Non-Technical Summary

Environmental Permit Variation Application

Kellogg Company of Great Britain

Wrexham Breakfast Cereals

Bryn Lane

Wrexham Industrial Estate

BV8016ID

October 2024

1 INTRODUCTION

This Non-Technical Summary (NTS) provides an overview of what is being applied for, the regulated facility and outlines the key technical standards and control measures that will be implemented at the Site.

2 APPLICATION OVERVIEW

The existing installation comprises of the following activities listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations and the following directly associated activities.

AR1 - Section 6.8 A(1)(d)(ii) – Treating and processing materials intended for the production of food products from vegetable raw materials at plant with a finished product production capacity of more than 300 tonnes per day.

AR2 - Section 1.1 A(1)(a) – Burning any fuel in an appliance with a rated thermal input of 50 Megawatts or more.

AR3 - Section 5.4 A(1)(a)(i) – Disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by biological treatment.

AR4 - Surface water drainage.

What is being applied for?

- Kellogg's are applying to vary the Site's environmental permit to incorporate changes to emission points to air associated with proposed changes to existing production processes (see section 3 for more detail on these changes).

  No changes are proposed to the existing boiler plant, effluent treatment plant or surface water drainage.

- In 2017, the permit was varied to include an extrusion line (process 1). As part of this variation determination, the impact of the new line and the associated chocolate storage room was considered. However, the site plan in Schedule 7 was not amended as part of this variation. As per NRW email of 29 April 2024, Kellogg's propose a minor change to the boundary as part of this application. An updated site plan for Schedule 7 is included within this application, drawing W-BL-189.

- A reduction in the frequency of monitoring on the boiler plant emission points (A1-A3).

3 OVERVIEW OF DEVELOPMENT

Current Activities

The plant currently operates 24 hours, 7 days a week producing ready to eat cereal and snack bars. The raw materials used in the process are principally a wide range of grains which are then cooked, dried, formed and toasted prior to packing. Other ingredients such as sugars, fruit, chocolate and honey may also be added depending on the product type. The majority of the raw materials are stored in silos.

The existing five processing lines are NBU (extrusion line), bran / corn, RDX (decommissioned in 2014), 4th Process and Elevenses.

The production capacity of the existing plant is 154 million kilos per year. Per day, production capacity is limited to 408 tonnes per day as plant dynamics and staff levels mean that not all plants can run at maximum capacity at the same time.

The site is served by four boilers which are subject to regular maintenance and combustion efficiency tests. The boilers have a combined thermal input capacity of 48 MW. These are used to produce steam for use in production. When combined with the thermal rating of the ovens and dryers on site the overall capacity is 71 MW.

Effluent from the cleaning processes is treated at our onsite effluent treatment plant, prior to discharge to the foul sewer under a Trade Effluent Consent from Welsh Water.

Surface water and roof water drainage on site is managed via two balancing ponds prior to discharge to the Is y Coed Brook.

Proposed Changes

We are proposing to make changes to and rename our existing manufacturing lines as detailed below.

Existing	**Future**
NBU	Process 1 – extrusion line
Bran / Corn	Process 2 – complex flakes
RDX	Process 3 – rice line
4th Process	Process 4 – corn line
Elevenses	Process 5 – coating line

The proposed changes will have minimal impact on the environmental permit but will result in a change to some equipment on the roof. The impact of these changes on emissions to air and noise have been considered as part of the permit application. The main impact of the changes is on processes 3 and 5.

The work will be completed by the end of 2026.

Once the changes are complete the overall capacity of the site will remain at 154 million kilos per year but, due to an increase in staffing levels after completion of the project, all 5 lines can run at the same time so the daily maximum throughput will increase to 553 tonnes per day.

Flow diagrams of the existing and future process lines are presented in Appendix A.

Process 1

This line is currently used to manufacture coated and non-coated products. Once the changes have been carried out, Kellogg's will no longer be coating products on this line and therefore the equipment associated with the coating process will no longer be required.

The production of the coated products on Process 1 will cease in Q1 2025.

Two of the existing emission points (A26 and A27) currently discharge emissions from the coating dryer. These emission points serve other process lines however so will need to remain in the permit.

The capacity of the line will remain unchanged at approx. 32 Mkg/yr.

Equipment To Be Removed	**Equipment To Be Added**
Surge Bin Coating dryer (and associated conveyors) Coating drums Syrup system for coating Coating Vitamins System Colouring System Colour Mixing Tank	New Flavour Tanks New Finish Food Conveyor

Process 2

Whilst the products manufactured on this line will change, the manufacturing process will largely remain as existing. The ingredients are mixed, cooked, dried, flaked and toasted. Some of the products are then coated or have additions before they are packed.

Process 2 will be used to manufacture a number of different complex flakes, the route on the line will depend on which product is being produced at the time.

There will be no new emission points associated with Process 2.

The capacity of the line will increase slightly due to the change in product and additions at the end of the process to approx. 36Mkg/yr.

Equipment To Be Removed	**Equipment To Be Added**
All equipment specific to All Bran which will now be manufactured on Process 1. Emission points A5-A8 (EP48,50,51,52) in the Environmental Permit will no longer be used. Emission points 70, 71 referred to in drawing W-BL-303 will also no longer be used.	RDX Scales RDX Pellet Dryer 4th Pellet Mills (staying in same location) RDX Coating Conveyors

Process 3

This will be located where the RDX (decommissioned in 2014) equipment is currently sited. Some of the equipment will be reused on Process 2 or 3, but the majority will be removed to allow for the new line.

