BSB Environmental Report 2021

The sustainable bottom line has made its entry at BSB, and 2021 has been a year dominated by efforts to benefit the climate.

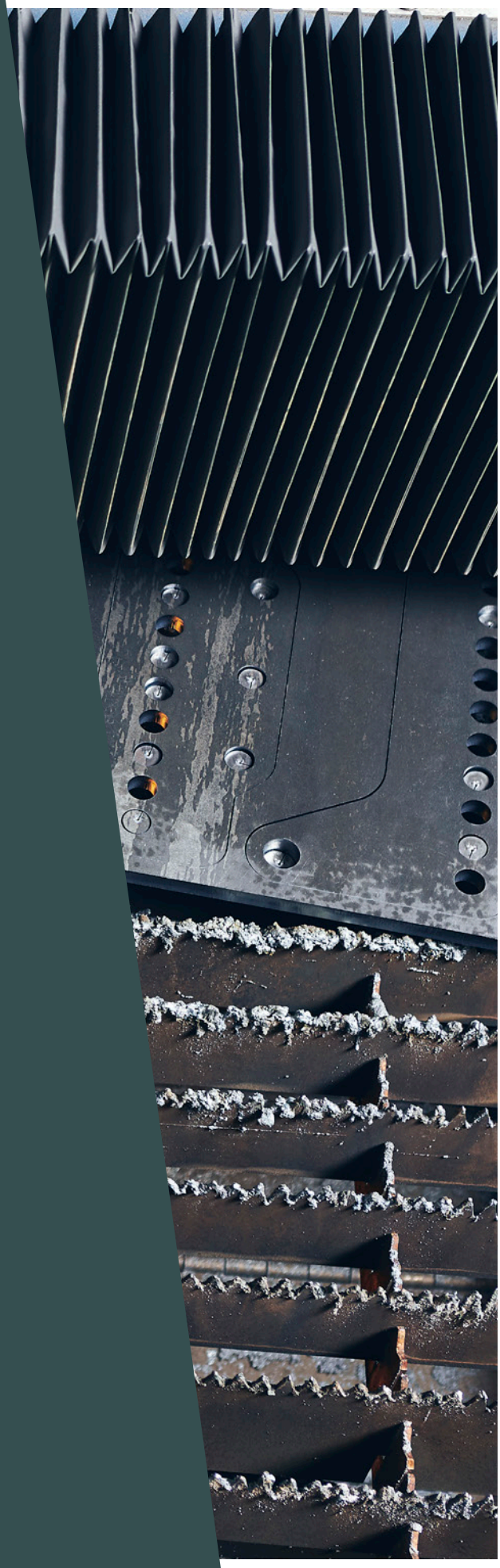
BSB INDUSTRY
World Class in Steel

Preface

In connection with our environmental certifications and the stricter requirements from customers and authorities, we at BSB have focused on a more structured approach to our environmental efforts. With this report we will provide an insight into the efforts we have made and the results we have achieved in 2021.

Many of the efforts are characterized by the fact that we are in the start-up phase, which is natural considering our company having been environmentally certified as late as in 2020. So, 2021 has been the year where we were to find our own environmental voice, while at the same time beginning to deal with an growing list of demands that are popping up like mushrooms in a world where the environment is now a very top priority.

The environment is today by many being equated with CO_2, and it is admittedly a good unit to count in, but one must not forget that sustainability is an equal part of the equation. Changes and improvements must be financially sustainable for the company and not just for the environment. Changes that are not profitable today may be so next year. This we must always keep in mind when we invest in the company, but also when we are affected by new legislation. The sustainable bottom line has thus made its entry into BSB.



Content

Energy audit

In connection with the certification audit in 2020, we became aware of how close we are to being subject to the mandatory energy audit. We will most likely reach this limit in 2022, and accordingly we have prepared for the requirement. Since we are certified in accordance with ISO14001, we need only to comply with chapter 6.3 in ISO50001 - Energy Management.

