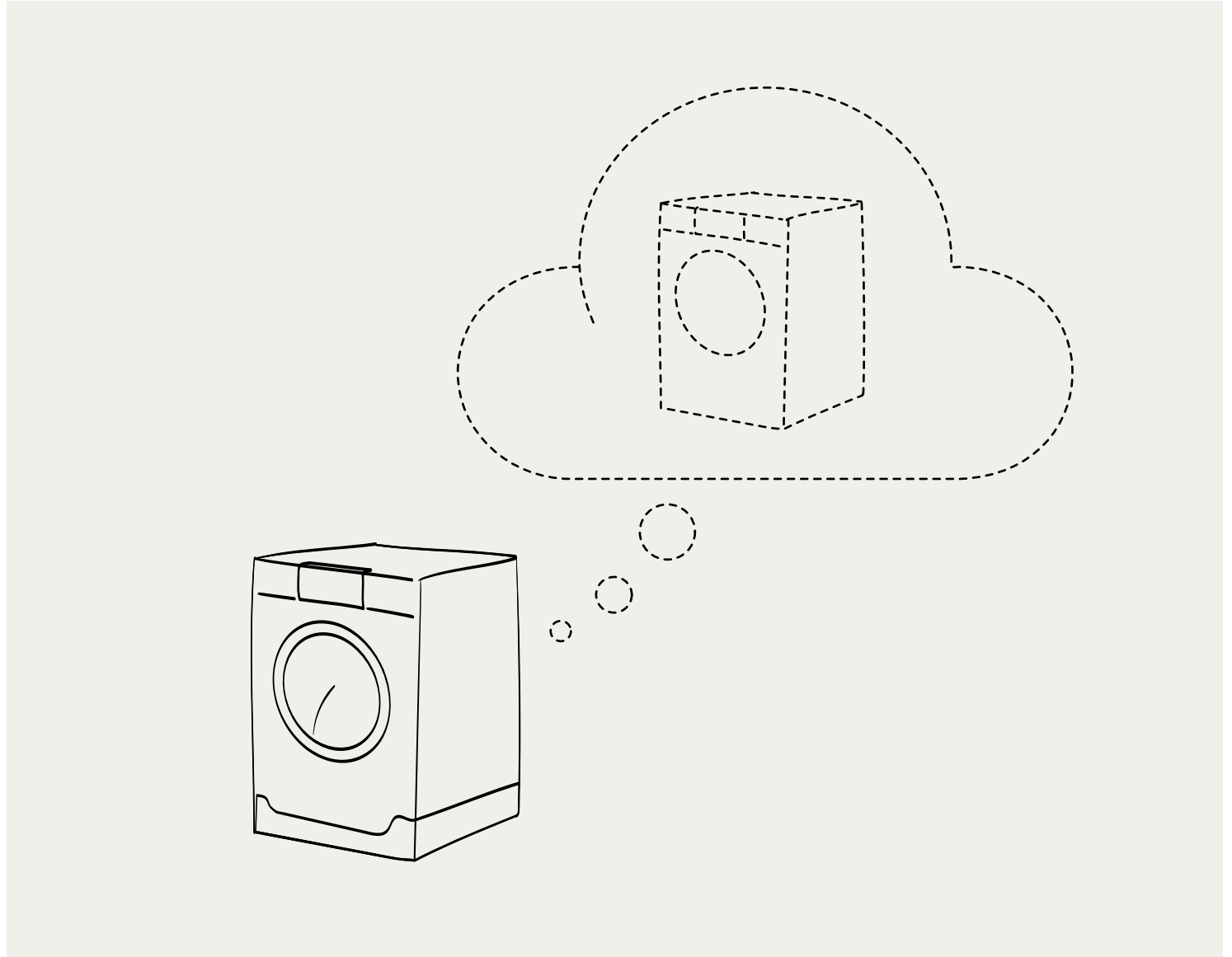






Data will play a key role in the circular economy, in order to design processes efficiently and save the maximum resources. Each product we deliver onto the market has a digital twin in our system. This shows which resources (metals, plastics, electronics, etc.) it contains and how they can be reused in the future. In this way, we have an overview at all times of how many resources are currently in circulation, and when and how we can close the circle. The system also shows service visits. For instance, if a washing machine had a new control board fitted when it was 13 years old, we want to be aware of that when it is returned 2 years later. This control board can continue to be used, either as a spare part or fitted in a "second life" appliance.

