CLIMATE NEUTRALITY PLAN

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Language version:	English
Reference filename:	CNP Template_COM_en_210224.xls

Information about this file:

Installation name:	Kubikenborg Aluminium AB
Unique Installation Identifier:	SE000000000205316
Reference date of the CNP:	2024-05-30

If your competent authority requires you to hand in a signed paper copy of the climate-neutrality plan, please use the space below for signature:

Date

Name and Signature of legally responsible person

GUIDELINES AND CONDITIONS

General Information on this Template

1 Directive 2003/87/EC, as amended most recently by Directive 2023/959/EU (hereinafter "the EU ETS Directive") requires Member States to allocate allowances for free to installations based on Community-wide and fully-harmonised rules (Article 10a(1)). The Directive can be downloaded from: https://eur-lex.europa.eu/eli/dir/2003/87/2023-06-05

2 These Free Allocation Rules (hereinafter "the FAR") are contained in the Commission Delegated Regulation (EU) 2019/331. The FAR can be downloaded from: http://data.europa.eu/eli/reg_del/2019/331/oj

3 Article 10a(5) of the EU ETS Directive, together with Article 22b of the FAR, stipulates that the level of free allocation shall be reduced by 20 % if operators of installations whose greenhouse gas emission levels are higher than the 80th percentile of emission levels for the relevant product benchmarks (in 2016/2017) have not established a climate-neutrality plan (CNP) by May 2024 in accordance with Article 10b(4).

4 Furthermore, Article 10b(4) grants an additional 30% of free allocation to district heating in certain Member States, provided they also establish a CNP and that an investment volume equivalent to the value of that additional free allocation is invested to significantly reduce emissions before 2030

5 Pursuant to Article 10b(4), of the EU ETS Directive the Commission adopted the Implementing Regulation (EU) 2023/2441 (hereinafter "the CNP Regulation"), which specifies the minimum content and format of the CNP. The Regulation can be downloaded from: https://eur-lex.europa.eu/eli/reg_impl/2023/2441/oj

6 This is a template for the CNP and has been developed on behalf of the Commission by its consultants (Umweltbundesamt GmbH Austria). The views expressed in this file represent the views of the authors and not necessarily those of the European Commission.

7 **This is the final version of the CNP template, version of 21 February 2024.**

How to use this file

7 Automatic calculation (to be found in the menu Formula/Calculation options) must be turned on.
It is recommended that you go through the file from start to end. There are a few functions which will guide you through the form which depend on previous input, such as cells changing colour if an input is not needed (see colour codes below).
In several fields you can choose from predefined inputs. For selecting from such a "drop-down list" either click with the mouse on the small arrow appearing at the right border of the cell, or press "Alt-CursorDown" when you have selected the cell. Some fields allow you to input your own text even if such a drop-down list exists. This is the case when drop-down lists contain empty list entries.

8 Colour codes and fonts:

Black bold text:	This is text describing the input required.
Smaller italic text:	This text gives further explanations.
	Yellow fields indicate mandatory inputs. However, if the topic is not relevant for the installation, no input is required.
	Light yellow fields indicate that an input is optional.
	Green fields show automatically calculated results. Red text indicates error messages (missing data etc).
	Shaded fields indicate that an input in another field makes the input here irrelevant.
	Grey shaded areas should be filled by Member States before publishing customized version of the template.
	Light grey areas are dedicated for navigation and hyperlinks.

9 Navigation panels on top of each sheet provide hyperlinks for quick jumps to individual input sections.

10 This template has been locked against data entry except for yellow fields. However, for transparency reasons, no password has been set. This allows for complete viewing of all formulae. When using this file for data entry, it is recommended to keep the protection in force. The sheets should only be unprotected for checking the validity of formulae. It is recommended to do this in a separate file.

11 In order to protect formulae against unintended modifications, which usually lead to wrong and misleading results,
it is of utmost importance NOT TO USE the CUT & PASTE.
If you want to move data, first COPY and PASTE them, and thereafter delete the unwanted data in the old (wrong) place.

12 Data fields have not been optimized for numerical and other formats. However, sheet protection has been limited so as to allow you to use your own formats. In particular, you may decide about the number of decimal places displayed. The number of places is in principle independent from the precision of calculation. In principle the option "Precision as displayed" of MS Excel should be deactivated. For more details, consult MS Excel's "Help" function on this topic.

13 **DISCLAIMER: All formulae have been developed carefully and thoroughly. However, mistakes cannot be fully excluded.**
As described above, full transparency for checking the validity of calculations is ensured. Neither the authors of this file nor the European Commission can be held liable for eventual damages resulting from wrong or misleading results of the provided calculations.
It is the full responsibility of the user of this file (i.e. the operator of an ETS installation) to ensure that correct data is reported to the competent authority.

Member State specific information:

This Report must be submitted to your Competent Authority to the following address:

Detail address to be provided by the Member State

Information sources:

EU Websites:

EU-Legislation:	http://eur-lex.europa.eu/en/index.htm
EU ETS general:	https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en

Other Websites:

<to be provided by Member State>

Helpdesk:

<to be provided by Member State, if relevant>

Further guidance as provided by the Member State:

A. CLIMATE NEUTRALITY PLAN VERSIONS

I List of climate-neutrality plan versions

This sheet is used for tracking the actual version of the climate-neutrality plan. Each version should have a unique version number, and a reference date.

Depending on the requirements of the Member State, it is possible that the document is exchanged between competent authority and operator with various updates, or that the operator alone keeps track of the versions. In any case, the operator should keep in his files a copy of each version of the climate-neutrality plan.

The status of the climate-neutrality plan at the reference date should be described in the "status" column. Possible status types include, "working draft", "submitted to the competent authority (CA)", "returned with remarks", etc.

At several locations this document makes reference to external files. Please note that any information contained in such still forms an integral part of the CNP.

Version no.	Reference date	Status at reference date	Chapters where modifications have been made. Brief explanation of changes
1	2024-05-30	submitted to competent authority	

II Effectiveness evaluation periods

Periods at which the effectiveness of the climate neutrality plan is evaluated regarding greenhouse gas emissions reductions:							
Year of next effectiveness evaluations:							

B. INSTALLATION DATA

I Consent to use the data contained in this file

The information contained in this file will be used by the competent authority for determining the fulfilment of the climate neutrality plan conditionality of free allocation pursuant to Article 10b of the EU ETS Directive and Article 22b of the FAR Regulation. Furthermore this information might be notified to the European Commission in part or as a whole, if requested so, for the purpose of scrutinising the national implementation measures pursuant to Article 11(1) of the EU ETS Directive.

Please confirm consent to use information contained in this climate neutrality plan.

The operator of this installation confirms that this plan may be used by the competent authority and the European Commission.

The system boundaries and types of greenhouse gases covered by historical emissions, emissions levels and specific targets are consistent with the greenhouse gas emissions permit of the installation and the requirements laid down in the Monitoring and Reporting Regulation (EU) 2018/2066 (MRR) and in the FAR. This also applies when applying for additional allocation for district heating pursuant to Article 22b of the FAR.
The scope of emissions do not include any carbon removals or emission reductions outside the system boundaries of the installation and acquired via carbon offset credits.
Please confirm that the emissions entered comply with the conditions described above.

The operator of this installation confirms the conformity of the system boundaries of emissions.

II Identification of the Installation(s)

1 About the operator

(a)	**Operator Name**	Kubikenborg Aluminium AB
(b)	**Member State**	Sweden
(c)	**Emissions trading permit number**	member state/CA prefix: 22-563-7615-2012
(d)	**Competent Authority**	Länsstyrelsen i Västernorrland
(e)	**Is the climate neutrality plan submitted by a district heating company at company level?**	

Point (e) is only relevant for district heating companies in Bulgaria, Czechia, Latvia or Poland.

If the climate neutrality plan is submitted at company level, historical emissions and targets are to be summed up over all installations covered by the climate neutrality plan and the totals are to be entered in sheets D_HistoricalEmissions and G_FallBackBM and H_OtherProcesses.