Process 3 will produce rice products and will include a coating line.

Existing packing lines 5 & 6 will be removed and replaced with two new packing lines to serve Process 3.

There will be seven new emission points associated with Process 3 (EP126 – 132), four from dry dust abatement systems and three from wet systems. See Section 4 for further information on the new emissions.

It is anticipated that production on this line will commence Q2 2026.

The capacity of this line will be approximately 38Mkg/yr.

Equipment To Be Removed	**Equipment To Be Added**
RDX Dryer and Service Platforms	Cookers
RDX Pellet Mills & Flaking Mills	Tempering
RDX Cookers	Post Toasting Cooling
RDX Buhler System	Coating Drums
RDX Electrical Equipment	1.9 MW Coating Dryer
Packing lines	Liquids Addition
	Big bag Unloading
	Packing Lines

Process 4

Whilst the products manufactured on this line will change, the manufacturing process will largely remain as existing. The ingredients are mixed, cooked, dried, flaked, toasted and some are coated or have vitamins added, before being packed. Some of the base flake produced on Process 4 will then be transported, via conveyors, to Process 5 where it will be coated.

Due to the change in products on this line two new sieve systems will be installed – one for the raw material and the other for cooked product.

A new rotoclone wet scrubber system will be installed, A135, to manage the increased in dust in this process. See Section 4 for further information on the new emissions.

It is anticipated that new products will start to be produced on Process 4 in Q4 2025, with full transition by Q2 2026.

The capacity of the line is reduced slightly to approx. 39 Mkg/yr as a result of the proposed change in products and removal of additions from this line.

Equipment To Be Removed	Equipment To Be Added
Cooling flight Grading System Spiral Conveyors (after oven) Oven outfeed conveyors Flavour station	Three of the cookers from the RDX line will be relocated to Process 4 Interconnection piping (including new blowers cyclone receivers and piping) Raw corn grit sieve Cooked corn sieve Proportional and belt conveyors Rotoclone dust extraction system

Process 5

The area of the existing Elevenses plant will be used as a coating line for the base flake produced on Process 4. Production on the existing line will cease at the end of 2024. The removal of the existing equipment will commence in Q1 2025. Emission points A17 to A22 will no longer be required.

Due to the presence of allergens in this area it will be separated from the rest of the factory and have its own facilities including changing rooms, allergen storage area, extraction, packing line, warehouse and waste storage.

This area will be fully refurbished and new wet dust extraction and air handling units installed. This will result in the addition of one new emission point to air, A125. A rotoclone unit will be located on the roof which will serve both Process 5 process and packing. See Section 4 for further information on the new emissions.

There will also be a number of new air handling units (AHUs) installed on the roof for the circulation of air. There is no heating or cooling associated with these, they are designed to maintain fresh air in the factory. These units have not been included as emission points, but the noise impacts have been considered as part of the Noise Risk Assessment.

The capacity of Process 5 will be approx 19 Mkg/yr. NB 50% of this mass is included in Process 4 capacity as that provides the base flake to Process 5.

Equipment To Be Removed	Equipment To Be Added
All existing equipment related to the production and packing of Elevenses Bars will be removed. As a result Emission points A17 - 22 (EP76 - 81) in the Environmental Permit will no longer be used.	Conveyor system to transfer base flake from Process 4 Syrup System Coating Drum 1.9 MW coating dryer Peanut system Rotoclone serving process and packing. Packing line Palletiser

Syrup System

The existing syrup system on site will be used for process 4.

A second syrup system will be installed as part of these changes to serve processes 2, 3 & 5. This will be adjacent to the existing syrup centre.

Sugar will be piped to the syrup centre, where it will be dissolved. The resulting syrup is then stored in a holding tank before being piped to Process 2, 3 or 5.

There will be a new emission point associated with the new syrup system, A134. See Section 4 for further information on the new emissions.

Emission point A133 is linked to the existing syrup centre, whilst the emission point was on the plan the number and description were missing on previous versions.

Equipment To Be Removed	**Equipment To Be Added**
Belt drying room (will be relocated) Sugar big-bag unloading	Pipework for intake from existing silo Sugar dissolving unit Syrup holding tank

Combustion Activity

The existing combustion plant listed in Schedule 1 of the permit includes the boilers and a number of product dryers. There will be no changes to the site's boilers (or electricity supply, water supply or compressed air system) as part of these changes. There will be minor changes to some of the product dryers Kellogg's operate on site however.

The proposed changes will result in a slight reduction in the aggregated thermal input capacity of combustion plant on site. This is summarised in the table below.

