

ENVIRONMENTAL PRODUCT DECLARATION OF COMEXI F2 MC FLEXO PRESS



EPD® Registration number: S-P-01360
Validity: 3 years (2021/08/17)
Publication date: 2018/08/21
Scope of the EPD®: International
UN CPC code 449

EPD® based in PCR UN CPC 449 OTHER SPECIAL-PURPOSE MACHINERY AND PARTS THEREOF. 2010:08 version 3.01

INDEX

1.	PROGRAMME RELATED INFORMATION	4
2.	PRODUCT RELATED INFORMATION	5
2.1	INFORMATION ABOUT THE MANUFACTURING COMPANY	5
2.1.1	INFORMATION ABOUT ENVIRONMENTAL MANAGEMENT SYSTEMS	5
2.1.2	ENVIRONMENTAL COMMITMENT OF THE COMPANY	5
2.1.3	COMPANY LOGOTYPE	5
2.2	SPECIFICATION OF THE PRODUCT	6
2.2.1	QUALITY OF DATA AND ALLOCATION	10
2.3	FUNCTIONAL UNIT	10
2.4	METHODOLOGY AND ASSUMPTIONS	11
2.5	DESCRIPTION OF THE PROCESSES AND LIMITS OF THE SYSTEM	12
2.5.1	UPSTREAM MODULE	13
2.5.2	CORE MODULE	13
2.5.3	DOWNSTREAM MODULE	13
2.5.4	MODULE D. POTENTIAL BENEFITS AND LOADS BEYOND THE LIMITS OF THE SYSTEM	13
2.6	COMPARISON OF EPD [®] S OF THE SAME PRODUCT CATEGORY	13
2.7	EPD [®] VALIDITY	13
3.	ENVIRONMENTAL PERFORMANCE RELATED INFORMATION	14
3.1	POTENTIAL IMPACT OVER THE ENVIRONMENT	14
3.2	USE OF RESOURCES	15
3.3	OTHER ENVIRONMENTAL INFORMATION (WASTE AND OUTPUT FLOWS)	15
4.	INTERPRETATION OF RESULTS	16
5.	DIFFERENCES WITH OTHER VERSIONS OF THE EPD [®]	17
6.	VERIFICATION	17
7.	REFERENCES	17
8.	ANNEX	17
8.1	RESULTS FOR ASIA	18
8.2	RESULTS FOR AFRICA	20
8.3	RESULTS FOR EUROPE	22
8.4	RESULTS FOR SOUTH AMERICA	24
8.5	RESULTS FOR NORTH AMERICA	26
8.6	RESULTS FOR OCEANIA	28
8.7	RESULTS FOR 100% RENEWABLE ENERGY	30



Comexi headquarters. Girona. Spain

1. PROGRAMME RELATED INFORMATION

NAME OF THE PROGRAM AND PROGRAM OPERATOR	The international EPD® System, operated by EPD International AB
REFERENCE PCR	PCR UN CPC 449 Other special-purpose machinery and parts thereof. 2010:08 version 3.01
EPD® REGISTRATION NUMBER	S-P-01360
DATE OF PUBLICATION	2018/08/21
VALIDITY	3 years (2021/08/17)
GEOGRAPHICAL SCOPE OF THE EPD®	International
FOR MORE INFORMATION	www.environdec.com

2. PRODUCT RELATED INFORMATION

2.1 Information about the manufacturing company

Company responsible of the publication of the EPD® and production site address

Comexi Group Industries SAU
Polígon Industrial de Girona, Av. Mas Pins, 135
17457 Riudellots de la Selva GIRONA
SPAIN

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Company responsible of the technical support for the generation of the LCA calculations

ENGLoba CONSULTING PROFESSIONAL SERVICES, SL
www.englobaconsulting.com

2.1.1 Information about Environmental Management Systems

COMEXI GROUP INDUSTRIES Management System integrates and is based on 4 pillars to achieve an efficient management of the company:

- Quality (Q)
- Environment (E)
- Occupational Health and Safety (SH)
- Research + Development + Innovation (R + D + i)

As part of our commitment to manufacturing products to the highest quality standards, COMEXI has implemented and certificated ISO 9001 Quality Management Systems since 2002 (registration number: ES14/17025), ISO 14001 Environmental Management Systems certification since 2005 (registration number: ES14/17026), OHSAS 18001 since 2007 (registration number: ES14/16960), UNE 166002 since 2006 (registration number: ES14/17027) and EMAS since 2013 (registration number: ES-CAT-000407).