2 About your installation(s)

(a) Name of the installation and ID

i.	Installation name:	Kubikenborg Aluminium AB
ii.	Registry ID of the installation (as in NIMs):	205316
iii.	Unique ID:	SE000000000205316

This is usually a natural number, i.e. a code different from the Permit identifier used in the Registry (EUTL).

For example, if the Registry ID is BE000000000123456, please enter here 123456. Together with the Member State selected under (c), this Registry ID (unique ID) will be displayed automatically in

Include any Member State specific guidance on naming of installations.

(b) Address / location of the site of the installation

i.	Address Line 1:	Landsvägsallén 79
ii.	Address Line 2:	
iii.	City:	Sundsvall
iv.	State/Province/Region:	Västernorrland
v.	Postcode/ZIP:	85176
vi.	Country:	Sweden

The following table is only relevant for district heating companies in Bulgaria, Czechia, Latvia or Slovakia, that submit the climate neutrality plan at company level.
Please list all additional installations linked to and operated by the operator and covered by the climate neutrality plan.

No.	Installation Name	Registry ID (as in NIMs)	Unique ID	Address	City	State/Province/Region	Postcode/ZIP	Country
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

III Contact details

Who can we contact about your climate neutrality plan?
It will help us to have someone who we can contact directly with any questions about your climate neutrality plan. The persons you name should have the authority to act on behalf of the operator.

(a)	**Authorised representative:**	**Title:**	
		First Name:	Mats
		Surname:	Swenson
		Job title:	Lab- Miljöchef
		Organisation name (if different from the operator):	
		Telephone number:	739888591
		Email address:	mats.swenson@kubal.se
(b)	**Primary contact:**	**Title:**	
		First Name:	Ida
		Surname:	Magnusson
		Job title:	Miljöingenjör
		Organisation name (if different from the operator):	
		Telephone number:	0739885970
		Email address:	ida.magnusson@kubal.se

C. INSTALLATION DESCRIPTION

I List of sub-installations

1 Product benchmark sub-installations

Please select here all relevant product benchmark sub-installations, consistent with the ones provided in the baseline data report.

Please also list here any sub-installations that are planned to start operating after the submission of the CNP.

Where a sub-installation is planned to start operating or to cease operations after the submission of the CNP, please select the relevant period from the drop-down list, respectively. In case no entries are made, it is assumed that the sub-installation is already existing and will remain operational at least until 2050.

No.	Product type	Starting	Cessation?	CL exposed?	CBAM?	Unit
1	[Primary] Aluminium	<= 2023	None	TRUE	TRUE	tonnes
2						
3						
4						
5						
6						
7						
8						
9						
10						

2 Sub-installations with fall-back approaches

Please select here all relevant sub-installations with fall-back approaches, consistent with the ones provided in the baseline data report.

Please also list here any sub-installations that are planned to start operating after the submission of the CNP.

Where a sub-installation is planned to start operating or to cease operations after the submission of the CNP, please select the relevant period from the drop-down list, respectively. In case no entries are made, it is assumed that the sub-installation is already existing and will remain operational at least until 2050.

According to the Annex of the CNP Regulation, you may provide specific emissions in later sheets of this template relative to other units than the default units of the relevant activity, where more appropriate. For instance, you may want to provide specific emissions for a heat benchmark sub-installation per tonne of (aggregated) production, instead of per TJ.

Please enter the relevant unit of production in column N. If no entries are made there, the default units of TJ will be used for the heat and fuel benchmark sub-installations. For process emissions the default units will be tonnes of (aggregated) production.

No.	Sub-installation type	Relevant?	Starting	Cessation?	CL exposed?	CBAM?	Unit
11	Heat benchmark sub-installation, CL, non-CBAM	FALSE			TRUE	FALSE	
12	Heat benchmark sub-installation, non-CL, non-CBAM	FALSE			FALSE	FALSE	
13	Heat benchmark sub-installation, CBAM	FALSE			TRUE	TRUE	
14	District heating sub-installation	FALSE			FALSE	FALSE	
15	Fuel benchmark sub-installation, CL, non-CBAM	TRUE			TRUE	FALSE	
16	Fuel benchmark sub-installation, non-CL, non-CBAM	FALSE			FALSE	FALSE	
17	Fuel benchmark sub-installation, CBAM	FALSE			TRUE	TRUE	
18	Process emissions sub-installation, CL, non-CBAM	FALSE			TRUE	FALSE	
19	Process emissions sub-installation, non-CL, non-CBAM	FALSE			FALSE	FALSE	
20	Process emissions sub-installation, CBAM	FALSE			TRUE	TRUE	

3 Other processes not covered by sub-installations

The CNP Regulation requires the system boundaries to cover all relevant emissions of the installation determined in accordance with the Monitoring & Reporting Regulation (EU) 2018/2066. This means that emissions may be relevant that are not eligible for free allocation, e.g. electricity production or non-safety flaring.

Therefore, please provide here a short description of each process not covered by sub-installations and enter the relevant units of production. For example, for electricity production, you may want to enter production expressed as "MWh" of net electricity produced.

Where a process is planned to start operating or to cease operations after the submission of the CNP, please select the relevant period from the drop-down list, respectively. In case no entries are made, it is assumed that the sub-installation is already existing and will remain operational at least until 2050.

The processes identified here will be treated similarly to all other sub-installations above in subsequent sheets concerning measures, investments, milestones, targets and impacts.

No.	Short name or ID	Description of the process	Starting	Cessation?	CL exposed?	CBAM?	Units
21					N.A.	N.A.	
22					N.A.	N.A.	
23					N.A.	N.A.	

D. HISTORICAL EMISSIONS

I Specific historical emissions

1 Product benchmark sub-installations

Please enter here the specific historical emissions (consistent with the attributed emission pursuant to the FAR rules and the MRR) for each product benchmark sub-installation for each year of the baseline period.

The average of the specific historical emissions during 2019-2023 will be used as the baseline for setting (intermediate) targets in sheets F to H.

The specific emissions shall be calculated by dividing the attributed emissions by the activity level in each year, both based on the corresponding rules of the FAR in consistency with the data entered in the baseline data report used for calculation of free allocation for 2026-2030.

Years in which the sub-installation did not operate should be left empty, including for cases of new sub-installation planned to start operating only after the submission of the CNP. In the case of the later, please provide an estimate of the specific emissions at the future start of operations.

No.	Product type	Unit	2019	2020	2021	2022	2023	Estimate
1	[Primary] Aluminium	t CO2e / t	1,9463	2,0704	1,8926	1,7986	1,7652	
2								
3								
4								
5								
6								
7								
8								
9								
10								

2 Sub-installations with fall-back approaches

Please enter here the specific historical emissions (consistent with the attributed emission pursuant to the FAR rules and the MRR) for each fall-back benchmark sub-installation for each year of the baseline period, taking into consideration the guidance provided for product benchmark sub-installations above.

However, where other units of production levels than the units for the relevant activity level were chosen in section C.I.2 (note, that the default unit for process emissions is tonnes of production), the emissions shall be expressed relative to those relevant (aggregated) production levels. The attributed emissions should however still be calculated in accordance with the corresponding FAR rules, consistent with the data provided in the baseline data report.

No.	Sub-installation type	Unit	2019	2020	2021	2022	2023	Estimate
11	Heat benchmark sub-installation, CL, non-CBAM	t CO2e / TJ						
12	Heat benchmark sub-installation, non-CL, non-CBAM	t CO2e / TJ						
13	Heat benchmark sub-installation, CBAM	t CO2e / TJ						
14	District heating sub-installation	t CO2e / TJ						
15	Fuel benchmark sub-installation, CL, non-CBAM	t CO2e / TJ	65,10	65,28	65,10	65,10	65,10	
16	Fuel benchmark sub-installation, non-CL, non-CBAM	t CO2e / TJ						
17	Fuel benchmark sub-installation, CBAM	t CO2e / TJ						
18	Process emissions sub-installation, CL, non-CBAM	t CO2e / t						
19	Process emissions sub-installation, non-CL, non-CBAM	t CO2e / t						
20	Process emissions sub-installation, CBAM	t CO2e / t						

3 Specific emissions not covered by sub-installations

Please enter here the specific historical emissions (consistent with the attributed emission pursuant to the FAR rules and the MRR) for each process not covered by a benchmarked sub-installation for each year of the baseline period, taking into consideration the guidance provided for product benchmark sub-installations above.

