



2021 Annual performance activity review of Environmental Permit EPR/BB3790FX

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Contents

1. Terms of reference.....	3
2. Reporting of emissions to air for the period from 01/01/2021 to 31/12/2021.....	4
3. Reporting of emissions to sewer for the period from 01/10/2021 to 31/12/2021	5
3.1 Emission Points W1 & W2	5
3.2 Emission Point S1	5
3.3 Aluminium emission control project.....	5
4. Reporting of Water Usage for the year 2021	6
4.1 Water consumption	6
5. Reporting of Energy Usage for the year 2021	7
5.1 Electricity.....	7
5.2 Gas	8
6. Reporting of other performance indicators for the period 01/01/2021 to 31/12/2021.....	9
6.1 Finished Product.....	9
6.2 Waste Product	10
6.2.1 Waste Product - Carbon Footprint Reduction.....	11
7. AluK's environmental objectives for 2022	11
7.1 Carbon Reduction Plan	12
7.3 Packaging Project	12
7.4 Power paint re-purpose/recycle	12

1. Terms of reference

Condition 4.2.2 of Environmental Permit EPR/BB3790FX requires AluK (GB) Ltd to provide a report on the performance of the activities over the previous year. This report shall include a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data.

The reporting periods for the annual parameters set out in Tables S4.1, S4.2 and S4.3 are from 01/01/2021 to 31/12/2021 and shall use the reporting forms as described in Table S4.4.

2. Reporting of emissions to air for the period from 01/01/2021 to 31/12/2021

On the 5th & 6th October 2021 Environmental Compliance Ltd (ECL) were commissioned by AluK to undertake an emission monitoring survey of Emission points A1 & A2 at their Chepstow Plant. Table 1 below presents the findings of the study and demonstrates compliance to the Emission Limit Values as described in Schedule 3 – Emissions and monitoring of Environmental Permit EPR/BB3790FX. A full copy of ECL Emissions Monitoring Survey P4887 is available upon request.

Table 1 2021 Emission monitoring survey for points A1 and A2 – Results

2021 Emissions monitoring survey - Results							
Emission Point	Substance/Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
A1	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	70 mg/m ³	Periodic (average over hour)	0.25mg/m ³	BS EN 14792: 2017	06/10/2021 09.45 – 10.45	3%
A1	Sulphur dioxide	25 mg/m ³	Periodic (average over hour)	0.11mg/m ³	BS EN 14791:2017	06/10/2021 09.30 – 10.32	13%
A1	Particulate matter	25 mg/m ³	Periodic (average over hour)	0.35mg/m ³	BS EN 13284-1:2017 & MID	06/10/2021 09.30 – 10.32	85%
A1	Hydrogen fluoride	2.0 mg/m ³	Periodic (average over hour)	0.08mg/m ³	BS ISO 15713:2006 & MID	06/10/2021 11.05 – 12.05	13%
A2	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	70 mg/m ³	Periodic (average over hour)	0.22mg/m ³	BS EN 14792: 2017	05/10/2021 15.46 – 16.46	3%
A2	Sulphur dioxide	25 mg/m ³	Periodic (average over hour)	0.11mg/m ³	BS EN 14791:2017	05/10/2021 12.20-13.22	13%
A2	Particulate matter	25 mg/m ³	Periodic (average over hour)	0.48mg/m ³	BS EN 13284-1:2017 & MID	05/10/2021 12.20 – 13.22	64%
A2	Hydrogen fluoride	2.0 mg/m ³	Periodic (average over hour)	0.07mg/m ³	BS ISO 15713:2006 & MID	05/10/2021 14.00 – 15.00	13%
Legend:							
A1 - Flash Anodising Process Scrubber							
A2 - Pre-Treatment Process Scrubber							

3. Reporting of emissions to sewer for the period from 01/10/2021 to 31/12/2021

3.1 Emission Points W1 & W2

Emission points W1 & W2 relate to the source emissions to water of uncontaminated surface water drainage via interceptors into unlined balancing lagoons. The limit parameters of oil and grease (none visible) and pH (min 6 max 9) have not been breached during the period between 4th January 2021 and 24th December 2021. All parameters were within their respective emission limit value (ELV).