2.1.2 Environmental commitment of the company

COMEXI goal is to achieve the full satisfaction of the customer, exceeding their expectations in all that the quality of our products is concerned, such as employees and collaborators, full respect for the environment and all legal or regulatory aspects that affect. And ensure the working conditions of employees.

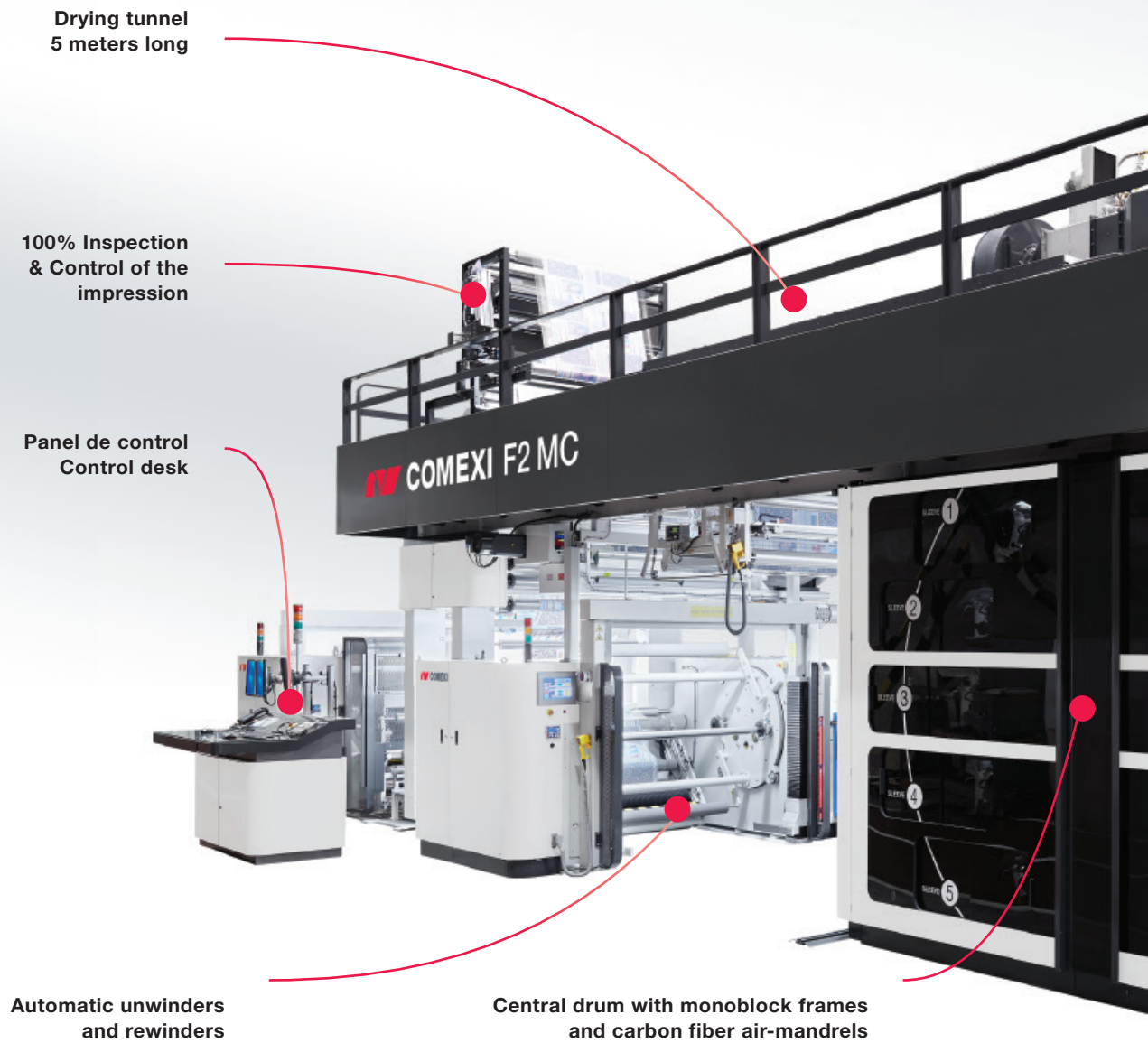
COMEXI GROUP INDUSTRIES has adopted the commitment to improve the quality of its products and services, moving towards business excellence, through continuous improvement.

COMEXI GROUP INDUSTRIES, however, is aware that this business excellence must be supported by all parties involved in the activity.

2.1.3 Company logotype



2.2 Specification of the product





**Drying system with
4 fans and two
independent circuits**

**Magnetic pipeless
doctor blade**

**Excitink inking system with
integrated viscometers
and temperature control**

Comexi F2 MC is a highly versatile flexo press that combines ergonomics and accessibility with the performance and robustness of the rest of the F2 range.