Please ensure that the emissions are specific to the relevant units of production chosen in section C.I.3. The attributed emissions should be calculated in accordance with the corresponding FAR rules, consistent with the data provided in the baseline data report.

No.	Emission source description	Unit	2019	2020	2021	2022	2023	Estimate
21								
22								
23								

II Absolute historical emissions (optional)

1 Product benchmark sub-installations absolute emissions

Please enter here the historical absolute emissions, expressed as t CO2e, for each sub-installation for each year of the baseline period. Entries here are optional.

No.	Product type	Unit	2019	2020	2021	2022	2023	Estimate
1	[Primary] Aluminium	t CO2e						
2								
3								
4								
5								
6								
7								
8								
9								
10								

2 Sub-installations with fall-back approaches absolute emissions

Please enter here the historical absolute emissions, expressed as t CO2e, for each sub-installation for each year of the baseline period. Entries here are optional.

No.	Sub-installation type	Unit	2019	2020	2021	2022	2023	Estimate
11	Heat benchmark sub-installation, CL, non-CBAM	t CO2e						
12	Heat benchmark sub-installation, non-CL, non-CBAM	t CO2e						
13	Heat benchmark sub-installation, CBAM	t CO2e						
14	District heating sub-installation	t CO2e						
15	Fuel benchmark sub-installation, CL, non-CBAM	t CO2e						
16	Fuel benchmark sub-installation, non-CL, non-CBAM	t CO2e						
17	Fuel benchmark sub-installation, CBAM	t CO2e						
18	Process emissions sub-installation, CL, non-CBAM	t CO2e						
19	Process emissions sub-installation, non-CL, non-CBAM	t CO2e						
20	Process emissions sub-installation, CBAM	t CO2e						

3 Specific emissions not covered by sub-installations

Please enter here the historical absolute emissions, expressed as t CO2e, for each sub-installation for each year of the baseline period. Entries here are optional.

No.	Emission source description	Unit	2019	2020	2021	2022	2023	Estimate
21								
22								
23								

E. MEASURES, INVESTMENTS AND MILESTONES

I Measures

1 Measure description and reasons

Please list here all relevant planned measures (e.g. electrification of fossil-powered furnaces) until 2050, providing for each measure the following information:

- *the period during which the measure is planned to be taken. If a measure has impacts in more than one period, please select the period in which it will be first implemented;*
- *a short name or internal ID for each measure in order to facilitate making reference to each measure later in this template;*
- *a detailed description of each measure. It is possible to refer to an attached document file, if the description exceeds the space provided here (then please list the exact file name here and in sheet K_Co*

Measures should be entered as aggregated as possible. E.g. process optimisations over different periods can be entered as one measure with the period of the first optimisation.

No.	Period	Short name or internal ID	Detailed description
Ex.1	2031-2035	Hydrogen steel	Replacement of BF/BOF with DRI using green hydrogen (further details see separate file 'CNP file.docx')
Ex.2	2025-2030	Measures AB 5 to 7	Process optimisations over different periods starting from 2027
ME1	2026-2030	Reduce anodeeffect	Reduce anodeeffect PFC < 0,1 CO2 eq/ton Al
ME2	2026-2030	Heatrecovery air compressor station 3	Heatrecovery to reduce oilconsumption to 50%
ME3	2026-2030	Reduce anodeconsumption	Reduce anodeconsumption with 2 kg/ton Al
ME4	2026-2030	Remelt	Remelt 30 000 ton
ME5	2031-2035	Bio-based synthesis gas in casthouse	Hypergas at cashouse
ME6	2031-2035	Heatrecovery air compressor station 4	Heatrecovery to reduce oilconsumption to Zero
ME7	2036-2040	CCS Casthouse	CCS casthouse
ME8	2036-2040	Electrical Vehicles	Electrical Vehicles
ME9	2041-2045	CCS Electrolysis	CCS Electrolysis
ME10	2046-2050	Inert Anodes	Convert to Inert anodes

2 Enabling conditions and qualitative impacts

Please provide for each measure identified under 1) above the following information:

- *a detailed description of enabling conditions and infrastructure needs (e.g. CO2 pipeline infrastructure, green hydrogen infrastructure, H2 costs below "x" €/MWh);*
- *a comprehensive reasoning for measure decision why the measures were chosen rather than other potential measures for decarbonisation;*
- *a qualitative assessment of the impacts of each measure (e.g. where this installation is the worldwide first to implement a certain decarbonisation technology, it demonstrates the feasibility of wider uptake assessment will be done later in the template in sheets F to H.*

It is possible to refer to an attached document file, if the description exceeds the space provided here (then please list the exact file name here and in sheet K_Comments).

No.	Detailed description of enabling conditions	Reasons for measure decision	Qualitative impacts
ME1	Se bilaga "Klimatneutralitetsplan Kubal_2024"		
ME2			
ME3			
ME4			
ME5			
ME6			
ME7			
ME8			
ME9			
ME10			

3 Categorisation of measures

Please attribute each measure to one or more of the following types of GHG savings or decarbonisation technologies, as applicable:

(i) switch to low- or zero-emission technologies
(ii) energy efficiency and energy savings
(iii) switch from fossil fuels to:
(1) hydrogen
(2) electricity
(3) biomass fulfilling the sustainability and greenhouse gas savings criteria referred to in Article 38(5) of Implementing Regulation (EU) 2018/2066
(4) alternative fuels from waste streams
(5) other sources of renewable energy
(iv) resource efficiency, including reduced consumption of materials and recycling
(v) carbon capture utilisation and storage
(vi) other

No.	(i) switch to low- or zero-emission technologies	(ii) energy efficiency and energy savings	(iii) (1) hydrogen	(iii) (2) electricity	(iii) (3) sust. Biomass	(iii) (4) to alternative fuels	(iii) (5) other sources of renewable energy	(iv) resource efficiency, etc.	(v) carbon capture utilisation and storage
ME1								TRUE	
ME2		TRUE							
ME3								TRUE	
ME4								TRUE	
ME5							TRUE		
ME6		TRUE							
ME7									TRUE
ME8				TRUE					
ME9									TRUE
ME10	TRUE								

II Investments

1 Investment

Please list here all investments providing the following information:

- *the year in which the investment is planned to be taken (where appropriate, investments may be combined as 5-year averages will be calculated under point 2. below);*
- *a short name or internal ID for each investment in order to facilitate making reference to each investment later in this template;*
- *the corresponding investment costs in mio. € (best estimate at the time of preparing the CNP). This value should be expressed as the one-off investment costs, annualising will be done automatically unc*
- *a detailed description of each investment. It is possible to refer to an attached document file, if the description exceeds the space provided here (then please list the exact file name here and in sheet K_(*

No.	Year	Short name or internal ID	Costs in M€	Detailed description of investments
Ex.1	2032	New electric furnaces	152	Purchase and installation of electric furnaces (further details see separate file 'CNP file.c
IN1	2026	ME 1 Reduce anodeeffect	1	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN2	2026	ME 3 Reduce anodeconsumption	1	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN3	2029	ME 4 Remelt	32	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN4	2034	ME 5 Bio-based synthesis gas in casthouse	15	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN5	2027	ME 2 Heatrecovery air compressor station 3	1	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN6	2033	ME 6 Heatrecovery air compressor station 4	1	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN7	2049	ME 10 Inert Anodes	600	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN8				
IN9				
IN10				

2 Investments annualised Euros

The annualised Euros per year for each five-year period are automatically calculated based on the inputs under point 1) above.