3.2 Emission Point S1

Emission points S1 relates to the source emission from the Effluent treatment plant.

The daily limit parameters of pH (min 6 max 9) have not been breached during the period between 4th of January 2021 and 24th December 2021. pH was within its specified limits.

The daily flow limit of 144m³/day (emission point M1) has not been breached during the period 30th of September 2021 to 31st of December 2021. Installation of an MCERTS flow meter was completed on the 30th of September 2021 which followed by detailed audit of the flow measurement system done by MCERT certified company on the 8th of December.

Breaches of limit parameters Total Aluminium (ELV 2.0mg/L) that occurred during 2021 have been reported to the Natural Resources Wales NRW via the Schedule 5 notice procedure. These Schedule 5 notifications are available upon request.

3.3 Aluminium emission control project

During 2021 the following initiative relating to Total Aluminium (Al) emission control was carried out. In September 2021 AluK finalised ETP improvement project. New installation has been commissioned and connected to the ETP control system and is fully operational. The in-line aluminium (Al) monitor is now on a feedback loop to the ETP. Readings above the emission limit value (ELV) will result in the discharge from the sand filters being automatically re-directed to a storage tank so that it can be treated again in the ETP to reduce the Al concentration to at or below the ELV. This should prevent discharges to sewer exceeding the ELV.

4. Reporting of Water Usage for the year 2021

4.1 Water consumption

Water consumption during 2021 was 13,396 m³. This was 12,731 m³ or 48.7% less than 2020, Table 2. The reason for the drop was the ceasing of final effluent dilution which was previously taking place until October 2020, Figure 1. Although the same Covid 19 impacts were seen due to the site shut downs, the effect was minimal when compared to the dilution.