COMEXI FLEXO is a new generation of presses designed to print multiple types of plastic materials (film), paper, laminates and aluminium (foil). In addition to the flexibility mentioned, it gives the finished reels an excellent print quality with productivity levels unprecedented in the market.

The COMEXI FLEXO range has been designed following a modular concept that allows us to update all our presses, as we incorporate the various technological advances.

The Comexi F2 MC is available in 8 to 10 colours with web widths of 920 mm to 1320 mm and printing repeats up to 800 mm.

Table 1 Comexi F2 MC description according PCR requirements

COMEXI F2 MC DESCRIPTION

Commercial name	Comexi F2 MC 8 colours
Functions	Flexographic printing
Printing technology	Flexographic
Maximum number of colours	10
Printing width (mm)	870 / 1070 / 1270
Maximum printing speed (m/min)	400
Size and dimension (m)	15,80 x 7,45 x 5,43
Weight (kg)	48.719
Module 1	Printing Unit
Module 2	Chill rolls and Video
Module 3	Profiles and tunnel
Module 4	Heating source and Platform
Module 5	Rewinder and unwinder
Module 6	Inking System: Excitink
Used fuels or energy vectors	Natural Gas and electric energy

Table 2 Comexi F2 MC technical information

TECHNICAL INFORMATION

Functional performance (productivity)	14.000 m2/h
Nominal Power	156 kW
Energy consumption per hour of use	Electric energy: 99,6 kWh/h
Natural gas: 6,8 m3/h	10
Chemical products and other consumables consumption	Not included: printing support material, ink, ceramic anilox rollers Cleaning: Solvent: 5,5 kg/h Temperature stabilizer: Water: 8700 kg/h

The gross weight of material of one product unit, divided by each one of the printing modules, are reported in table 3.



Doctor blade



Drying tunnel



CINGULARReal²

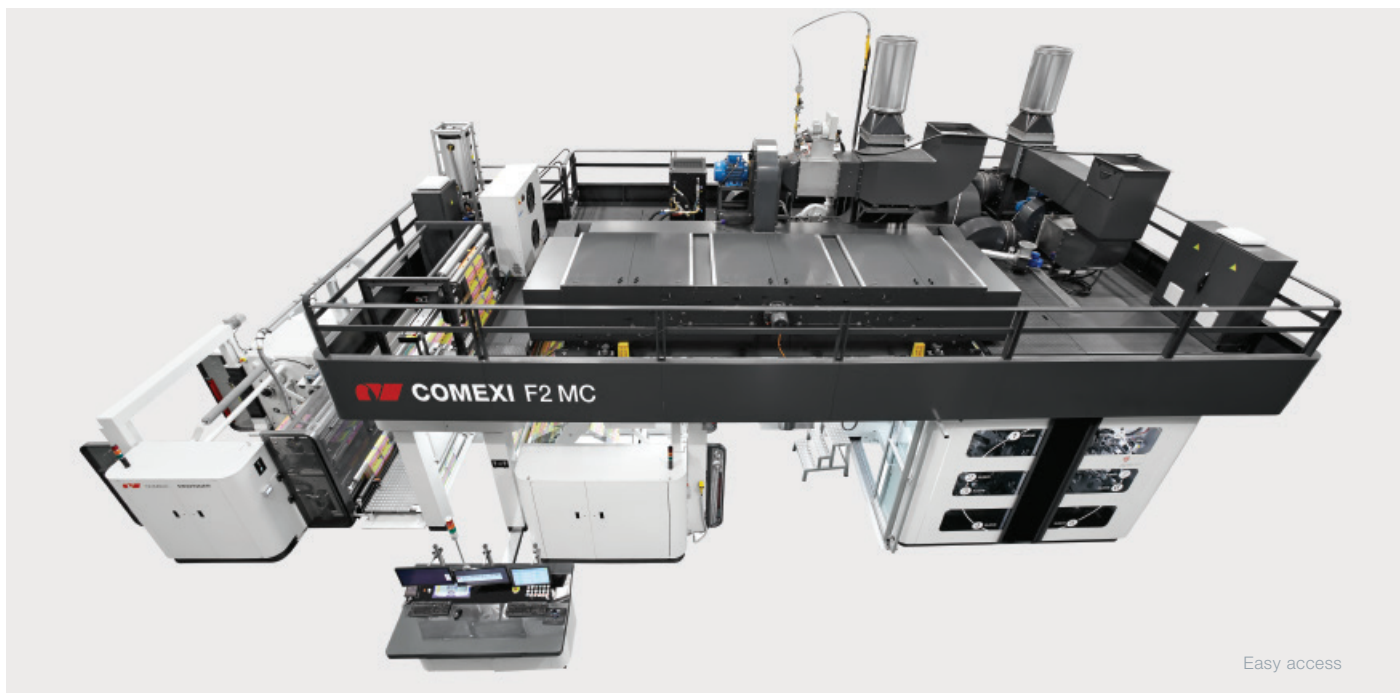


Table 3 Material content per 1 Comexi F2 MC machine, expressed in kg of each type of material and per module.