Period	<= 2025	2026-2030	2031-2035	2036-2040	2041-2045
Annualised M€	N.A.	6,70	3,10	0,00	0,00

III Milestones

Please list here all milestones providing the following information:

- *the year in which the milestone is planned to be reached;*
- *a detailed description of each milestone;*
- *the relevant measure for each milestone. Please select them from the drop-down list or, where more than one measure is relevant, enter corresponding information in the form of "ME1, ME3", etc.*

It is possible to refer to an attached document file, if the description exceeds the space provided here (then please list the exact file name here and in sheet K_Comments).
Milestones shall be commensurate to the targets entered in the following sheets.

No.	Period	Detailed description of the milestones	Measure(s)
Ex.1	2031-2035	Final investment decision taken (further details see separate file 'CNP file.docx')	ME1: New electri
Ex.2	2031-2035	Dismantling of old furnaces (further details see separate file 'CNP file.docx')	ME1, ME3
MI1	2026-2030	Continue producing 1 ton of fossilfree aluminium and R&D	ME10: Inert Anod
MI2	2026-2030	Participating in R&D project KlirAl to purify Aluminium with high impurities	ME10: Inert Anod
MI3	2026-2030	Starting R&D project with Swerim CCS in casthouse	ME7: CCS Casth
MI4	2026-2030	Continue to develop reducing anodeeffect time (Se bilaga)	ME1: Reduce and
MI5	2026-2030	Change/improve anodeschedule and covering (Se bilaga)	ME3: Reduce and
MI6	2026-2030	Investment decision on Heat recovery compressorstation 3 (se bilaga)	ME2: Heatrecove
MI7	2026-2030	Lower Anodeconsumption	ME3: Reduce and
MI8	2026-2030	Start project heat recovery step 1	ME2: Heatrecove
MI9	2026-2030	Start to work with remelt	ME4: Remelt
MI10	2026-2030	Reach goal to remelt 30 000 t	ME4: Remelt
MI11	2031-2035	Continue R&D for inert Anodes	ME10: Inert Anod
MI12	2031-2035	Continue to develop reducing anodeeffect time PFC close to zero	ME1: Reduce and
MI13	2031-2035	Continue R&D lowering anodeconsumption	ME3: Reduce and
MI14	2031-2035	Start project converting propane usage to Hypergas	ME5: Bio-based s
MI15	2031-2035	Finalize and start use Hypergas for remelting	ME5: Bio-based s
MI16	2031-2035	Investment decision Heat recovery step 2 (compressorstaion 4)	ME6: Heatrecove
MI17	2031-2035	Finalize project heat recovery step 2 (compressorstation 4)	ME6: Heatrecove
MI18	2036-2040	Investing in CCS casthouse	ME7: CCS Casth
MI19	2036-2040	Finalize CCS in Casthouse	ME7: CCS Casth
MI20	2036-2040	All vehicles is converted to electric	ME8: Electrical V
MI21	2036-2040	Continue R&D for inert Anodes	ME10: Inert Anod
MI22	2036-2040	Participating in R&D project for CCS electrolysis	ME9: CCS Electr
MI23	2041-2045	Investment decision Inert anodes	ME10: Inert Anod
MI24	2041-2045	Investment decision CCS	ME9: CCS Electr
MI25	2041-2045	Finalizing CCS if needed	ME9: CCS Electr
MI26	2046-2050	All primary production pots converted to inert Anodes	ME10: Inert Anod
MI27			
MI28			
MI29			
MI30			

IV Measures and investments prior to submission of the CNP (optional)

Optionally, you may list and describe all measures and investments already implemented prior to the submission of the climate-neutrality plan.

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F. Targets & Impacts ProdBM

I Quantitative impact assessment product BM sub-installations

1 Sub-installation with product benchmark: **[Primary] Aluminium**

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets	1,895	t CO2e / t	1,700	1,590	1,300	1,300	1,300	0,000
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
i. Relative to baseline value	1,8946	90%	84%	69%	69%	69%	0%
ii. Relative to relevant BM value	1,4640	116%	109%	89%	89%	89%	0%

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.), in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:
- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value t CO2e / t	2025 t CO2e / t	2030 t CO2e / t	2035 t CO2e / t	2040 t CO2e / t	2045 t CO2e / t	2050 t CO2e / t
i.	Specific reduction (target versus baseline)	1,8946	-0,195	-0,305	-0,595	-0,595	-0,595	-1,895

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1, IN3		100%	100%	30%	20%	
Ex.2	ME2: New furnace	IN2: New furnace				70%	80%	100%
1	ME1: Reduce anodeeffect	IN1: ME 1 Reduce anodeeffect	100%	82%	8%			
2	ME2: Heatrecovery air compre	IN5: ME 2 Heatrecovery air cor		4%				
3	ME3: Reduce anodeconsumpti	IN2: ME 3 Reduce anodeconsu		14%				
4	ME4: Remelt	IN3: ME 4 Remelt			91%			
5	ME6: Heatrecovery air compre	IN6: ME 6 Heatrecovery air cor			1%			
6	ME10: Inert Anodes	IN7: ME 10 Inert Anodes						100%
7								
8								
9								
10								
iii.	Reduction compared to baseline (100% = values under i.)		-0,195	-0,305	-0,595			-1,895
iv.	Consistency check (= iii. / i.)		100%	100%	100%			100%
v.	Consistency check (error message)					Inconsistent!	Inconsistent!	

(d) Any further comments

2 Sub-installation with product benchmark:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets								
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:
- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value	2025	2030	2035	2040	2045	2050
i.	Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1, IN3		100%	100%	30%	20%	
Ex.2	ME2: New furnace	IN2: New furnace				70%	80%	100%
1								

2								
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iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

3 Sub-installation with product benchmark:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets								
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

	Reference value	2025	2030	2035	2040	2045	2050
i. Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1: IN2		100%	100%	50%	20%	
Ex.2	ME2: New furnace	IN3: New furnace				10%	80%	100%
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iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

4 Sub-installation with product benchmark:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets								
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:
- no targets are set before a cessation or targets are set after a cessation;
- impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;
- the impacts do not add up to 100%.

		Reference value	2025	2030	2035	2040	2045	2050
i.	Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1: Aux		100%	100%	50%	25%	
Ex.2	ME2: New furnace	IN2: New furnace				70%	90%	100%
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iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

5 Sub-installation with product benchmark:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

		Baseline	Unit	2025	2030	2035	2040	2045	2050
i.	Specific emission targets								
ii.	Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

		Reference value	2025	2030	2035	2040	2045	2050
i.	Relative to baseline value							
ii.	Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:
- no targets are set before a cessation or targets are set after a cessation;
- impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;
- the impacts do not add up to 100%.