Current Combustion Plant	**Future Combustion Plant**	**Comments**
2 x 7.2 MW Gas Steam Boiler	Gas Steam Boilers 1 & 2 – 2 x 7.2 MW	Rename
1 x 14.7 MW Gas Steam Boiler	Gas Steam Boiler 3 - 14.7 MW	Rename
1 x 16.6 MW Gas Steam Boiler	Gas Steam Boiler 4 - 16.6 MW	Rename
1 x 1.5 MW RDX Cooked Product Dryer	-	Remove from permit
1 x 6.34 MW All Bran Plant	-	Remove from permit
1x 4.8 MW Bran Flakes Plant	Process 2 Jet Zone – 4.8 MW	Rename
1 x 5.4 MW RDX Plant	Process 3 Jet Zone – 5.4 MW	Rename
1 x 6.56 MW Fourth Process Plant	Process 4 Jet Zone – 4.8 MW Process 4 Coating Dryer – 1.76 MW	Suggest split this and rename – the MW quoted in current permit is a combination of jet zone and coating dryer
1 x 0.3 MW Base Dryer	Process 1 Base Dryer – 0.3 MW	Rename

1 x 0.265 MW Coating Dryer	-	Remove from permit
	Process 5 Coating Dryer – 1.9 MW	Add to permit
	Process 3 Coating Dryer – 1.9 MW	Add to permit

The aggregated thermal input capacity after the proposed changes will be 66.56 MW, compared to 70.9 MW currently.

Waste Treatment Activity

No significant alterations are proposed to the waste water treatment plant (WWTP). Emissions to sewer will be within currently permitted and assessed limits.

The quality of the existing effluent discharged is significantly below that allowed by the trade effluent consent. With the introduction of new coated products it is predicted that the concentration of the influent to the effluent treatment plant will be higher than existing. However, the existing WWTP has the capacity to deal with this.

	Trade Effluent Consent Limits	**Average Result for 2024**
COD	2500 mg/m^3	68 mg/m^3
SS	600 mg/m^3	33 mg/m^3
Flow	1200 m^3 in 24 hours	468 m^3

Site Drainage Systems

There will be no changes to the existing site drainage systems as a result of the proposed changes.

4 EMISSION POINTS

The changes on site will result in the removal of a number of existing emission points as well as the addition of new ones.

Drawing W-BL303 has been updated to reflect the proposed changes. The descriptions on the drawing have been updated to make it simpler to see which process the emissions are from. The changes to the existing emission points included in the permit are summarised in Appendix B.

New Emission Points (A125 – A135)

There will be 11 new emission points associated with the changes. These are summarised in the table below.

Reference on DWG W-BL-303r20	Source
125 (A35)	Process 5 – Wet dust collection system serving process & packing
126 (A36)	Process 3 – Wet dust collection system serving cookers
127 (A37)	Process 3 – Wet dust collection system serving coating dryer
128 (A38)	Process 3 – Wet dust collection system serving transfer lines
129 (A39)	Process 3 – Dry dust collector serving big bag area
130 (A40)	Process 3 – Dry dust collector serving flour transport
131 (A41)	Process 3 – Dry dust collector serving salt and flour receivers
132 (A42)	Process 3 – Cyclone serving toaster cooler
133 (A43)	Syrup Centre No 1
134 (A44)	Syrup Centre No 2
135 (A45)	Process 4 – Wet Dust collection system coated products

An air emissions risk assessment has been carried out (Section 8 of the application) to model the impact of the changes. This assessment concluded that the combined particulate contribution from the existing and new emission points does not lead to any exceedance of the standards (long or short term).

Boiler Emissions (A1 – A4)

The Site's existing permit requires the four boiler emission points (A1-4) to be monitored twice a year for NOx.

All four boilers are each less than 20 MWth. Gov.uk guidance[1] states that for existing MCP of less than 20MWth the minimum frequency for monitoring should be once every 3 years.

A4 is the main boiler and operates all year round (with the exception of 4- 6 weeks downtime for maintenance). The other boilers provide back up as required for the downtime or when additional steam is required for the process. Previously boilers A1-A3 have had to be switched on to allow emissions monitoring to be carried out.

Boiler 4 will remain the main source of steam after the implementation of the proposed changes, with other boilers only operational for boiler 4 downtime or when additional steam is required for the process.

Given the MCP requirements, we wish to formally request the permit is updated to reduce the frequency of monitoring for A1-A3 to once every 3 years.

[1] https://www.gov.uk/guidance/medium-combustion-plant-mcp-comply-with-emission-limit-values#monitoring-requirements, accessed October 2024.

5 RAW MATERIALS

The raw materials used at the installation will remain largely unchanged after the changes.

The main exception to this is the introduction of peanuts for Process 5 coating line. Peanuts will be delivered in bulk bags and delivered directly to Process 5 to avoid potential contamination of the products on the other lines.

Additional liquid malt raw materials will be required for the flavour system. These will be delivered in IBCs and stored inside the factory. As such, any spill would be contained within the factory where there are no surface water drains.

6 NOISE MANAGEMENT

The proposal will result in the removal and installation of new equipment on the roof. The new equipment has been assessed and is in line with Best Available Techniques (BAT).

There will be 13 new pieces of equipment installed on the roof, these are summarised below.