Type of material	M1 Printing unit	M2 Chill rolls and Video	M3 Profiles and tunnel	M4 Heating source and platform	M5 Rewinder and unwinder	M6 Inking System: Excitink	Comexi F2 MC machine total weight
Plastic materials. Polyamide	10	-	-	5	7	5	27
Plastic materials. Polycarbonate	12	-	-	-	-	-	12
Plastic materials. Nylon	10	-	-	-	-	-	10
Iron	10.300						10.300
Steel	7.550	2.925	3.770	3.930	8.290	285	26.750
Aluminium	1.200	230	180	200	1.305	175	3.290
Composite	1.500	-	-	-	-	-	1.500
EPDM	55	45	-	-	45	10	155
Ceramic materials	120	-	-	-	-	-	120
Glass	250	-	-	-	-	-	250
Textile and fibres	10	2	-	15	3	-	30
Electric components	1.500	225	50	250	450	50	2.525
Wood (packaging)	3.000	150	150	150	150	150	3.750
Total weight	25.517	3.577	4.150	4.550	10.250	675	48.719

During the life cycle of the product, only solvents used during the use phase are listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization¹” as hazardous substances.

The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.

¹ http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

2.2.1 Quality of data and allocation

Specific data has been taken on the quantities of materials and energy used during the life cycle of Comexi F2 MC. This data has been supplied by COMEXI, referring to the year 2016 and come from production data. Generic data on the impact per unit of matter or energy is considered. This data was obtained from the internationally recognized database of Life Cycle Assessment Ecoinvent, in its version 3.3.

The data selected is considered to achieve the required quality data since:

- Geographical representativeness: Data collected from the company COMEXI, where Core Module unit processes are performed, are representative of the current production process

and of the region in where the process is performed. On the other hand, generic data representative of the country (such as the electricity mix) or of larger territories (Europe) have been used.

- Technological equivalence: data comes from the same physical and chemical processes, or at least the same technological coverage.
- Time boundaries: The data are representative for the 2016 frame and for the period which the EPD® is valid.
- Boundaries to nature: data include all the quantitative information needed for the EPD®.
- Boundaries to technical systems: the same life cycle stages are taken into account.

2.3 Functional unit

The functional unit of this for cradle-to grave EPD® is:

One flexographic press Comexi F2 MC of 8 colours (upstream, core and end-of-life processes). The reference flow for the use phase of the

life cycle of the machine is a functional unit, 1200 working hours, during which the press is working.



2.4 Methodology and assumptions

A Life Cycle Assessment of flexographic printing machinery Comexi F2 MC has been done, including all life cycle stages (from cradle to grave) and a use phase of 1200 hours. An EPD® has been done following the Product Category Rule UN CPC 449 Other special-purpose machinery and parts thereof 2010:08 version 3.01. CML 4.2, EDIP 2003 (for waste production calculation) and Cumulative Energy Demand (for energy indicators) have been used. It must be noted that an additional impact category present in Impact 2000+ impact model has been introduced in the LCA study since it has been considered that they add useful information (Human Health). The pollutant payer principle has been used.

In order to calculate the waste generation, electricity, natural gas and water consumption, an economic allocation has been done based on the machine value in 2016, since the price of the product is the same in any country of the world.

Primary data has been used to determine the quantity of raw materials, energy and transport consumption, as well as waste production and emissions to air, water and soil (any emissions). This data corresponds to 2016.

With reference to the electricity mix used in electricity consumption in the manufacturing plant, the electricity mix production in Spain in 2016 has been introduced (source Red Eléctrica Española).

For the use phase, the electricity mix of the countries where the machine has been sold in 2016 has been considered. The electricity mix production corresponds to 2012 situation (source: Ecoinvent 3.3 database) except for Spain, where the 2016 mix has been used. The average electricity mix of the use phase is shown in Figure 1.