# Digital Twin



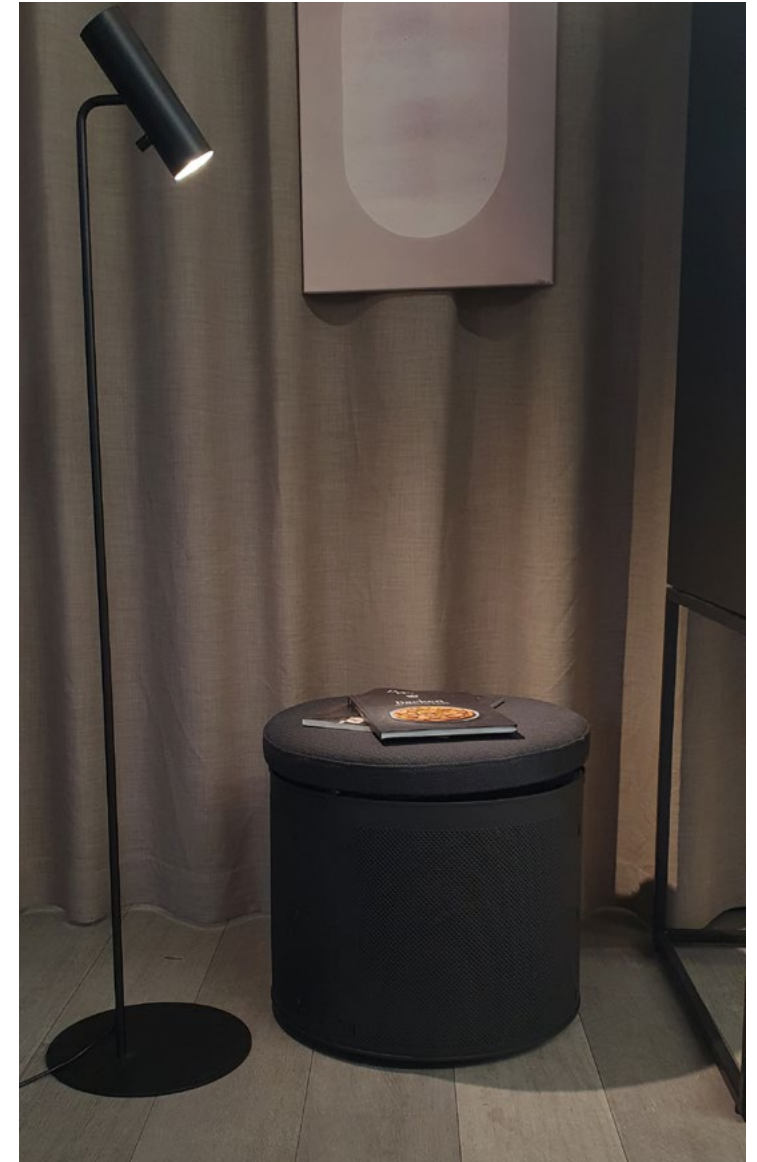


# Second Life – Upcycling

The closing the circle factory decides whether an appliance is to be dismantled or refurbished and given a second life. These Second Life products are repaired, tested, specially labelled and resold.

Link to the shop: [Special Sale - SIBIRGroup AG](#)

If an appliance is dismantled, parts and components can be put to a new use (upcycling). This creates new products that retain raw materials and can be re-used sensibly. One example is used stainless steel washing machine drums, which are turned into high-quality pieces of furniture. (see picture)





Merci!