Throughout the year, we have worked on mapping our energy consumption. All the different energy consuming units have been measured over a period. This means that we have been able to identify where the largest consumption takes place. The analysis of these figures has then given us an overview of which energy-consuming units we need to work on reducing.

Priority 1-3 has already been chosen, but the actual activities will not be planned until 2022.

Energy consumption analysis

Relevant areas	Location unit	kWh	Measurement period	Per day	Estimated annual consumption	Relevant variables Day/night/weekend Summer/winter and the like
Machinery (broken down by processes), including related operations like compressed air, extraction, cooling and the like	Heidenhein	2892	25	116	34704	Hours, tools
	Visionwide	2673	43	62	18651	
	ESAB	1746	36	49	14549	
	Fermat	12873	70	184	55170	
	Ermaksan	1729	71	24	7306	
	Laser 7 kw	13186	78	169	50700	
	Mazak	945	21	45	13500	
Ventilation	Hall 1	17541	79	222	66611	Active welding hours
	Hall 2	14879	26	572	171681	
	Hall 3	15639	30	521	156390	Workload, items
Processes for heating	Heating pump K	740		740	222000	Summer/winter
	Gas K	0			30636	

Figure 1 Electrical power consumption

Waste efforts

For several years our waste management has been a subject of frown, and everyone has been aware that it could be significantly improved, but that it was a big task to begin to map waste and costs.

Therefore, it is indeed satisfying to be able to state that we have finally reached our goal. This is happening at the right time, as the governmental Executive Order on Waste has stipulated that the municipalities must implement a transformation within waste. This also affects businesses, so it is no longer just a desire to improve waste management, no, it is now also a requirement.

A thorough preparation has now been made to map quantities and cost, so we know what our baseline looks like. It's relevant so we know if we're moving in the right direction. Here, of course, it is important to keep in mind that we can not only look at absolute quantities, but also must put it in relation to the increased production caused by increased growth.

We have also entered a partnership with DAKA Refood, which is responsible for handling food waste.

At the same time, there is increased focus from our customers regarding the amount of waste generated as a result of their orders, and this mapping will serve as a strong foundation.
In the figure below, we see one of the principles that we must adhere to in the future when we improve our efforts within waste.