Table 2 AluK - Water consumption comparison 2020 and 2021

	2021 m ³	2020 m ³	Variance m ³	Variance %
Total	13,396	13,396	-12,731	-48.7

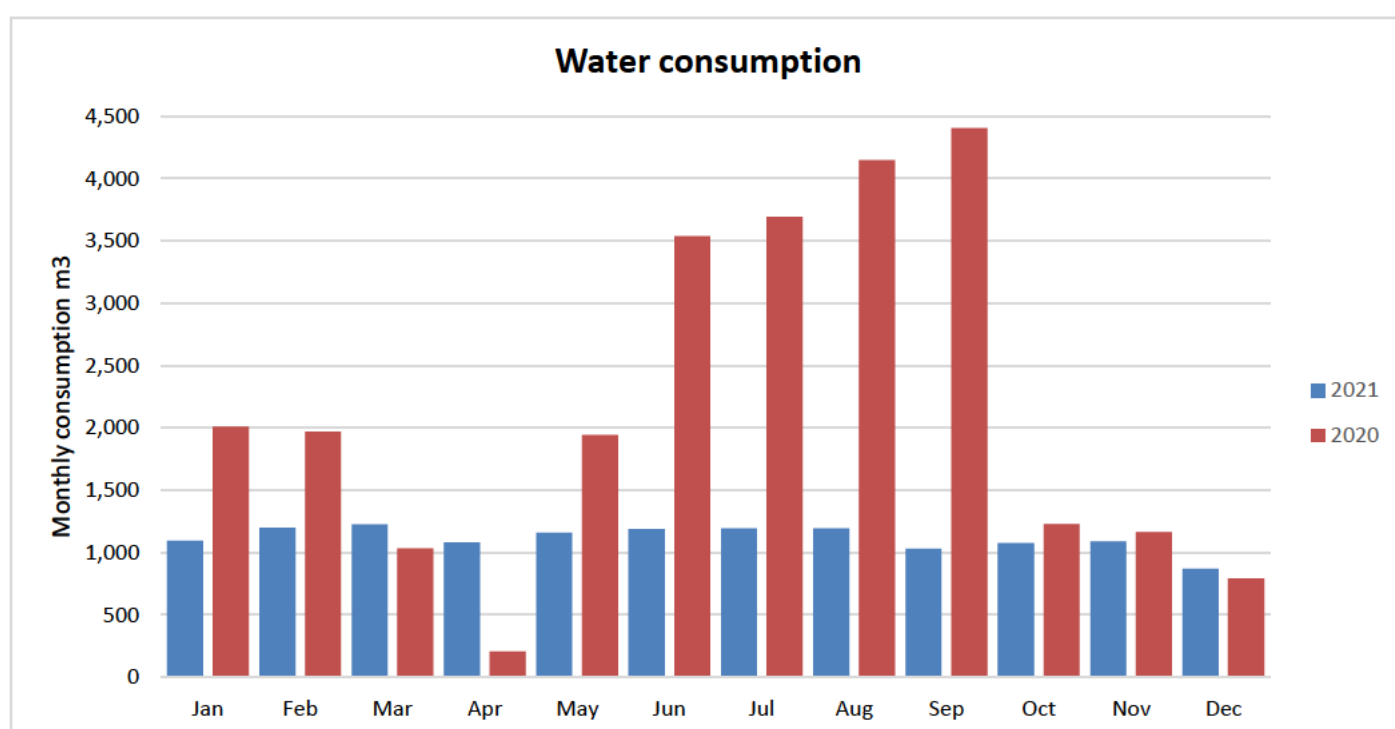


Figure 1 AluK - Water consumption comparison 2020 and 2021

5. Reporting of Energy Usage for the year 2021

5.1 Electricity

Electricity consumption during 2021 was 2,467,991 kWh. This was 116,803 kWh or 5 % more than 2020, Table 3. The main difference was the impact of Covid 19 in 2020 which saw the site shut down during some of March, all of April and some of May. During 2021, the main building lighting has started to be shut off out of operational hours on some days which has reduced consumption, Figure 2.

Table 3 AluK - Delivered Electricity consumption comparison 2020 and 2021

	2021 kWh	2020 kWh	Variance kWh	Variance %
Total	2,467,991	2,351,188	116,803	5.0

Despite the rise in consumption, carbon emissions fell by 4.3% as the emissions factors for grid electricity dropped, Table 4.

Table 4 AluK - Carbon footprint comparison for 2020 and 2021, electricity consumption.