In order to assess the emissions by kg of material, kWh of energy or tkm transported, the internationally recognized Ecoinvent v. 3.3 database has been used.

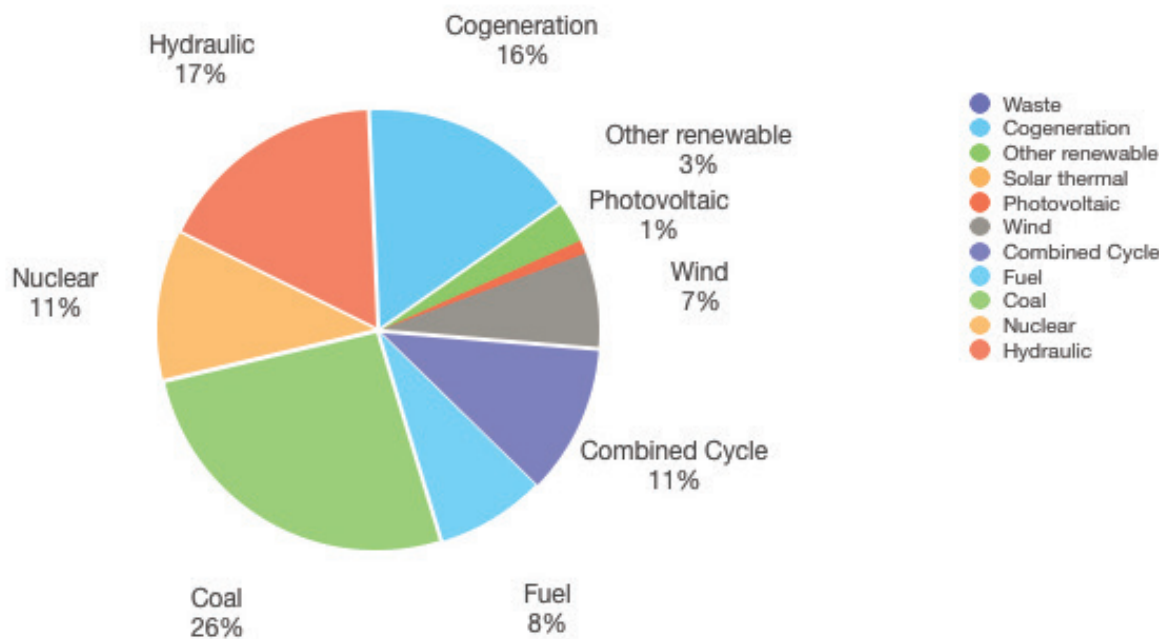
Transport distance from the components supplier to Comexi plant when no specific data is available: 600 km.

Transport of waste at the end of life to the waste manager: 50 km.

Solvent use: Diffuse VOC emission according to R.D. 117/2003 of 31 January, on the limitation of emissions of volatile organic compounds due to the use of solvents in certain activities is 20% of solvent input. Solvent waste is incinerated at user's site. The canalised VOC considered is the maximum authorised by the legislation, 150 mg/m³ of air extraction with recirculation in printing and tunnel machine parts. According to the PCR the use phase consumables' production is excluded from the scope of the EPD®.

End of life scenario: 100% of metal compounds of the machine are recycled and the other components are incinerated.

Figure 1 Use phase electricity production mix.