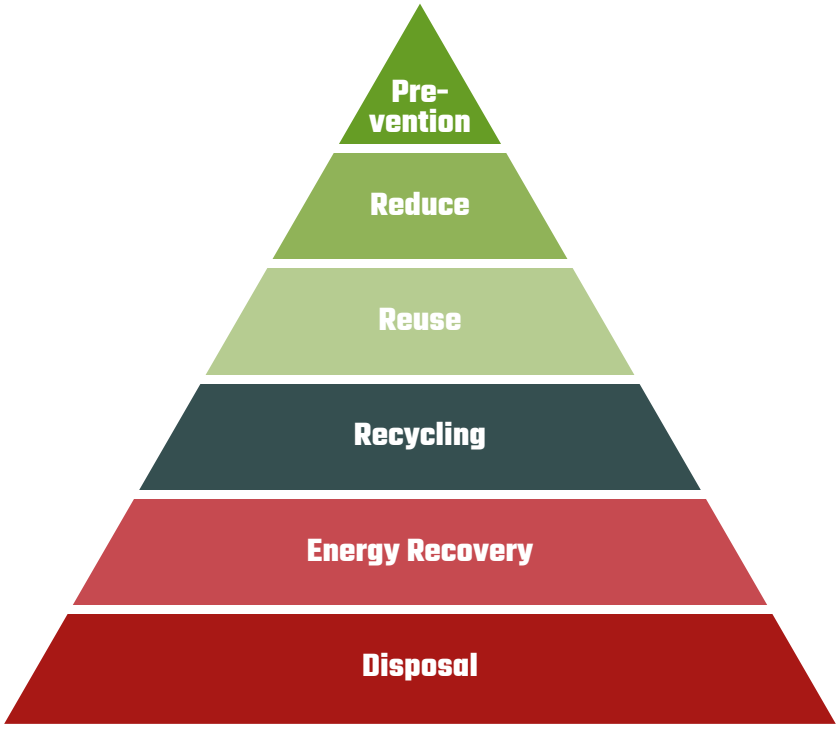


Figure 2 The Waste Hierarchy Pyramid

CO_2 accounting

It is not possible to talk about sustainability and climate without talking about CO_2. CO_2 is the best known unit for visualizing the environmental impact of a business. As a company, we are increasingly being met by demands for measuring and reducing this.

We have started on the journey that is about CO_2 mapping. We have thus created a baseline so that we can begin focusing on the things that contribute the most to our CO_2 emissions. It comes as no surprise that we as a company are making a heavy impact when measured in terms of CO_2, as we have a large consumption of steel, which binds a lot of CO_2 in manufacturing, production and transportation.

We have gained control of our Scope 1 and 2, which are the simplest areas, as these are primarily about consumption, heating, electricity and fuel.

Scope 3, which is about everything we buy, we have been working on, but due to its very extensive mapping needs, it was put on hold. Therefore, the table below is not exhaustive, but gives an indication as to where our emissions are located.

Overview over the CO_2e emissions of the company

	Tons CO_2e	Tons CO_2-e, outside scopes	Total tons CO_2-e	Distribution of tons CO_2-e (%)
Energy and processes 2019	560.3	20.9	581.2	0.6%
Purchases 2019	95,120.8	0.0	95,120.8	99.3%
Transportation 2019	93.1	1.6	94.7	0.1%
Waste and recycling 2019	0.1	-12,089.1	-12,088.9	0.0%
Total	95,774.3	-12,066.6	83,707.7	100.0%

Figure 3 CO_2-udledning

GCO

Green Circular Transformation

GCO (Grøn Cirkulær Omstilling in Danish) is an EU-funded project, where we in collaboration with the Danish Design Center have worked on sustainability from a design angle. It should be noted that sustainability is not only about CO_2, but also about doing the right thing for both the environment and people in accordance with the UN's sustainable development goals.

We were assigned an advisor who was to kickstart our ability to transform our processes in a sustainable direction, and at the same time we were given some tools that in the future will enable us to work on finding solutions that create a bottom line through sustainability. Design thinking is a way of looking at design, materials, processes, packaging and production. In short, the whole chain to see if we can change the packaging, for example, to reduce CO_2 emissions.

As we are basically order-producing and not involved in the design of products, we do not have a direct opportunity to influence, for instance the choice of material, but in the long run there will be some parameters where we will be able to have a dialogue with the customer.

To complete the GCO project, we had to fill out a workbook along the way and create some projects where we could exercise the various tools.

Project number 1

Replacing spacer blocks

Today we use 110,000 kg of wood each year as spacers between our flanges. As a starting point, the wood must be heat-treated in order to be used for global transport, but otherwise there are no additional requirements. Without knowing what our customers are doing with the wood on their site, we would like to investigate whether it could be possible for us to replace the wood with another material that has the same capability but does not have the same impact on the environment, that is have inexhaustible sources and be easy to dispose of or pass on to other recipients.

After a brainstorm, we started exploring the market for different types of materials that could be used; cork, rubber from used tires, coated cardboard/paper etc.

It turned out that these alternatives were quite expensive, and right now not relevant to further explore as options. If an opportunity for a deposit system (take-back system) appears, then this project is worth revisiting.

Along the way, we also became aware that we do not require that the wood is sustainable.

Sustainable wood can, for example, be FSC- or PEFC-labeled. Both markings are officially approved and help to promote responsible and sustainable forestry. The goal has therefore been that we, over a period, should move from unmarked wood to labeled wood. This does not do anything for CO_2 emissions but helps support sustainable forestry.