	2021 Tonnes/CO2	2020 Tonnes/CO2	Variance Tonnes/CO2	Variance %
Total	575	601	-26	-4.3

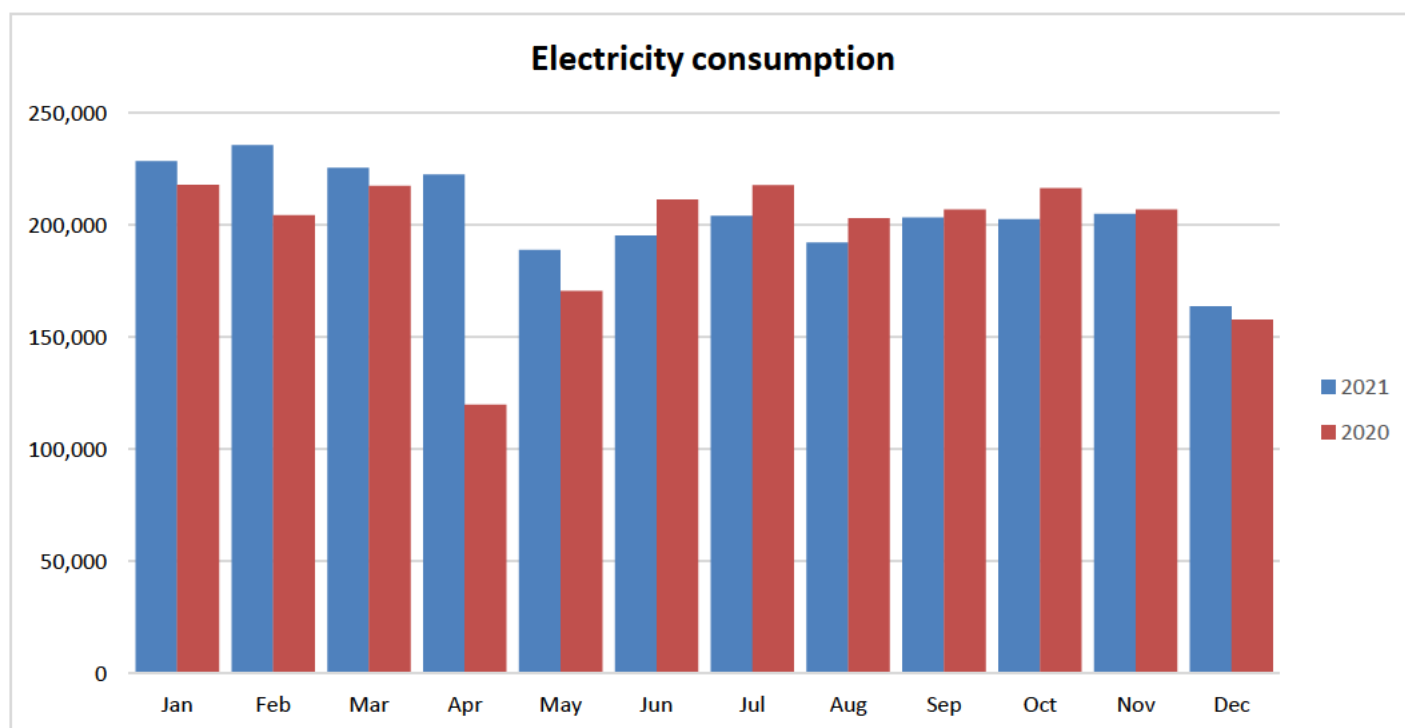


Figure 2 AluK – Electricity consumption comparison 2020 -2021

Gas consumption during 2021 was 3,052,798 kWh. This was 494,378 kWh or 19.3 % more than 2020, Table 5. The main difference was the impact of Covid 19 in 2020 which saw the site shut down during some of March, all of April and some of May. However, there did also seem to be increased consumption due to the FOX plant running more often, Figure 3.

Table 5 AluK - Gas consumption comparison for 2020 and 2021.

	2021 kWh	2020 kWh	Variance kWh	Variance %
Total	3,052,798	2,558,420	494,378	19.3

Carbon emissions also rose by 19.3% as the emissions factors for natural gas were almost unchanged, Table 6.

Table 6 AluK - Carbon footprint comparison for 2020 and 2021, gas consumption.