		Reference value	2025	2030	2035	2040	2045	2050
i.	Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1: Aux		100%	100%	50%	25%	
Ex.2	ME2: New furnace	IN2: New furnace				70%	90%	100%
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iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

6 Sub-installation with product benchmark:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

		Baseline	Unit	2025	2030	2035	2040	2045	2050
i.	Specific emission targets								
ii.	Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:
- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

	Reference value	2025	2030	2035	2040	2045	2050
i. Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1, IN3		100%	100%	50%	25%	
Ex.2	ME2: New furnace	IN2: New furnace				70%	85%	100%
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iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

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7 Sub-installation with product benchmark:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets								
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:
- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

	Reference value	2025	2030	2035	2040	2045	2050
i. Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1, IN3		100%	100%	50%	25%	
Ex.2	ME2: New furnace	IN2: New furnace				70%	85%	100%
1								
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iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

8 Sub-installation with product benchmark:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets								
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

	Reference value	2025	2030	2035	2040	2045	2050
i. Specific reduction (target versus baseline)							

ii. Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.: ME1: Process optimisation (x%)	IN1: IN3		50%	10%	30%	20%	
Ex.: ME2: New furnace	IN2: New furnace				70%	80%	100%
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
iii. Reduction compared to baseline (100% = values under i.)							
iv. Consistency check (= iii. / i.)							
v. Consistency check (error message)							

(d) Any further comments

9 Sub-installation with product benchmark:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets								
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

	Reference value	2025	2030	2035	2040	2045	2050
i. Specific reduction (target versus baseline)							

ii. Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.: ME1: Process optimisation (x%)	IN1: IN3		50%	10%	30%	20%	
Ex.: ME2: New furnace	IN2: New furnace				70%	80%	100%
1.							
2.							
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iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

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10 Sub-installation with product benchmark:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets								
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4" etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

	Reference value	2025	2030	2035	2040	2045	2050
i. Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex1	ME1: Process optimisations over	IN1, IN3		100%	100%	30%	20%	
Ex2	ME2: New furnace	IN2, New furnace				70%	80%	100%
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

G. Targets & Impacts Fall-backs

I Quantitative impact assessment fall-backs

1 Fall-back sub-installation: Heat benchmark sub-installation, CL, non-CBAM | not relevant

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets		t CO2e / TJ						
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value t CO2e / TJ	2025 t CO2e / TJ	2030 t CO2e / TJ	2035 t CO2e / TJ	2040 t CO2e / TJ	2045 t CO2e / TJ	2050 t CO2e / TJ
i. Specific reduction (target versus baseline)								
ii. **Measure**	**Investment**		**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Ex.1	MI2: Process optimisations, over	IN1: R&D		50%	100%	50%	25%	
Ex.2	MI2: New furnace	IN2: New furnace				70%	90%	100%
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
iii. Reduction compared to baseline (100% = values under i.)								
iv. Consistency check (= iii. / i.)								
v. Consistency check (error message)								

(d) Any further comments

2 Fall-back sub-installation: Heat benchmark sub-installation, non-CL, non-CBAM | not relevant

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets		t CO2e / TJ						
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value t CO2e / TJ	2025 t CO2e / TJ	2030 t CO2e / TJ	2035 t CO2e / TJ	2040 t CO2e / TJ	2045 t CO2e / TJ	2050 t CO2e / TJ
i. Specific reduction (target versus baseline)								
ii. **Measure**	**Investment**		**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Ex.1	MI2: Process optimisations, over	IN1: R&D		50%	100%	50%	25%	
Ex.2	MI2: New furnace	IN2: New furnace				70%	90%	100%
1								

2								
3								
4								
5								
6								
7								
8								
9								
10								
iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

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3 Fall-back sub-installation: **Heat benchmark sub-installation, CBAM** | **not relevant**

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

		Baseline	Unit	2025	2030	2035	2040	2045	2050
i.	Specific emission targets		t CO2e / TJ						
ii.	Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

		Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i.	Relative to baseline value							
ii.	Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value t CO2e / TJ	2025 t CO2e / TJ	2030 t CO2e / TJ	2035 t CO2e / TJ	2040 t CO2e / TJ	2045 t CO2e / TJ	2050 t CO2e / TJ
i.	Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1, IN2		100%	100%	50%	20%	
Ex.2	ME2: New furnace	IN3: New furnace				100%	80%	100%
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

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4 Fall-back sub-installation: **District heating sub-installation** | **not relevant**

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

		Baseline	Unit	2025	2030	2035	2040	2045	2050
i.	Specific emission targets		t CO2e / TJ						
ii.	Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

		Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i.	Relative to baseline value							
ii.	Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:
- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value t CO2e / TJ	2025 t CO2e / TJ	2030 t CO2e / TJ	2035 t CO2e / TJ	2040 t CO2e / TJ	2045 t CO2e / TJ	2050 t CO2e / TJ
i.	Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1, IN3		100%	100%	30%	20%	
Ex.2	ME2: New furnace	IN2: New furnace				70%	80%	100%
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

5 Fall-back sub-installation: Fuel benchmark sub-installation, CL, non-CBAM — relevant

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets	65,136	t CO2e / TJ	65,100	65,100	0,000	0,000	0,000	0,000
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i. Relative to baseline value	65,1360	100%	100%	0%	0%	0%	0%
ii. Relative to relevant BM value	42,6000	153%	153%	0%	0%	0%	0%

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:
- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value t CO2e / TJ	2025 t CO2e / TJ	2030 t CO2e / TJ	2035 t CO2e / TJ	2040 t CO2e / TJ	2045 t CO2e / TJ	2050 t CO2e / TJ
i.	Specific reduction (target versus baseline)	65,1360	-0,036	-0,036	-65,136	-65,136	-65,136	-65,136

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1, IN3		100%	100%	30%	20%	
Ex.2	ME2: New furnace	IN2: New furnace				70%	80%	100%
1	ME5: Bio-based synthesis gas	IN4: ME 5 Bio-based synthesis			100%	100%	100%	100%
2								
3								
4								
5								
6								
7								
8								
9								
10								
iii.	Reduction compared to baseline (100% = values under i.)				-65,136	-65,136	-65,136	-65,136
iv.	Consistency check (= iii. / i.)				100%	100%	100%	100%
v.	Consistency check (error message)		Inconsistent!	Inconsistent!				

(d) Any further comments

6 Fall-back sub-installation: Fuel benchmark sub-installation, non-CL, non-CBAM — not relevant

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets		t CO2e / TJ						
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:
- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value t CO2e / TJ	2025 t CO2e / TJ	2030 t CO2e / TJ	2035 t CO2e / TJ	2040 t CO2e / TJ	2045 t CO2e / TJ	2050 t CO2e / TJ
i. Specific reduction (target versus baseline)								
ii. **Measure**	**Investment**		**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Ex.1 ME1: Process optimisations over	IN1, IN3			100%	100%	30%	20%	
Ex.2 ME2: New furnace	IN2: New furnace					70%	80%	100%
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
iii. Reduction compared to baseline (100% = values under i.)								
iv. Consistency check (= iii. / i.)								
v. Consistency check (error message)								

(d) Any further comments

---

7 Fall-back sub-installation:

Fuel benchmark sub-installation, CBAM	not relevant

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription"

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets		t CO2e / TJ						
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:
- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value t CO2e / TJ	2025 t CO2e / TJ	2030 t CO2e / TJ	2035 t CO2e / TJ	2040 t CO2e / TJ	2045 t CO2e / TJ	2050 t CO2e / TJ
i. Specific reduction (target versus baseline)								
ii. **Measure**	**Investment**		**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Ex.1 ME1: Process optimisations over	IN1, IN3			100%	100%	30%	20%	
Ex.2 ME2: New furnace	IN2: New furnace					70%	80%	100%
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
iii. Reduction compared to baseline (100% = values under i.)								
iv. Consistency check (= iii. / i.)								
v. Consistency check (error message)								

(d) Any further comments

8 Fall-back sub-installation:

Process emissions sub-installation, CL, non-CBAM	not relevant

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets		t CO2e / t						
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

	Reference value t CO2e / t	2025 t CO2e / t	2030 t CO2e / t	2035 t CO2e / t	2040 t CO2e / t	2045 t CO2e / t	2050 t CO2e / t
i. Specific reduction (target versus baseline)							

ii. Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1 ME1: Process optimisation (x%)	IN1: IN3		10%	10%	30%	20%	
Ex.2 ME2: New furnace	IN2: New furnace				70%	80%	100%
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
iii. Reduction compared to baseline (100% = values under i.)							
iv. Consistency check (= iii. / i.)							
v. Consistency check (error message)							

(d) Any further comments

9 Fall-back sub-installation:

Process emissions sub-installation, non-CL, non-CBAM	not relevant

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets		t CO2e / t						
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

	Reference value t CO2e / t	2025 t CO2e / t	2030 t CO2e / t	2035 t CO2e / t	2040 t CO2e / t	2045 t CO2e / t	2050 t CO2e / t
i. Specific reduction (target versus baseline)							

ii. Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1 ME1: Process optimisation (x%)	IN1: IN3		10%	10%	30%	20%	
Ex.2 ME2: New furnace	IN2: New furnace				70%	80%	100%
1.							
2.							
3.							
4.							
5.							