Reference on DWG W-BL-303r19	Description
125 (N-125)	Process 5 – Wet dust collection system serving process & packing
126 (N-126)	Process 3 – Wet dust collection system serving cookers
127 (N-127)	Process 3 – Wet dust collection system serving coating dryer
128 (N-128)	Process 3 – Wet dust collection system serving transfer lines
129 (N-129)	Process 3 – Dry dust collector serving big bag area
130 (N-130)	Process 3 – Dry dust collector serving flour transport
131 (N-131)	Process 3 – Dry dust collector serving salt and flour receivers
132 (N-132)	Process 3 – Cyclone serving toaster cooler
N-01	Process 5 – New AHU Process
N-02	Process 5 – New AHU Packing
N-03	Process 5 – New AHU Locker area
N-04	Process 5 – New AHU Coating Dryer
N-05	Process 3 – New AHU Coating Dryer

A noise assessment has been carried out to assess the impact of the changes (Section 9 of the Application). This assessment concludes that while the proposed changes may result in rating levels above the 2023 baseline background sound levels, they are not anticipated to worsen the existing noise impact. This is because the predicted noise levels at all receptors are either equal to or lower than the current noise levels. Therefore, it is considered unlikely that the proposed variation will cause a noise impact on the nearest noise sensitive receptors.

7 ENVIRONMENTAL MANAGEMENT SYSTEM

Kellogg's is committed to managing and continually improving environmental performance and have an existing EMS which covers all existing site operations and change management. The EMS will be updated to reflect the proposed changes on site.

The management system ensures that:

- risks that the activities pose on the environment are identified and minimised;
- activities are carried out in line with the relevant procedures;
- performance against the EMS is assessed at regular intervals;
- the environmental permit is complied with;
- training is provided so that everyone on site understands the impact on their role on the environment
- the environmental impact of proposed changes on site including construction and decommissioning are considered.

8 NATURAL RESOURCE CONSERVATION (NRC)

Whilst our energy and water usage and waste production will increase, compared to recent years, once the changes come into full affect the usage per tonne of product will significantly reduce.

The existing control measures in place to monitor our gas, electricity and water usage and waste production will continue once the changes have taken place. These include:

- Daily, weekly, monthly and annual review of usage both as absolute figure and per tonne of product;
- Site annual targets in relation to ongoing reduction of our energy and water usage and waste production;
- Regional reduction targets for NRC for 2030 and 2050;
- Regular internal audits to assess potential for improvements in terms of efficiency;
- Review of new equipment to ensure it is efficient and will not significantly impact our NRC Targets.

9 TECHNICAL STANDARDS AND KEY CONTROL MEASURES

Technical Standards

Key technical standards laid out in the following documents govern the design and operation of the plant:

- BAT Reference Document for Food, Drink and Milk Industries (December 2019);
- How to comply with your environmental permit. Additional guidance for The Food and Drink Sector (October 2014);
- Monitoring stack emissions: environmental permits (March 2024).

Key Control Measures

Key control measures that will be applied at the Site are as follows:

- The existing Accident Management System for the Site will be reviewed and updated to incorporate the new processes prior to them being brought online [Note 1];
- The site's existing Noise Management Plan will be reviewed and updated to incorporate the change in equipment prior to them being brought online [Note 2];
- The design of the plant applies BAT to maximise energy efficiency;
- New refrigeration units are in line with BAT;
- New liquid raw materials will be provided appropriate containment;
- Point source emissions will be abated in line with BAT;
- A preventative maintenance schedule is implemented;
- The existing Environmental Management System will be updated to reflect the new processes before they are brought online.

Note 1 – There are a number of control measures already in place on site to minimise the impact of an environmental accident on site – eg liquids stored in bunded areas, drains in the delivery areas go to the effluent plant not surface water, maintenance, regular site audits. These same control measures will be adopted once the changes have been carried out so the changes are likely to be minimal.

The main potential impact will be related to the new allergen area on site, however, the risk is more related to safety aspects than environmental.

Note 2 – There are a number of control measures already in place on site to minimise the impact of site activities in relation to noise – eg maintenance, speed limit, restrictions on deliveries, regular site audits, training, noise abatement. These same control measures will be followed once the changes have been carried out.

There will be no new "source types" so it is not anticipated that any significant change to the noise management plan will be required to incorporate the changes.

10 ANNOTATED PERMIT

The existing permit has been annotated to show the changes anticipated as part of the modifications to site. This can be found in Section 11 of the Permit Application.

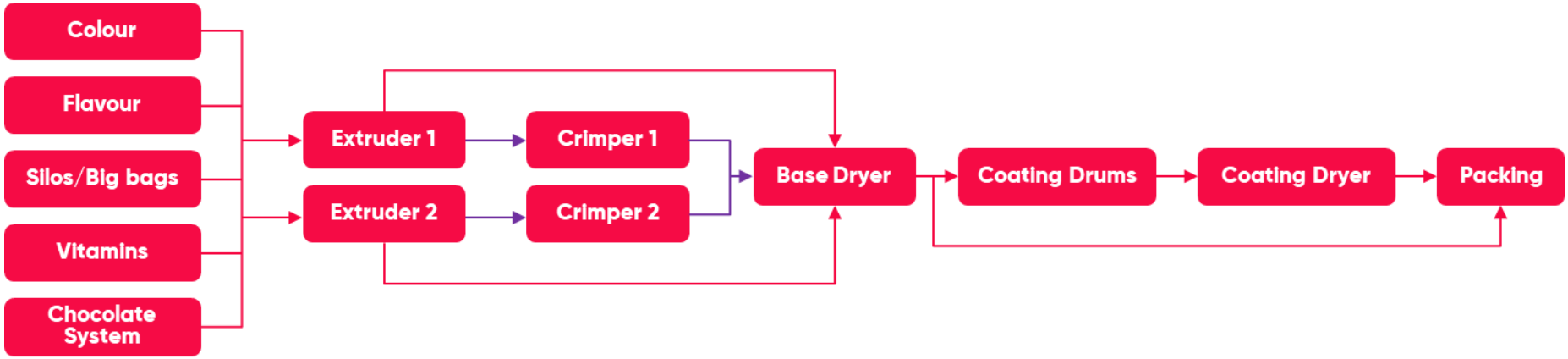
Appendix A

Process Flow Diagrams (current and existing)