Figure 4 Brainstorm

Project number 2

Use of surplus water

After installing heat pumps, quite a lot of condensation water is formed, especially during periods when the heat pump works hard, for example in severe cold weather and at high outdoor temperatures. Until now, the condensate has just run down into the ground.

The idea was that this water, if it was clean enough, could be used in the production process, and thus it could save us from using domestic water. Water collected in a clean container is clean enough to be used for cooling of thermal cutting.

To implement this, piping was installed, which makes the water accessible.

After the setup has been running for a few months, the calculation shows that the setup has paid for itself in 1.4 years, together with the water savings, which on an annual basis will be approximately 160 m^3.

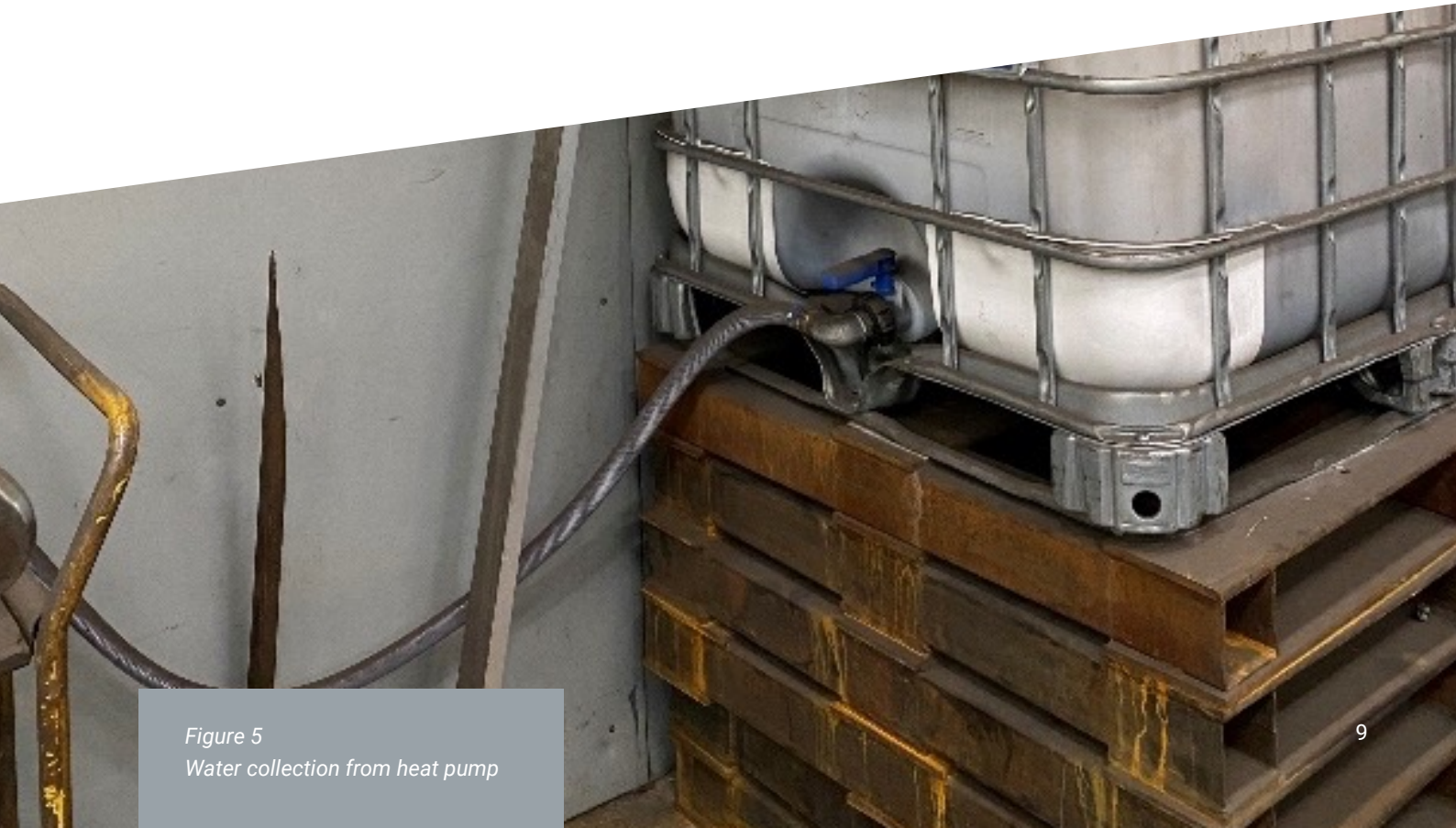


Figure 5
Water collection from heat pump