2.5 Description of the processes and limits of the system

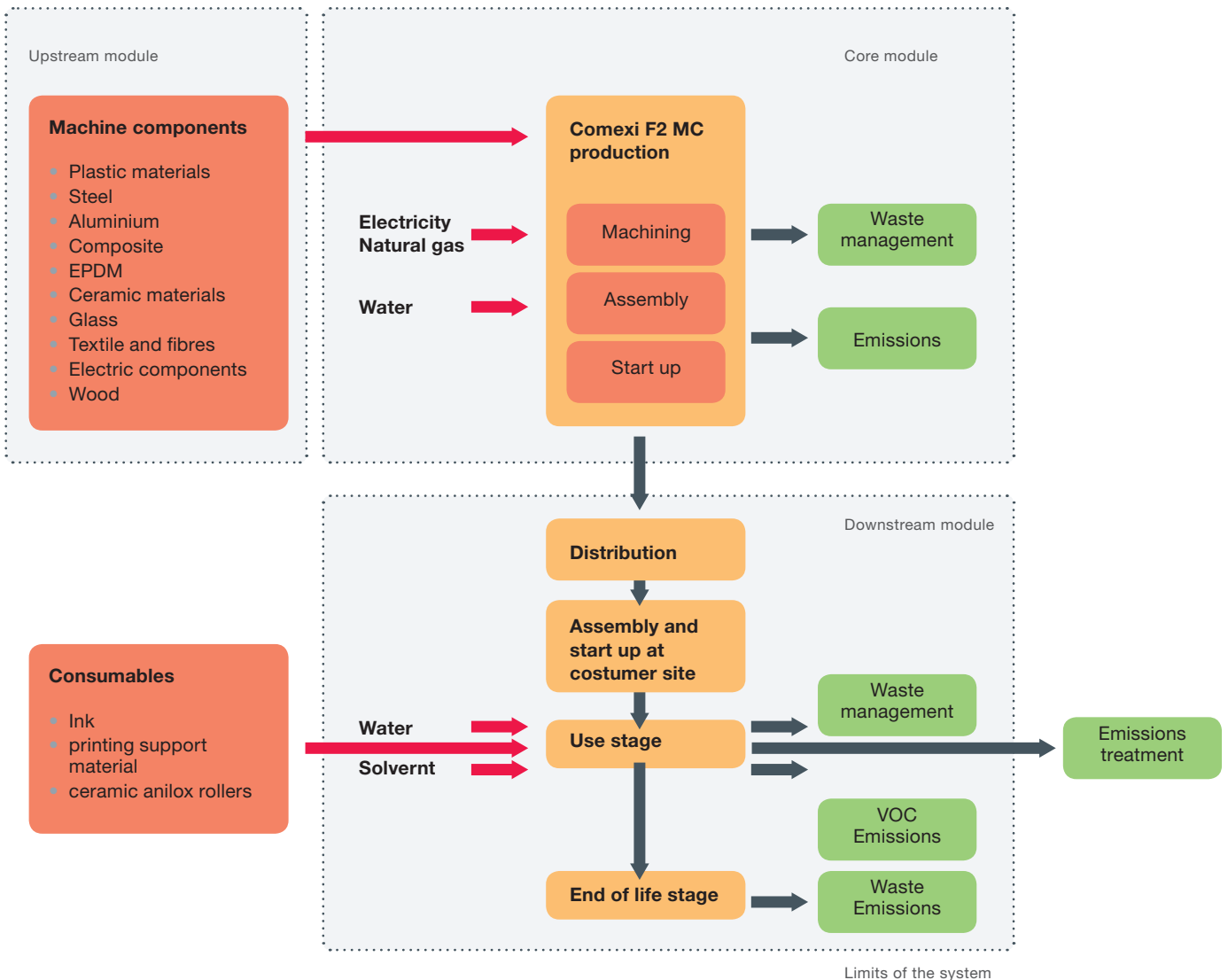
This EPD® has its life cycle stages structured following the indications done in the PCR: Other special-purpose machinery and parts thereof. Initial unit processes studied within the system boundaries are showed in a flowchart (Figure 2). Processes outside dot lines are outside of the systems.