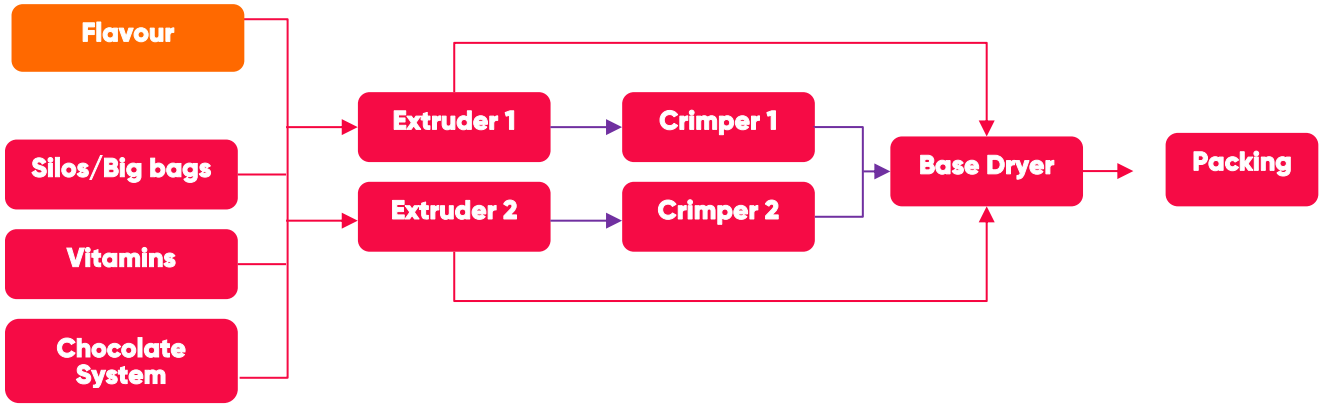
Relevant for all products

Represent product specific options

Current Extrusion



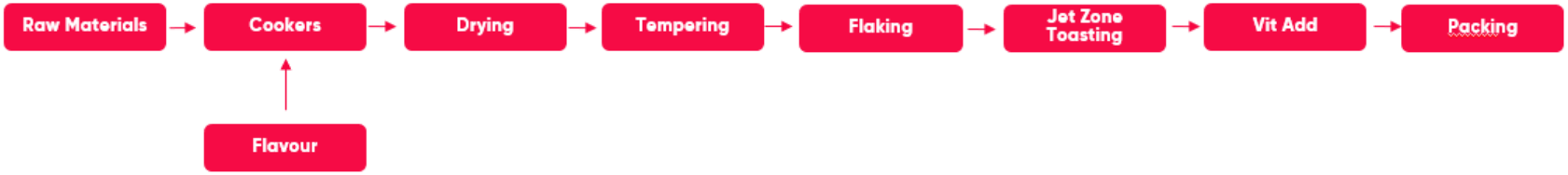
Future Process 1



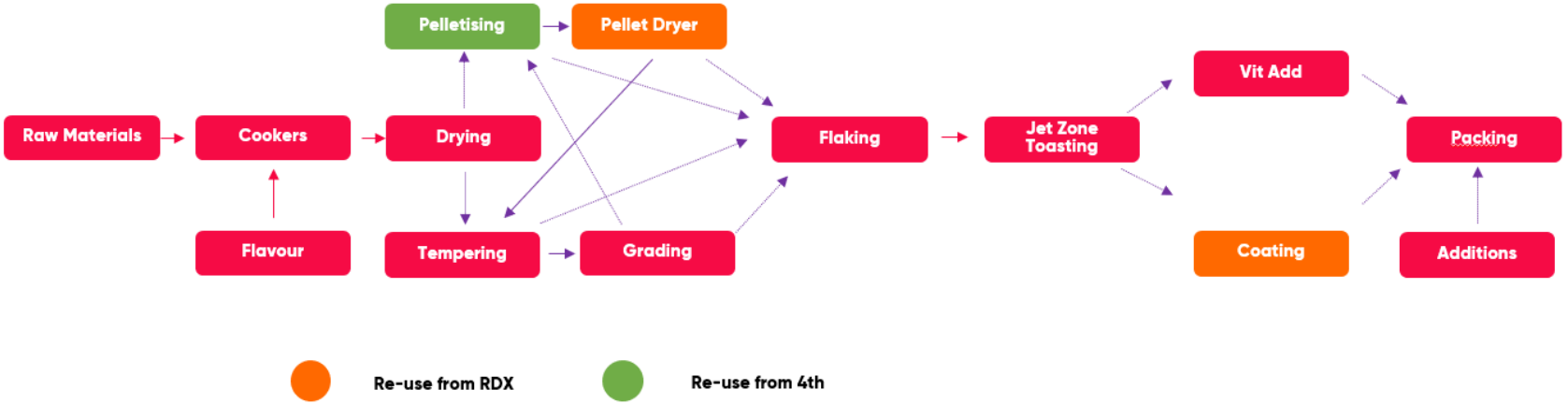
Some New

Existing