Project number 3

Phasing out PSE

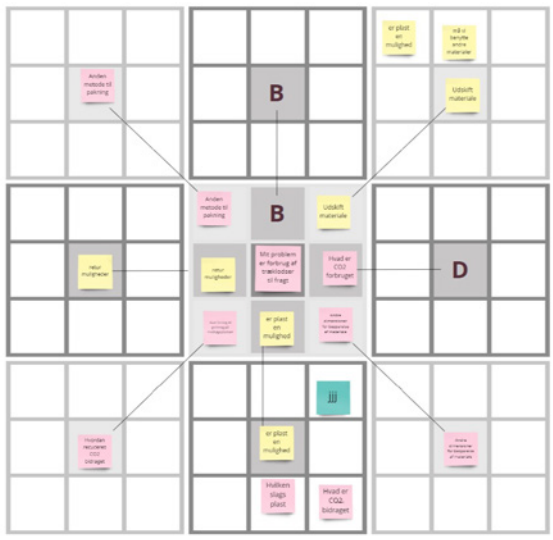
Fiberglass parts are supplied with PSE (flamingo) as shock-absorbing spacers. Our customers do not want PSE on site, so we remove all PSE when repackaging and replace with blue PE foam.

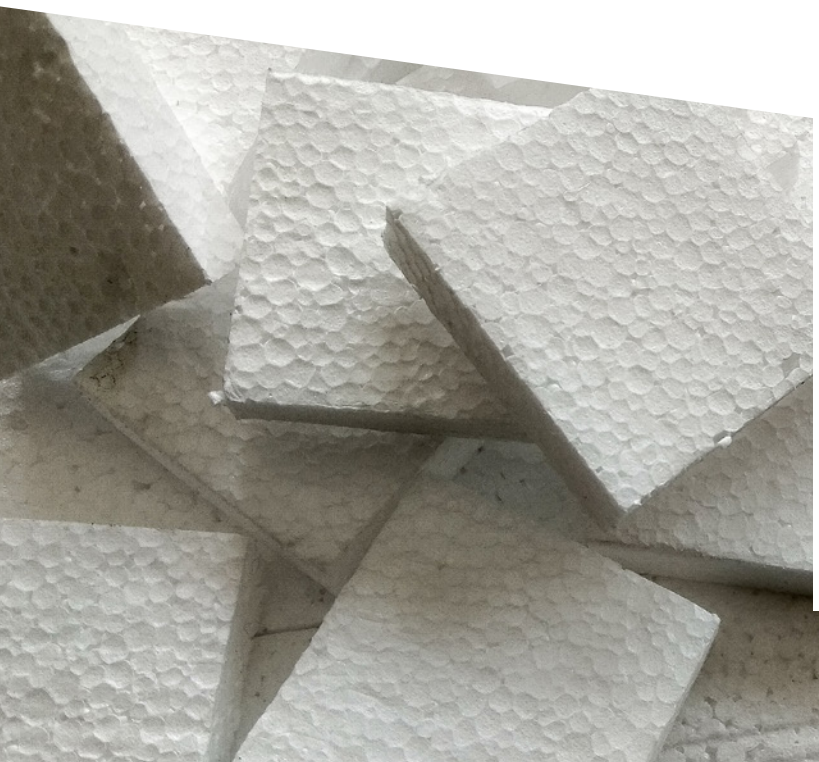
On a monthly basis, we handle about 250 kilos of PSE, which is picked up by the company Marius Pedersen. If we can completely abolish the use of PSE, we will be able to save both handling in hours, reduce financial costs and in addition become more sustainable. PSE corresponds roughly 1: 1 in CO_2 with PE foam, but PE Foam is significantly better in terms of recycling than PSE. The business case shows that handling and abolishing PSW in those quantities costs between DKK 40,000 and DKK 50,000 annually. This cost can be used to finance a possible higher price at the supplier if they were to replace PSE with PE foam.