	2021 Tonnes/CO2	2020 Tonnes/CO2	Variance Tonnes/CO2	Variance %
Total	561	470	91	19.3

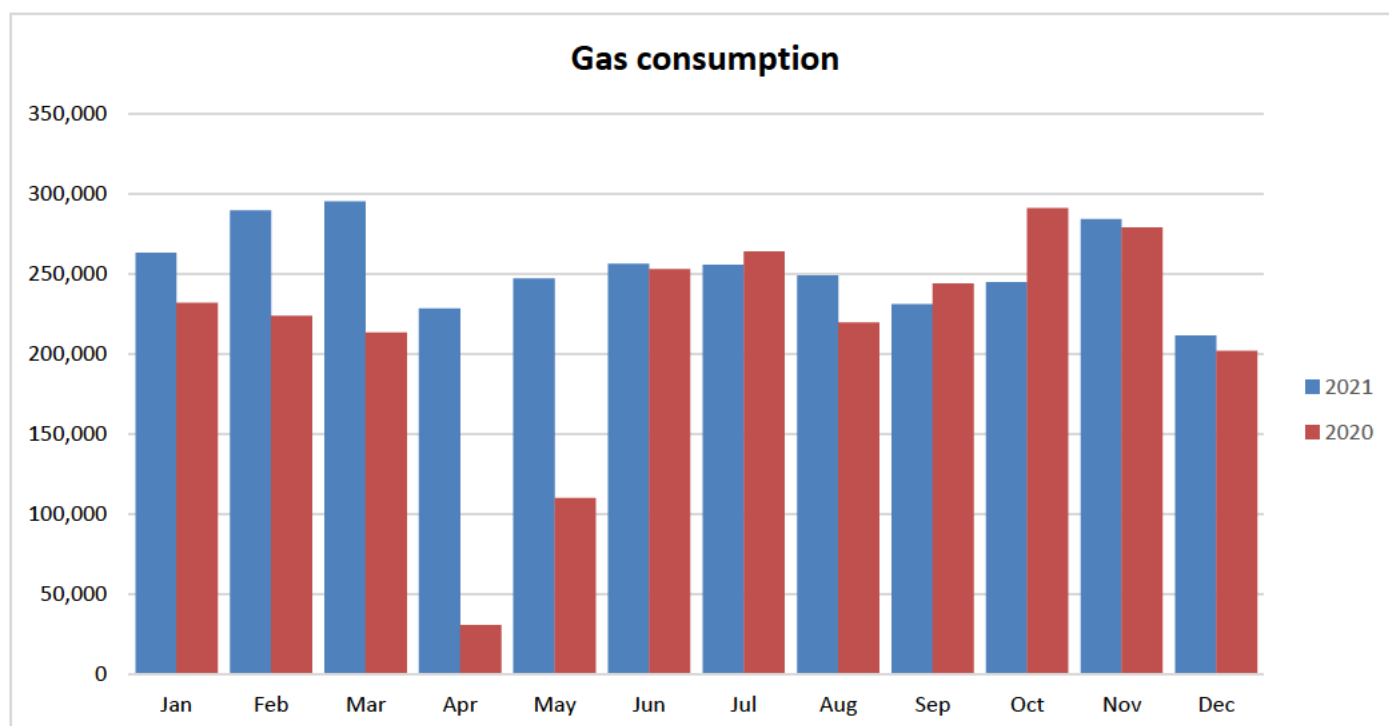


Figure 3 AluK - Gas consumption comparison for 2020 and 2021

6. Reporting of other performance indicators for the period 01/01/2021 to 31/12/2021

6.1 Finished Product

The finished product tonnage and unit data for 2021 present significant increase compared to 2020, Table 7 and Figure 4. The main difference was the impact of Covid 19 in 2020 which saw the site shut down during some of March, all of April and some of May.

Table 7 AluK - Finished Product Overview for 2019, 2020 and 2021

AluK - Finished Product		
Year	Finished Product (Tonnes)	Finished Product (Unit)
2019	3892.046	962,900
2020	3755.15	939,736
2021	4,302.26	1,098,872