Current Process 2



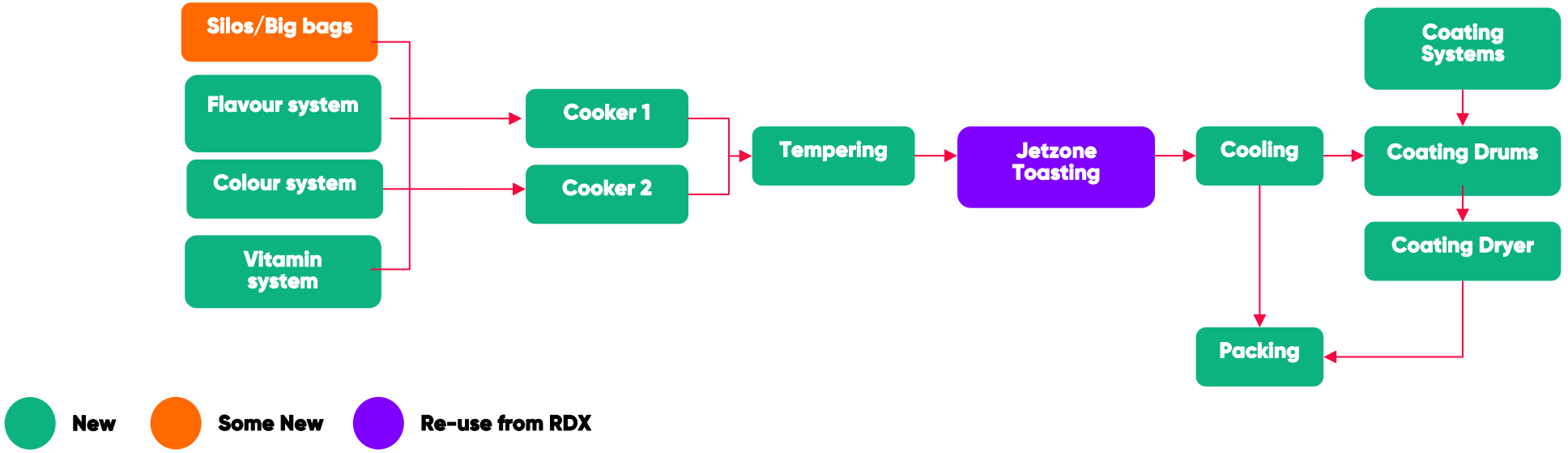
Future Process 2



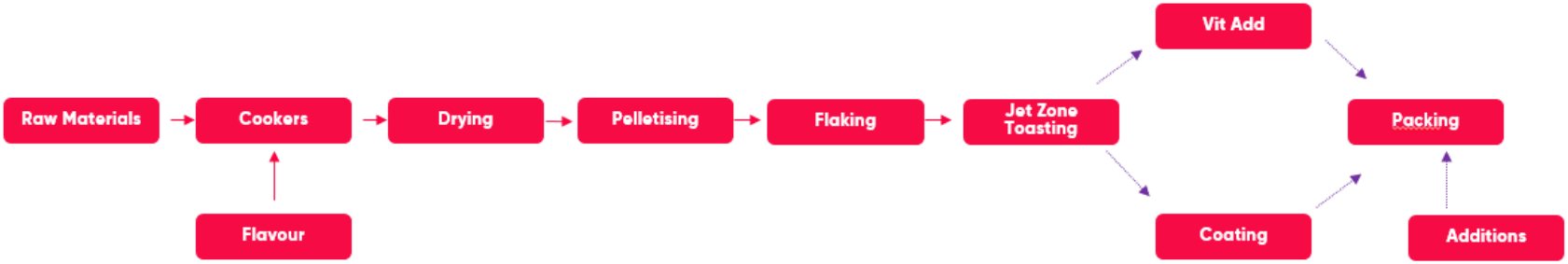
Current RDX

RDX line was decommissioned in 2014. The majority of the equipment will be removed but some will be re-used.