6								
7								
8								
9								
10								
iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

---

10 Fall-back sub-installation:

Process emissions sub-installation, CBAM | **not relevant**

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets		t CO2e / t						
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value							

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4" etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

	Reference value t CO2e / t	2025 t CO2e / t	2030 t CO2e / t	2035 t CO2e / t	2040 t CO2e / t	2045 t CO2e / t	2050 t CO2e / t
i. Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex1	ME1: Process optimisations over	IN1, IN3		100%	100%	30%	20%	
Ex2	ME2: New furnace	IN2, New furnace				70%	80%	100%
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

H. Targets & Impacts other processes

I Quantitative impact assessment other processes

1 Other processes:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets								
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value	2025	2030	2035	2040	2045	2050
i. Specific reduction (target versus baseline)								
ii. **Measure**	**Investment**		**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Ex.1	ME1: Process optimisations over	IN1: R&D		50%	100%	30%	20%	
Ex.2	ME2: New furnace	IN2: New furnace				70%	80%	100%
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
iii. Reduction compared to baseline (100% = values under i.)								
iv. Consistency check (= iii. / i.)								
v. Consistency check (error message)								

(d) Any further comments

2 Other processes:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets								
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

		Reference value	2025	2030	2035	2040	2045	2050
i. Specific reduction (target versus baseline)								
ii. **Measure**	**Investment**		**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Ex.1	ME1: Process optimisations over	IN1: R&D		50%	100%	30%	20%	
Ex.2	ME2: New furnace	IN2: New furnace				70%	80%	100%
1								

2								
3								
4								
5								
6								
7								
8								
9								
10								
iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

3 Other processes:

The name of the product benchmark sub-installation is displayed automatically based in the inputs in sheet "C_InstallationDescription".

(a) Specific emission targets

Please enter here the intermediate targets, expressed as specific emissions consistent with the historical emissions (baseline), for the end of each five year period. Additionally absolute emission targets can be entered optionally.

The baseline is automatically calculated based on the input of historical emissions in sheet D_HistoricalEmissions.

	Baseline	Unit	2025	2030	2035	2040	2045	2050
i. Specific emission targets								
ii. Absolute emission targets		t CO2e						

(b) Relative emission targets

The reduction of specific emissions relative to the baseline (average historic emissions or estimate in sheet D) and the relevant benchmark value are automatically calculated, based on the inputs for the specific emission targets under point (a) above.

	Reference value	2025	2030	2035	2040	2045	2050
i. Relative to baseline value							
ii. Relative to relevant BM value	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

(c) Split of specific emission reduction by measure and investment

Please select from the drop-down list each measure that has an impact on the targets specified above for this sub-installation.

For each measure please select from the drop-down list the relevant investments. Where no investment is related to the measure, e.g. only process optimisation, please select "no investments". Where more than one investment relates to a certain measure, please enter corresponding information in the form of "IN1, IN4", etc.

Subsequently, please provide for each period the percentage to which each measure and investments contributes to the specific emission reduction displayed under i. The sum of all measures should equal 100% (consistency check under iv.) in which case the total emission reduction displayed under iii. equals the specific reduction under i.

Following the entries made in sections C.I and E.I.1, years prior to the period in which the measures are implemented or prior and after the sub-installation is operational are greyed out.

The consistency check under v. will prompt an error message in the following cases:

- *no targets are set before a cessation or targets are set after a cessation;*
- *impacts are entered for years where there are either no targets set or the targets are equal to the baseline, i.e. reduction under i. equals zero;*
- *the impacts do not add up to 100%.*

	Reference value	2025	2030	2035	2040	2045	2050
i. Specific reduction (target versus baseline)							

ii.	Measure	Investment	2025	2030	2035	2040	2045	2050
Ex.1	ME1: Process optimisations over	IN1: IN2		100%	100%	50%	20%	
Ex.2	ME2: New furnace	IN3: New furnace				10%	80%	100%
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
iii.	Reduction compared to baseline (100% = values under i.)							
iv.	Consistency check (= iii. / i.)							
v.	Consistency check (error message)							

(d) Any further comments

I. SUMMARY

I General information about the CNP

(a) About the operator

Operator Name	Kubikenborg Aluminium AB	
Member State	Sweden	
Emissions trading permit number	member state/CA prefix	22-563-7615-2012
Competent Authority	Länsstyrelsen i Västernorrland	
CNP submitted by DH company at company level		

The operator of this installation confirms that this plan may be used by the competent authority and the European Commission.
The operator of this installation confirms the conformity of the system boundaries of emissions.

(b) About the installation(s)

No.	Installation Name	Registry ID (as in NIMs)	Unique ID	Address	City	State/Province/Region	Postcode/ZIP	Country
1	Kubikenborg Aluminium AB	205316	SE000000000205316	Landsvägsallé	Sundsvall	Västernorrland	85176	Sweden
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

II Historical emissions

No.	Product type	Unit	2019	2020	2021	2022	2023	Estimate
1	[Primary] Aluminium	t CO2e / t	1,946	2,070	1,893	1,799	1,765	0,000
2								
3								
4								
5								
6								
7								
8								
9								
10								
11	Heat benchmark sub-installation, CL, non-CBAM	TJ						
12	Heat benchmark sub-installation, non-CL, non-CBAM	TJ						
13	Heat benchmark sub-installation, CBAM	TJ						
14	District heating sub-installation	TJ						
15	Fuel benchmark sub-installation, CL, non-CBAM	TJ	65,10	65,28	65,10	65,10	65,10	0,00
16	Fuel benchmark sub-installation, non-CL, non-CBAM	TJ						
17	Fuel benchmark sub-installation, CBAM	TJ						
18	Process emissions sub-installation, CL, non-CBAM	t CO2e						
19	Process emissions sub-installation, non-CL, non-CBAM	t CO2e						
20	Process emissions sub-installation, CBAM	t CO2e						
21								
22								
23								

III Specific targets relative to the relevant benchmark and to the baseline value

(a) Specific targets relative to the relevant benchmark values

No.	Product type	BM value	2025	2030	2035	2040	2045	2050
1	[Primary] Aluminium	1,4640	116%	109%	89%	89%	89%	0%
2								
3								
4								
5								
6								
7								
8								
9								
10								
11	Heat benchmark sub-installation, CL, non-CBAM							
12	Heat benchmark sub-installation, non-CL, non-CBAM							
13	Heat benchmark sub-installation, CBAM							
14	District heating sub-installation							
15	Fuel benchmark sub-installation, CL, non-CBAM	42,60	153%	153%	0%	0%	0%	0%
16	Fuel benchmark sub-installation, non-CL, non-CBAM							
17	Fuel benchmark sub-installation, CBAM							
18	Process emissions sub-installation, CL, non-CBAM							
19	Process emissions sub-installation, non-CL, non-CBAM							
20	Process emissions sub-installation, CBAM							
21								
22								
23								

(b) Specific targets relative to the average specific emissions during the baseline

No.	Product type	Baseline	2025	2030	2035	2040	2045	2050
1	[Primary] Aluminium	1,8946	90%	84%	69%	69%	69%	0%
2								
3								
4								
5								
6								
7								
8								
9								
10								
11	Heat benchmark sub-installation, CL, non-CBAM							

12	Heat benchmark sub-installation, non-CL, non-CBAM							
13	Heat benchmark sub-installation, CBAM							
14	District heating sub-installation							
15	Fuel benchmark sub-installation, CL, non-CBAM	65,14	100%	100%	0%	0%	0%	0%
16	Fuel benchmark sub-installation, non-CL, non-CBAM							
17	Fuel benchmark sub-installation, CBAM							
18	Process emissions sub-installation, CL, non-CBAM							
19	Process emissions sub-installation, non-CL, non-CBAM							
20	Process emissions sub-installation, CBAM							
21								
22								
23								