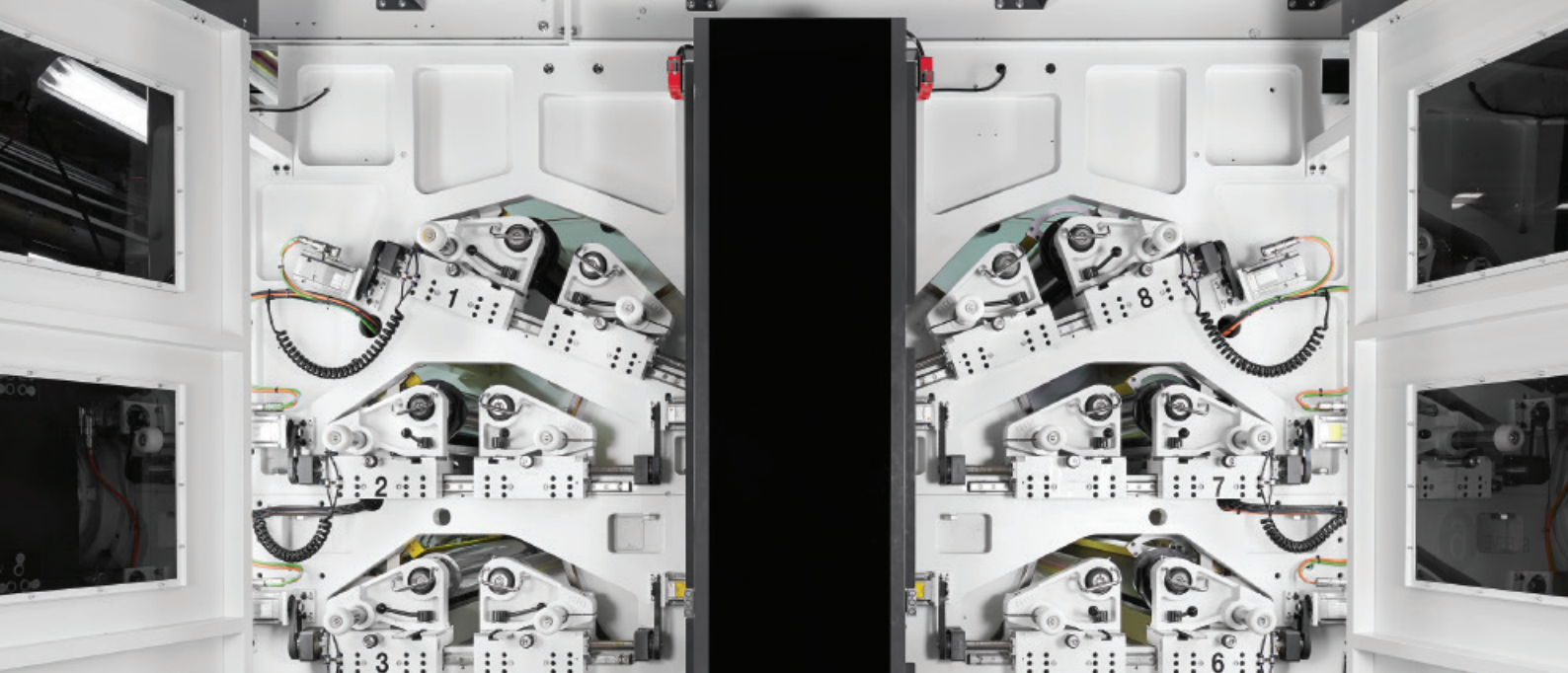
Based in the limits of the system stated in the reference PCR it has not been taken into account the next processes:

- The manufacturing of production equipment, buildings and other capital goods

- Building, maintenance, decommissioning and disposal of service facilities
- Production of use phase chemicals and consumables
- Re-use of product components
- Energy recovery from waste incineration
- Transport of workers from home to the factory
- Emissions treatment system
- Start-up at costumer's site technician transport

Figure 2 Limits of the System and description of the significant processes





2.2.1 Quality of data and allocation

Material inflows necessary for the Comexi F2 MC manufacture, raw materials extraction like metal, plastic, etc., and its secondary transformations (rolled, extruded, etc.) have been considered.

2.5.2 Core module

This module includes the transport of raw materials from the manufacturer to Comexi's manufacturing plant. The real distance and type of truck for every raw material has been introduced.

In this module is also included the energy consumption and water used during the manufacturing process. At the same time, emissions in the facility originated during the natural gas combustion are assessed, as well as the transport and management of waste produced in the factory.

According to the PCR process waste that is deposited in landfill is not included in the system boundaries, but accounted for as an outflow.

The manufacturing process consists on machining and mechanical assembling of press.

2.5.3 Downstream module

The downstream processes include:

- Machine transportation from the factory to the client site
- life time operation of the product
- maintenance during life time
- disassembling and end of life of the product

The average transport scenario has been calculated as weighted means on the base of per cent of purchased Comexi F2 MC in 2016.

The use phase considers the electricity consumption and the natural gas used in the drying process, solvent as cleaner and water as temperature stabilizer. Production of chemicals and consumables used during this phase, like ink, printing support material and ceramic anilox rollers have been excluded, according to the PCR.

The end of life of the machine is established in about 15 years. After this period, companies specialized in buying - selling of second-hand machines fix, rebuild and /or update used machines in order to be reused by a new customer. In the EDP® the consumption during the use phase has been establish by 1200 working hours.

The EPD® considered the machine disassembling and transportation to the waste management. The metal components of the machine are recycled. The rest of waste are incinerated. The impact of this management is considered.

2.5.4 Module D. Potential benefits and loads beyond the limits of the system

Module D has been taken into account. It includes the potential environmental benefit of the recycling/reuse of materials at the end of life and in the manufacturing plant. machines fix, rebuild and /or update used machines in order to be reused by a new customer. In the EPD® the consumption during the use phase has been establish by 1200 working hours.

The EPD® considered the machine disassembling and transportation to the waste management. The metal components of the machine are recycled. The rest of waste are incinerated. The impact of this management is considered.

2.6 Comparison of EPD®s of the same product category

To be able to compare EDP® within this product category, they have to be based on this particular PCR, Other special-purpose machinery and parts thereof.