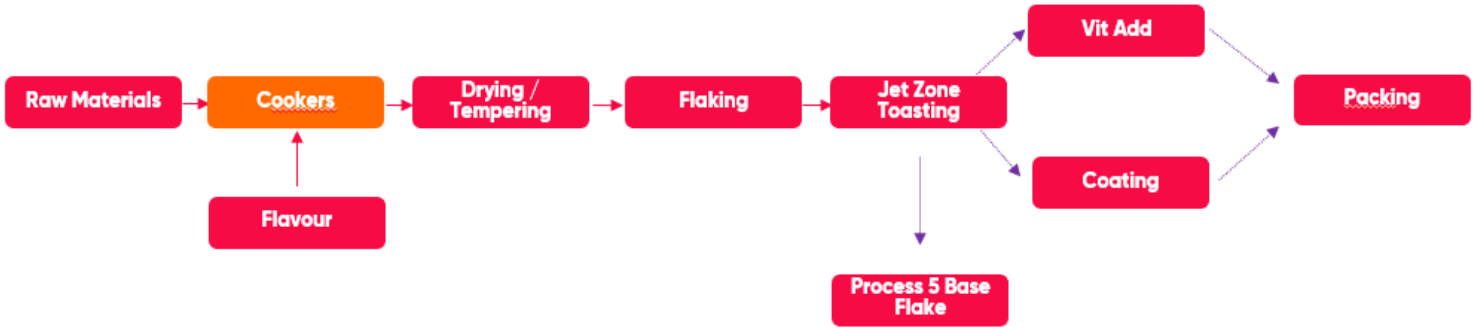
Future Process 3



Current 4th Process



Future Process 4

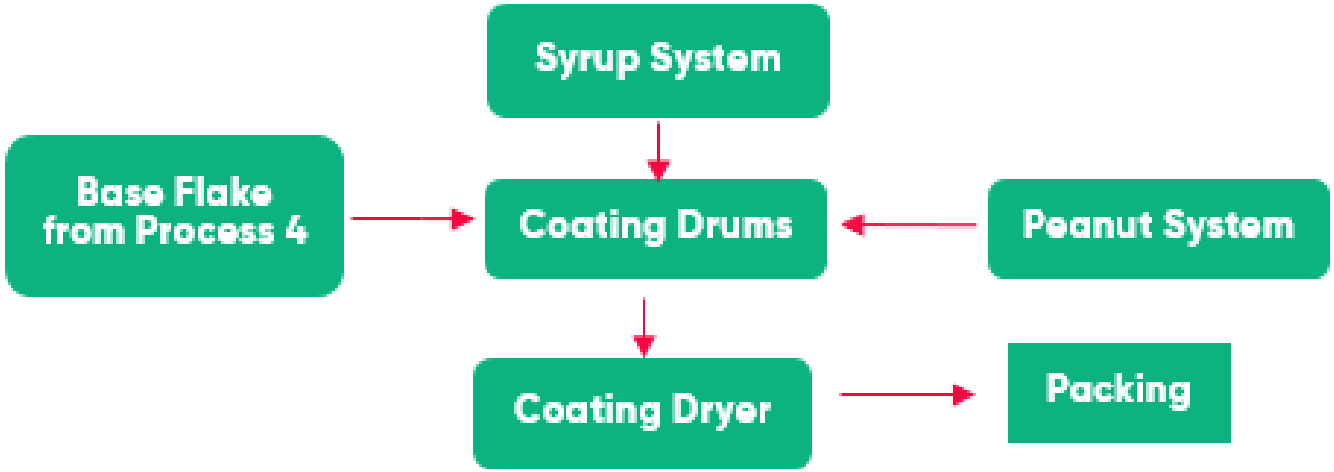


Existing and additional 3 from RDX

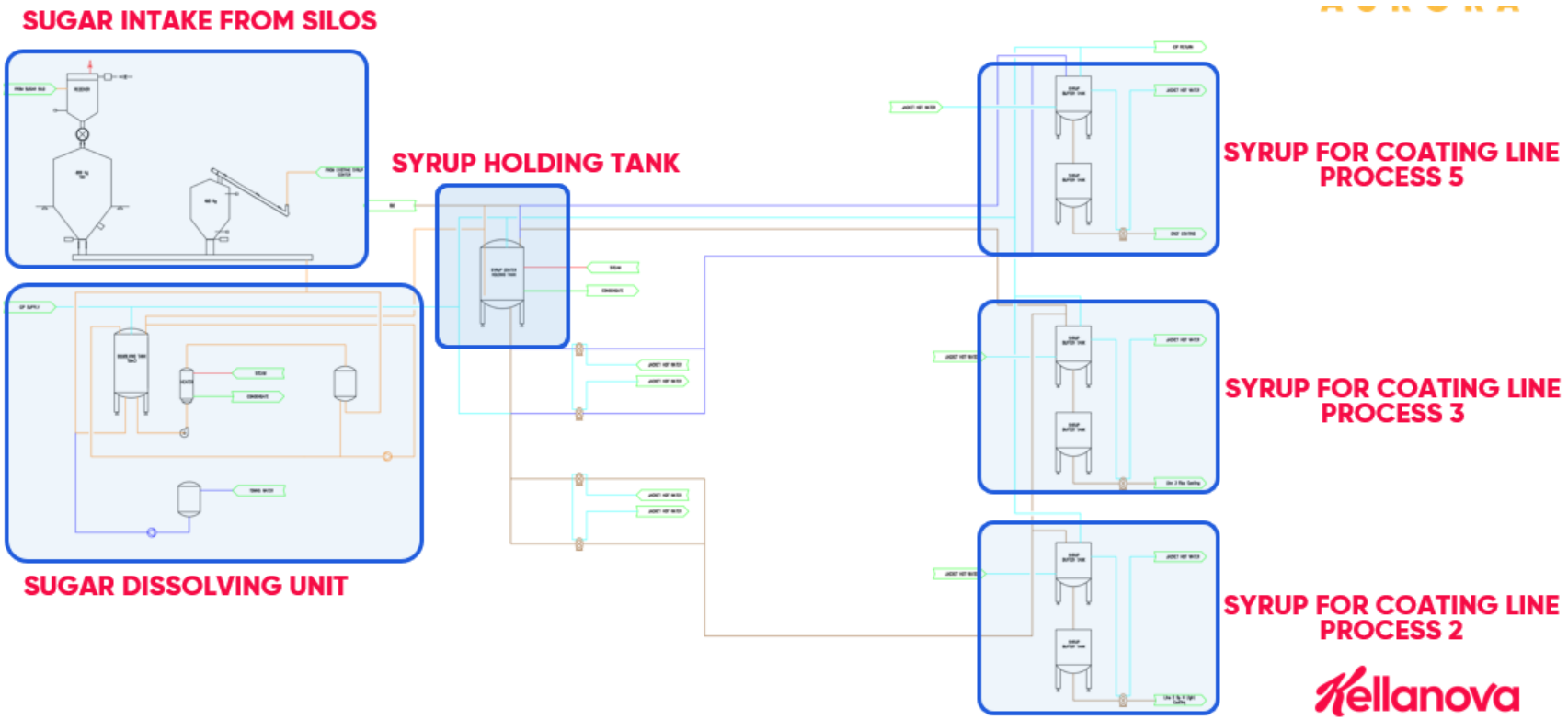
Current Elevenses

Production of the Elevenses Bars will cease at the end of Q1 2025. All of the existing equipment will be removed.

Future Process 5



New Syrup Centre



Appendix B

Emissions to Air

Existing Permit Emission Points

Emission Point	Source	Suggested New Description	Current Monitoring Requirement	Current ELV
A1 (106)	Boiler 1	West Stack – Boiler 1	Every 6 months NOx **Request to change to every 3 years**	-
A2 (106)	Boiler 2	West Stack – Boiler 2	Every 6 months NOx **Request to change to every 3 years**	-
A3 (106)	Boiler 3	West Stack – Boiler 3	Every 6 months NOx **Request to change to every 3 years**	-
A4 (107)	Boiler 4	East Stack – boiler 4	Every 6 months NOx	-
A5 (48)	**Product conveying**	**Remove**	**-**	**-**
A6 (50)	**All Bran dryer bleed fume extraction**	**Remove**	**-**	**-**
A7 (51)	**All Bran dryer bleed fume extraction**	**Remove**	**-**	**-**
A8 (52)	**All Bran dryer bleed fume extraction**	**Remove**	**-**	**-**
A9 (55)	Bran Flakes Oven Bleed Fume Extraction	Process 2 – Jet Zone Extraction	-	-
A10 (56)	Bran Flakes Oven Bleed Fume Extraction	Process 2 – Jet Zone Bleed	-	-
A11 (57)	RDX Oven Extraction	Process 3 – Jet Zone Extraction	-	-
A12 (58)	RDX Oven Bleed Fume Dust Extraction	Process 3 – Jet Zone Bleed	-	-
A13 (60)	RDX Oven Bleed Fume Extraction	Process 3 – Jet Zone Bleed	-	-
A14 (92)	4th Oven Bleed Fume Extraction	Process 4 – Cooling flight exhaust	-	-
A15 (93)	4th Oven Bleed Fume Extraction	Process 4 – Jet Zone Bleeds Oven 1	-	-
A16 (94)	4th Oven Bleed Fume Extraction	Process 4 – Jet Zone Bleed Oven 2	-	-