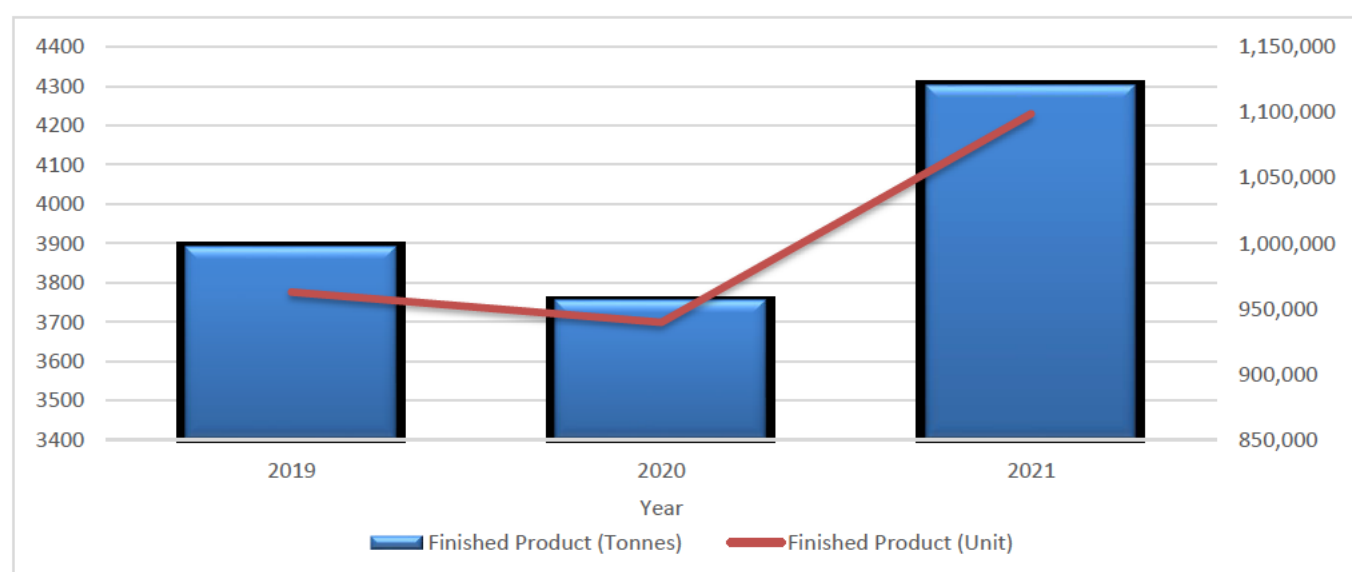


Figure 4 AluK - Finish Product Overview for 2019, 2020 and 2021

AluK waste produced for 2021 significant increase compared to 2020. The main difference was the impact of Covid 19 in 2020 which saw the site shut down during some of March, all of April and some of May, Table 8. During 2021 AluK has introduced better process control which resulted in decreased waste production comparing to 2019, Figure 5. AluK will continue to investigate recycling initiatives during 2022.

On 15th of January AluK was successfully audited and for ISO 9001:2015 and ISO 14001:2015.

Table 8 AluK - Waste Produced Overview for 2019, 2020 and 2021

AluK - Waste Produced	
Year	Waste Produced (Tonnes)
2019	494.49
2020	428.4
2021	488.66