III Gantt charts for measures, investments & milestones

(a)	Measures	<= 2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050
1	ME1: Reduce anodeeffect						
2	ME2: Heatrecovery air compressor station 3						
3	ME3: Reduce anodeconsumption						
4	ME4: Remelt						
5	ME5: Bio-based synthesis gas in casthouse						
6	ME6: Heatrecovery air compressor station 4						
7	ME7: CCS Casthouse						
8	ME8: Electrical Vehicles						
9	ME9: CCS Electrolysis						
10	ME10: Inert Anodes						

(b)	Investments	<= 2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050
1	IN1: ME 1 Reduce anodeeffect						
2	IN2: ME 3 Reduce anodeconsumption						
3	IN3: ME 4 Remelt						
4	IN4: ME 5 Bio-based synthesis gas in casthouse						
5	IN5: ME 2 Heatrecovery air compressor station 3						
6	IN6: ME 6 Heatrecovery air compressor station 4						
7	IN7: ME 10 Inert Anodes						
8							
9							
10							

(c)	Milestones	<= 2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050
1	MI1: Continue producing 1 ton of fossilfree aluminium and R&D						
2	MI2: Participating in R&D project KlirAl to purify Aluminium with						
3	MI3: Starting R&D project with Swerim CCS in casthouse						
4	MI4: Continue to develop reducing anodeeffect time (Se bilaga						
5	MI5: Change/improve anodeschedule and covering (Se bilaga)						
6	MI6: Investment decision on Heat recovery compressorstation						
7	MI7: Lower Anodeconsumption						
8	MI8: Start project heat recovery step 1						
9	MI9: Start to work with remelt						
10	MI10: Reach goal to remelt 30 000 t						
11	MI11: Continue R&D for inert Anodes						
12	MI12: Continue to develop reducing anodeeffect time PFC clos						
13	MI13: Continue R&D lowering anodeconsumption						
14	MI14: Start project converting propane usage to Hypergas						
15	MI15: Finalize and start use Hypergas for remelting						
16	MI16: Investment decision Heat recovery step 2 (compressorst						
17	MI17: Finalize project heat recovery step 2 (compressorstatior						
18	MI18: Investing in CCS casthouse						
19	MI19: Finalize CCS in Casthouse						
20	MI20: All vehicles is converted to electric						
21	MI21: Continue R&D for inert Anodes						
22	MI22: Participating in R&D project for CCS electrolysis						
23	MI23: Investment decision Inert anodes						
24	MI24: Investment decision CCS						
25	MI25: Finalizing CCS if needed						
26	MI26: All primary production pots converted to inert Anodes						
27							
28							
29							
30							

IV Details for measures, investments & milestones

(a) Measures

No.	Period	Short name or internal ID	Detailed description
ME1	2026-2030	Reduce anodeeffect	Reduce anodeeffect PFC < 0,1 CO2 eq/ton Al
ME2	2026-2030	Heatrecovery air compressor	Heatrecovery to reduce oilconsumption to 50%
ME3	2026-2030	Reduce anodeconsumption	Reduce anodeconsumption with 2 kg/ton Al
ME4	2026-2030	Remelt	Remelt 30 000 ton
ME5	2031-2035	Bio-based synthesis gas in	Hypergas at cashouse
ME6	2031-2035	Heatrecovery air compressor	Heatrecovery to reduce oilconsumption to Zero
ME7	2036-2040	CCS Casthouse	CCS casthouse
ME8	2036-2040	Electrical Vehicles	Electrical Vehicles
ME9	2041-2045	CCS Electrolysis	CCS Electrolysis
ME10	2046-2050	Inert Anodes	Convert to Inert anodes

No.	Detailed description of enabling conditions	Reasons for measure decision	Qualitative impacts
ME1	Se bilaga "Klimatneutralitetsplan Kubal_2024"		
ME2			
ME3			
ME4			
ME5			
ME6			
ME7			
ME8			
ME9			
ME10			

No.	(i) switch to low- or zero-emission technologies	(ii) energy efficiency and energy savings	(iii) (1) hydrogen	(iii) (2) electricity	(iii) (3) sust. Biomass	(iii) (4) to alternative fuels	(iii) (5) other sources of renewable energy	(iv) resource efficiency, etc.	(v) carbon capture utilisation and storage	(vi) other
ME1								TRUE		
ME2		TRUE								
ME3								TRUE		
ME4								TRUE		
ME5							TRUE			
ME6		TRUE								

ME7									TRUE	
ME8				TRUE						
ME9									TRUE	
ME10	TRUE									

(b) Investments

No.	Year	Short name or internal ID	Costs in M€	Detailed description of investments
IN1	2026	ME 1 Reduce anodeeffect	0,5	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN2	2026	ME 3 Reduce	0,5	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN3	2029	ME 4 Remelt	32	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN4	2034	ME 5 Bio-based synthesis gas	15	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN5	2027	ME 2 Heatrecovery air	0,5	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN6	2033	ME 6 Heatrecovery air	0,5	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN7	2049	ME 10 Inert Anodes	600	Se bilaga "Klimatneutralitetsplan Kubal_2024"
IN8				
IN9				
IN10				

Period	<= 2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050
Annualised M€	N.A.	6,70	3,10	0,00	0,00	120,00

(c) Milestones

No.	Period	Detailed description of the milestones	Measure(s)
MI1	2026-2030	Continue producing 1 ton of fossilfree aluminium and R&D	ME10: Inert Anodes
MI2	2026-2030	Participating in R&D project KlirAl to purify Aluminium with high impurities	ME10: Inert Anodes
MI3	2026-2030	Starting R&D project with Swerim CCS in casthouse	ME7: CCS Casthouse
MI4	2026-2030	Continue to develop reducing anodeeffect time (Se bilaga)	ME1: Reduce anodeeffect
MI5	2026-2030	Change/improve anodeschedule and covering (Se bilaga)	ME3: Reduce anodeconsumption
MI6	2026-2030	Investment decision on Heat recovery compressorstation 3 (se bilaga)	ME2: Heatrecovery air compressor station 3
MI7	2026-2030	Lower Anodeconsumption	ME3: Reduce anodeconsumption
MI8	2026-2030	Start project heat recovery step 1	ME2: Heatrecovery air compressor station 3
MI9	2026-2030	Start to work with remelt	ME4: Remelt
MI10	2026-2030	Reach goal to remelt 30 000 t	ME4: Remelt
MI11	2031-2035	Continue R&D for inert Anodes	ME10: Inert Anodes
MI12	2031-2035	Continue to develop reducing anodeeffect time PFC close to zero	ME1: Reduce anodeeffect
MI13	2031-2035	Continue R&D lowering anodeconsumption	ME3: Reduce anodeconsumption
MI14	2031-2035	Start project converting propane usage to Hypergas	ME5: Bio-based synthesis gas in casthouse
MI15	2031-2035	Finalize and start use Hypergas for remelting	ME5: Bio-based synthesis gas in casthouse
MI16	2031-2035	Investment decision Heat recovery step 2 (compressorstaion 4)	ME6: Heatrecovery air compressor station 4
MI17	2031-2035	Finalize project heat recovery step 2 (compressorstation 4)	ME6: Heatrecovery air compressor station 4
MI18	2036-2040	Investing in CCS casthouse	ME7: CCS Casthouse
MI19	2036-2040	Finalize CCS in Casthouse	ME7: CCS Casthouse
MI20	2036-2040	All vehicles is converted to electric	ME8: Electrical Vehicles
MI21	2036-2040	Continue R&D for inert Anodes	ME10: Inert Anodes
MI22	2036-2040	Participating in R&D project for CCS electrolysis	ME9: CCS Electrolysis
MI23	2041-2045	Investment decision Inert anodes	ME10: Inert Anodes
MI24	2041-2045	Investment decision CCS	ME9: CCS Electrolysis
MI25	2041-2045	Finalizing CCS if needed	ME9: CCS Electrolysis
MI26	2046-2050	All primary production pots converted to inert Anodes	ME10: Inert Anodes
MI27			
MI28			
MI29			
MI30			