After being in contact with the supplier, we have found out that there are requirements for the load-bearing capacity of the spacer material. It has not been possible to obtain that information from the PE supplier, so if it is to be found, it will require an analysis of the material, and it is not economically relevant at present.

Instead of avoiding PSE, we have used the project to look at how we can eliminate PSE in a more appropriate way while maintaining the bottom line. For example, by using idea-Sudoku. This project is on-going into 2022.

Figure 6 Idea-Sudoku





Consumption

Consumption falls under scopes 1 and 2 in the climate accounts and are some of the factors that are easier than others to control and influence. It is also a requirement from our customers and may become a condition in 2022 from the authorities when we as a company grow to a size that makes energy audits compulsory.

Gas Kongsbjerg

In 2020, we went from heating with gas to heat pump, but since we have chosen to keep gas as a backup, there will still be a consumption in periods with very low outdoor temperatures.
It will therefore only be relevant to look at the absolute consumption and not the relative consumption in relation to working hours. Here we see a halving of consumption of gas in 2021 (Figure 7).

Absolute consumption of gas

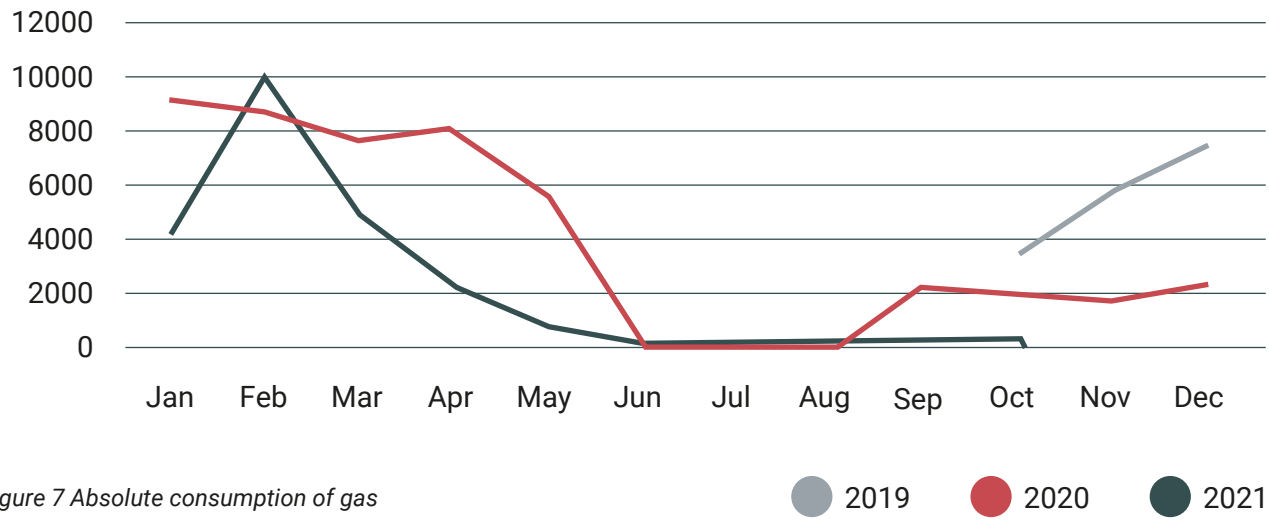


Figure 7 Absolute consumption of gas

Electricity

As mentioned above, electric heating became our primary heating source in 2020, and it has been exciting to monitor consumption. Even if we buy green energy, electricity consumption will always be a focus area for us and be a matter of both CO_2 impact and financial cost.