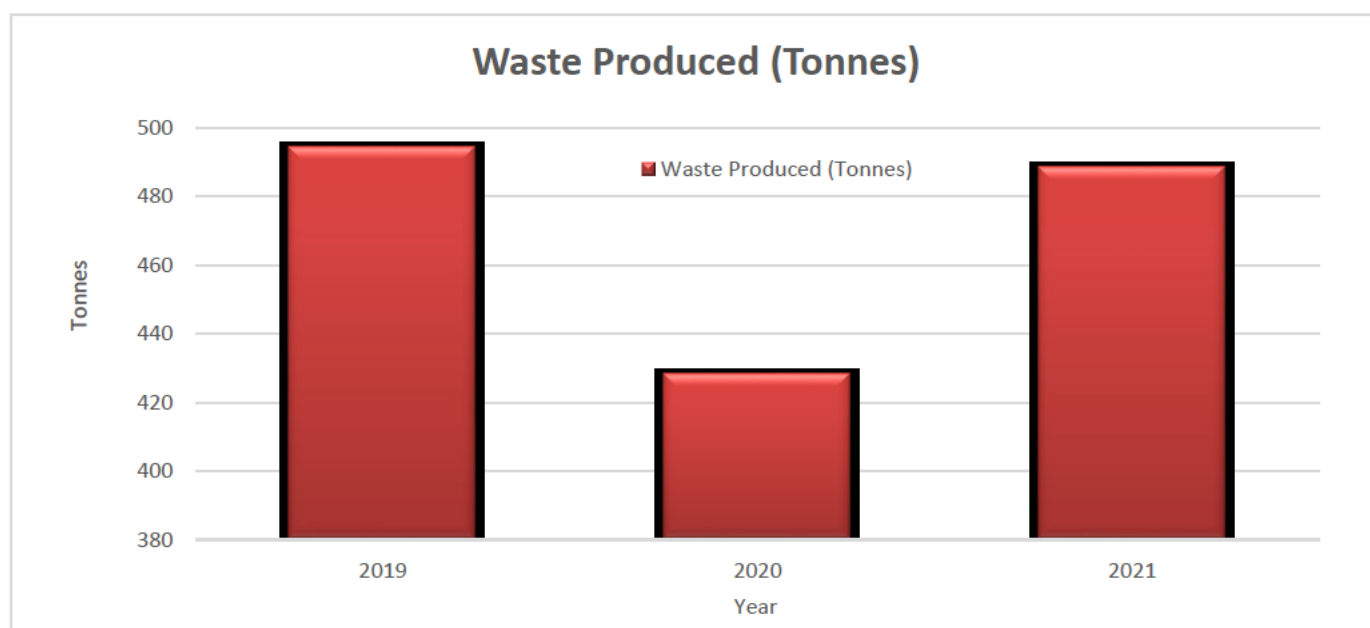


Figure 5 AluK - Waste Produced Overview for 2019, 2020 and 2021

6.2.1 Waste Product - Carbon Footprint Reduction

During reporting period of 1st January 2021 to 31st December 2021 Veolia collected 363.86 tonnes of waste 111.72t went to landfill, 61.39t was diverted and 190.75t was recycled. AluK saved 88t of CO₂e which is equivalent to 302.1 trees planted, 32.69 cars or 53.15 houses powered. Below Figure 6 presents Veolia's annual overview of the carbon footprint reduction for AluK waste product during 2021.

AluK will continue to investigate recycling initiatives during 2022.