V Sub-installation data

1 Sub-installation with product benchmark: [Primary] Aluminium

		Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value	1,8946	90%	84%	69%	69%	69%	0%
ii.	Targets relative to relevant BM value	1,4640	116%	109%	89%	89%	89%	0%

		Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline	1,8946	-0,195	-0,305	-0,595	-0,595	-0,595	-1,895

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1	ME1: Reduce anodeeffect	IN1: ME 1 Reduce anodeeffect	100%	82%	8%	0%	0%	0%
2	ME2: Heatrecovery air compre	IN5: ME 2 Heatrecovery air cor	0%	4%	0%	0%	0%	0%
3	ME3: Reduce anodeconsumpti	IN2: ME 3 Reduce anodeconsu	0%	14%	0%	0%	0%	0%
4	ME4: Remelt	IN3: ME 4 Remelt	0%	0%	91%	0%	0%	0%
5	ME6: Heatrecovery air compre	IN6: ME 6 Heatrecovery air cor	0%	0%	1%	0%	0%	0%
6	ME10: Inert Anodes	IN7: ME 10 Inert Anodes	0%	0%	0%	0%	0%	100%
7								
8								
9								
10								
		TOTAL	100%	100%	100%	0%	0%	100%

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1	ME1: Reduce anodeeffect	IN1: ME 1 Reduce anodeeffect	-10%	-13%	-3%	0%	0%	0%
2	ME2: Heatrecovery air compre	IN5: ME 2 Heatrecovery air cor	0%	-1%	0%	0%	0%	0%
3	ME3: Reduce anodeconsumpti	IN2: ME 3 Reduce anodeconsu	0%	-2%	0%	0%	0%	0%
4	ME4: Remelt	IN3: ME 4 Remelt	0%	0%	-29%	0%	0%	0%
5	ME6: Heatrecovery air compre	IN6: ME 6 Heatrecovery air cor	0%	0%	0%	0%	0%	0%
6	ME10: Inert Anodes	IN7: ME 10 Inert Anodes	0%	0%	0%	0%	0%	-100%
7								
8								
9								
10								
		TOTAL	-10%	-16%	-31%	0%	0%	-100%

2 Sub-installation with product benchmark:

		Reference value	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value							
ii.	Targets relative to relevant BM value							

		Reference value	2025	2030	2035	2040	2045	2050

iii. Absolute specific reduction versus baseline								

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

3 Sub-installation with product benchmark:

	Reference value	2025	2030	2035	2040	2045	2050
i. Targets relative to baseline value							
ii. Targets relative to relevant BM value							

	Reference value	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

4 Sub-installation with product benchmark:

	Reference value	2025	2030	2035	2040	2045	2050
i. Targets relative to baseline value							
ii. Targets relative to relevant BM value							

	Reference value	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								

8								
9								
10								
		TOTAL						

5 Sub-installation with product benchmark:

	Reference value	2025	2030	2035	2040	2045	2050
i. Targets relative to baseline value							
ii. Targets relative to relevant BM value							

	Reference value	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

6 Sub-installation with product benchmark:

	Reference value	2025	2030	2035	2040	2045	2050
i. Targets relative to baseline value							
ii. Targets relative to relevant BM value							

	Reference value	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

7 Sub-installation with product benchmark:

	Reference value	2025	2030	2035	2040	2045	2050
i. Targets relative to baseline value							
ii. Targets relative to relevant BM value							

	Reference value	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								

6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

8 Sub-installation with product benchmark:

		Reference value	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value							
ii.	Targets relative to relevant BM value							

		Reference value	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

9 Sub-installation with product benchmark:

		Reference value	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value							
ii.	Targets relative to relevant BM value							

		Reference value	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

10 Sub-installation with product benchmark:

	Reference value	2025	2030	2035	2040	2045	2050
i. Targets relative to baseline value							
ii. Targets relative to relevant BM value							

	Reference value	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

11 Fall-back sub-installation:

Heat benchmark sub-installation, CL, non-CBAM	not relevant

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i. Targets relative to baseline value							
ii. Targets relative to relevant BM value							

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

12 Fall-back sub-installation:

Heat benchmark sub-installation, non-CL, non-CBAM	not relevant

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i. Targets relative to baseline value							
ii. Targets relative to relevant BM value							

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

13 Fall-back sub-installation: Heat benchmark sub-installation, CBAM — not relevant

		Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value							
ii.	Targets relative to relevant BM value							

		Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

14 Fall-back sub-installation: District heating sub-installation — not relevant

		Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value							
ii.	Targets relative to relevant BM value							

		Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

15 Fall-back sub-installation: Fuel benchmark sub-installation, CL, non-CBAM — relevant

		Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value	65,136	100%	100%	0%	0%	0%	0%
ii.	Targets relative to relevant BM value	42,6	153%	153%	0%	0%	0%	0%

		Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline	65,136	-0,036	-0,036	-65,136	-65,136	-65,136	-65,136

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1	ME5: Bio-based synthesis gas	IN4: ME 5 Bio-based synthesis	0%	0%	100%	100%	100%	100%
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL	0%	0%	100%	100%	100%	100%

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1	ME5: Bio-based synthesis gas	IN4: ME 5 Bio-based synthesis	0%	0%	-100%	-100%	-100%	-100%
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL	0%	0%	-100%	-100%	-100%	-100%

16 Fall-back sub-installation:

Fuel benchmark sub-installation, non-CL, non-CBAM	not relevant

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i. Targets relative to baseline value							
ii. Targets relative to relevant BM value							

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

17 Fall-back sub-installation:

Fuel benchmark sub-installation, CBAM	not relevant

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
i. Targets relative to baseline value							
ii. Targets relative to relevant BM value							

	Reference value t CO2e / TJ	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								

9								
10								
		TOTAL						

18 Fall-back sub-installation:

Process emissions sub-installation, CL, non-CBAM	not relevant

		Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value							
ii.	Targets relative to relevant BM value							

		Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

19 Fall-back sub-installation:

Process emissions sub-installation, non-CL, non-CBAM	not relevant

		Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value							
ii.	Targets relative to relevant BM value							

		Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

20 Fall-back sub-installation:

Process emissions sub-installation, CBAM	not relevant

		Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value							
ii.	Targets relative to relevant BM value							

		Reference value t CO2e / t	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								

7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

21 Other processes:

								not relevant
		Reference value	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value							
ii.	Targets relative to relevant BM value	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
		Reference value	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

22 Other processes:

								not relevant
		Reference value	2025	2030	2035	2040	2045	2050
i.	Targets relative to baseline value							
ii.	Targets relative to relevant BM value	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
		Reference value	2025	2030	2035	2040	2045	2050
iii.	Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

23 Other processes:

								not relevant
		Reference value	2025	2030	2035	2040	2045	2050

i. Targets relative to baseline value							
ii. Targets relative to relevant BM value	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

	Reference value	2025	2030	2035	2040	2045	2050
iii. Absolute specific reduction versus baseline							

iv. Impact share of each measure (100% = value under point iii.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

v. Impact share of each measure (100% = reference value during baseline, point i.)

	Measure	Investments	2025	2030	2035	2040	2045	2050
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
		TOTAL						

I. MS specific	Navigation area:	Table of contents			

I. ADDITIONAL DATA REQUIREMENTS BY THE MEMBER STATE

I To be defined by the Member State

K. COMMENTS AND FURTHER INFORMATION

I Documents supporting this report

Please list here all relevant documents which are submitted together with this plan

Please provide file name(s) (if in an electronic format) or document reference number(s) (if hard copy) below:

File name/Reference	Document description
Klimatneutralitetsplan Kubal m	Kubal Klimatneutralitetsplan med bilagor 2024-05-29

II Free space for all kinds of supplemental information

In space below you can enter all information which was not suitable for input in other sheets and which you consider important for the competent authority