A17 (76)	**Granola Oven Cooling Extract**	**Remove**	**-**	**-**
A18 (77)	**Granola Oven 5**	**Remove**	**Every 6 months SOx**	**-**
A19 (78)	**Granola Oven 4**	**Remove**	**Every 6 months SOx**	**-**

Emission Point	Source	Suggested New Description	Current Monitoring Requirement	Current ELV
A20 (79)	**Granola Oven 3**	**Remove**	**Every 6 months SOx**	-
A21 (80)	**Granola Oven 2**	**Remove**	**Every 6 months SOx**	-
A22 (81)	**Granola Oven 1**	**Remove**	**Every 6 months SOx**	-
A23 (111)	Wet de duster	Process 4 – Rotoclone coating & cooling	-	-
A24 (118)	AB Hot Air Lift and BF Apron Feeder	Process 2 – Apron Feeder	-	-
A25 (119)	**RDX Cooked product dryer bleed**	**Remove**	**-**	**-**
A26 (120)	Dry dust collection extruders, coating & conveyors	Process 1 – dry dust collector extruders & conveyors	Annually	Particulates 50 mg/m^3
A27 (121)	Wet Dust collector Serving Coater Dryer and Cooling	Process 1 – wet dust collection system cooling dryers	Annually	Particulates 50 mg/m^3
A28 (122)	Wet Dust collector serving extruder and base dryer	Process 1 – wet dust collection system base dryer & conveyors	Annually	Particulates 50 mg/m^3
A29 (73)	LEV Dust extraction serving packaging area	Process 1 – Packing Lines	Annually	Particulates 50 mg/m^3
A30 (123)	Bran / Corn Dryer wet dust collector	Process 2 – Dryer Heat Extraction	Annually	Particulates 50 mg/m^3
A31 (124)	Dry dust collection on the 7 Sisters arrangement	Seven Sisters Animal Feed Extraction System	Annually	Particulates 50 mg/m^3
A32 (25)	Grain Milling – malt dust filter	Flavour Plant – Malt Dust Filter	Annually	Particulates 50 mg/m^3
A33 (26)	Grain Milling – corn alpine mill	Flavour Plant – corn alpine mill	Annually	Particulates 50 mg/m^3
A34 (27)	Grain Milling – malt kelk mill	Flavour Plant – malt kelk mill	Annually	Particulates 50 mg/m^3