Absolute energy consumption

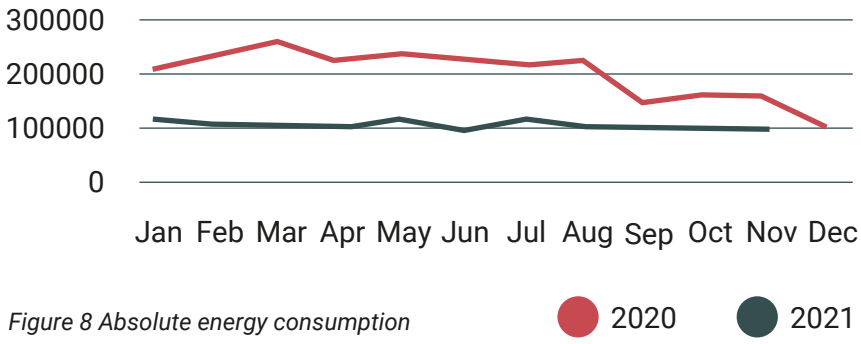


Figure 8 Absolute energy consumption

Particularly surprising is that consumption has fallen to a uniform level. We have also experienced a better indoor climate with stable temperatures, which benefits our employees. In total, we need 27 percent less electricity, corresponding to 60 tonnes of CO_2 saved out of 444 tonnes.

Relative energy consumption

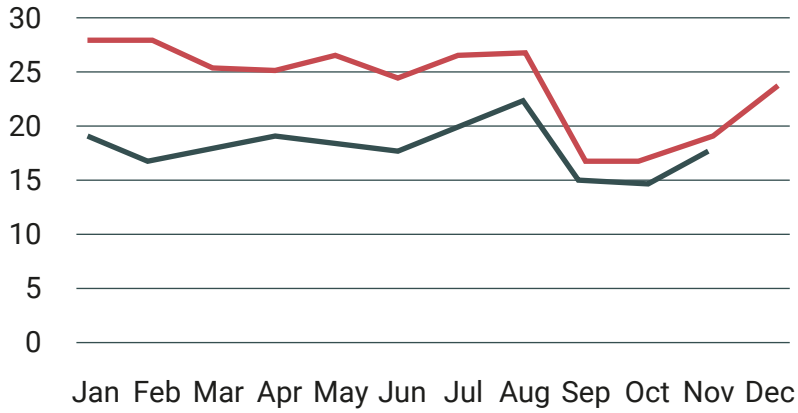


Figure 9 Relative energy consumption

As a bonus, we have further discovered that our consumption per hour has been reduced by 25 percent. Again, a saving in terms of money as well as of CO_2.

A look into 2022

In 2022, we will become sharper on our CO_2 accounts, including a possible purchase of software for calculating our climate footprint. It is important that we find a model that can be used to calculate our climate footprint based on customers, because that is the way the wind blows in the wind industry.

In addition, we need to leverage the data we have collected through 2021 and use it as a steppingstone to select the next projects to work on. Among other things we must select and initiate actions that can reduce our consumption in the energy audit's top 3.

We must continue to work with waste management, including sorting and the possibility of reducing waste volumes, but also how we can work more with the cascade principle, where we turn our trash into other people's treasure.

In the future, the environment will be a competitive parameter, and customers will expect us to do more. It's not just a question of money, but also of image.

We have gotten off to a good start and, benefitting greatly from networks and relationships in the industry, we gradually build up and perfect our competencies. As it is often the case, once you get started, things will be easier next time. This is the kind of synergy that we intend to ride on in 2022 as we look forward to launching new and exciting initiatives.

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