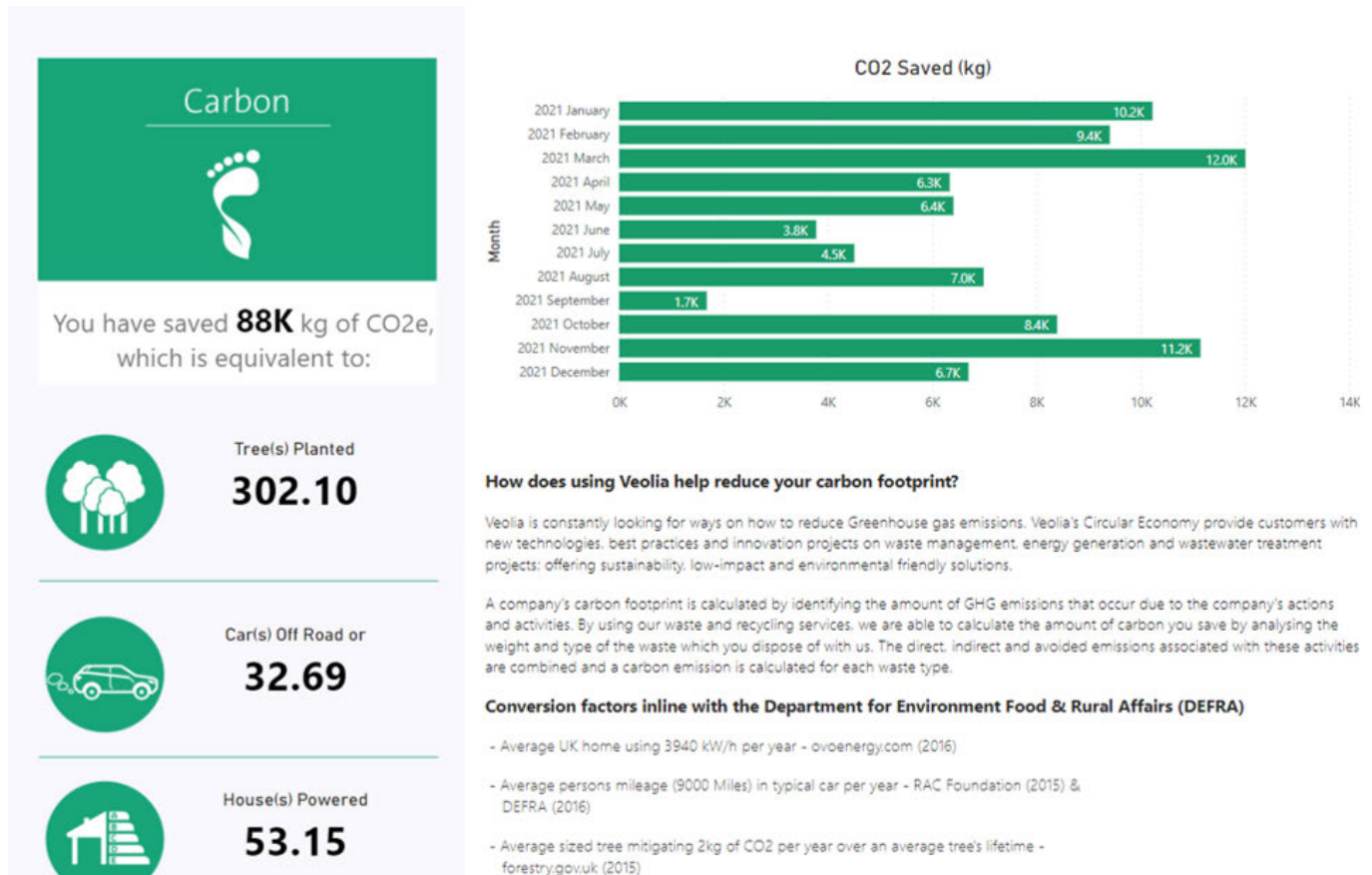


Figure 6 AluK's waste product - Veolia's carbon footprint reduction

7. AluK's environmental objectives for 2022

AluK has implementing QHSE policy to provide structure of the management and mitigation of our environmental aspects. AluK is constantly reviewing its environmental objectives and targets to set new working standards and strategies. AluK is going to focus during 2022 on three different environmental objectives:

- Carbon Reduction Plan
- Packaging project
- Powder paint re-purpose/recycle



7.1 Carbon Reduction Plan

AluK is determined to have a positive effect on the environment. That is why in December 202 AluK has launched the Carbon Reduction Plan, a project that will start by creating an annual carbon management cycle that includes calculating carbon footprint for the year and creating an annual action plan by setting long term reduction targets in line with the best scientific evidence.

7.3 Packaging Project

Part of AluK's quality process is assuring quality by taping and wrapping of the finished products. Internally, we can often need items from an already packaged set of profiles which results in the unwrapping and rewrapping of stock items. At present, a project team has been formed to allow us to review the need for internally wrapping product that is going into our stock items storage and whether this can be achieved at the final stage before delivery to customers to avoid the rewrapping of the same product. The project team will, also, be looking at AluK's need to tape and wrap products before delivery to customer to mitigate the need for plastic wrapping altogether.

7.4 Power paint re-purpose/recycle

At AluK we coat our profiles with powder paint that we have difficulty in providing a waste stream that isn't straight to landfill. Currently we are reviewing two possible waste streams to eliminate this. One involves shipping to Belgium to rejuvenate the paint so that it can be used in other processes where quality of the paint isn't important e.g. non-customer facing surfaces. To avoid an overall net increase in carbon usage which could arise from shipping to Belgium we are looking at a solution where concrete manufacturers can use this as a filler substance which will eliminate the landfill stream and provide an avenue to reuse the powder paint.