“Environmental Product Declarations within the same product category from different programs may not be comparable”

“Omissions of life cycle mandatory stages according to this PCR are not allowed”

2.7 EPD® Validity

The EPD® presented here has a validity of three years from the date of publication. In the case of observing changes that represent a worsening in any of the indicators of environmental impact of the life cycle of the older product bigger than 10%, the EPD® should be updated.

3. ENVIRONMENTAL PERFORMANCE RELATED INFORMATION

3.1 Potential impact over the environment

In this section the environmental impact of the life cycle of the product based in PCR *Other special-purpose machinery and parts thereof* is showed.

The impacts indicated in this section refer to the life cycle of one flexographic press Comexi F2 MC of 8 colours (upstream, core and end-of-life processes) and a use phase of 1200 working hours.

The results are presented by modules as follows:

Table 4 Life cycle stages and sub-stages considered

Upstream module	U1. Components manufacturing
Core module	C1. Components transport to manufacturing site
	C2. In-house manufacturing
Downstream module	D1. Distribution
	D2. Use phase
	D3. End of life phase
Avoided impacts from recycling	Module D

Table 5 Potential environmental impact of the life cycle of one Comexi F2 MC

Impact category	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Global warming	kg CO ₂ eq	1,33E+05	2,08E+03	2,37E+04	5,34E+03	1,16E+05	3,41E+03	2,83E+05	-4,58E+04
Ozone layer depletion	kg CFC-11 eq	7,03E-03	4,32E-04	2,73E-03	1,02E-03	1,60E-02	2,04E-04	2,74E-02	-3,41E-03
Acidification of land and water	kg SO ₂ eq	1,29E+03	5,34E+00	1,21E+02	4,83E+01	5,09E+02	6,94E+00	1,99E+03	-1,83E+02
Eutrophication	kg (PO ₄) ³⁻ eq	6,75E+02	1,07E+00	2,00E+01	5,85E+00	1,97E+02	2,73E+00	9,02E+02	-7,08E+01
Photochemical ozone creation	kg ethene eq	8,16E+01	3,24E-01	9,80E+01	1,82E+00	2,21E+03	2,24E-01	2,39E+03	-3,93E+01
Human Health	DALY ²	2,83E-01	1,32E-03	1,55E-02	6,54E-03	9,22E-02	1,93E-03	4,01E-01	-9,15E-02

² Disability –Adjusted Life Years. Calculated as the sum of the Years of Life Lost (YLL) due to premature mortality in the population and the Years Lost due to Disability (YLD) for people living with the health condition or its consequences.

3.2 Use of resources

Table 6 Use of resources of the life cycle of one Comexi F2 MC

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Non-renewable resources: Material resources	kg	1,68E+05	4,55E+03	7,40E+03	8,31E+03	5,98E+04	7,31E+03	2,56E+05	-8,43E+04
Non-renewable resources: Energy resources	MJ	1,68E+06	3,74E+04	4,29E+05	9,05E+04	2,02E+06	1,76E+04	4,28E+06	-5,68E+05
Renewable resources: Material resources	kg	1,31E+04	1,62E+01	1,52E+02	4,02E+01	4,74E+03	5,45E+00	1,81E+04	-6,33E+02
Renewable resources: Energy resources	MJ	3,06E+05	5,57E+02	6,90E+04	1,58E+03	2,04E+05	1,89E+02	5,82E+05	-8,18E+03
Secondary resources: Material resources	kg	-	-	-	-	-	-	-	-
Secondary resources: Energy resources	MJ	-	-	-	-	-	-	-	-
Recovered energy flows	MJ	-	-	-	-	-	-	-	-
Total amount of water	m ³	8,02E+02	8,27E+00	2,16E+02	1,74E+01	1,12E+04	9,56E+00	1,23E+04	-1,89E+02
Direct amount of water used by the core process	m ³	-	-	1,24E+02	-	-	-	1,24E+02	-
Electricity consumption during use phase	kWh	-	-	-	-	1,20E+05	-	1,20E+05	-

3.3 Other environmental information (waste and output flows)

Table 7 Other environmental indicators of the life cycle of one Comexi F2 MC

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Material subject for recycling	kg	-	-	8,12E+03	-	-	4,03E+04	4,85E+04	-
Hazardous waste	kg	7,73E+01	2,70E-01	3,95E+01	6,40E-01	9,35E+00	1,24E-01	1,27E+02	-6,37E+00
Non-hazardous waste	kg	3,06E+04	3,04E+03	2,14E+03	5,06E+03	4,34E+03	1,54E+03	4,67E+04	-7,53E+03
Noise emissions	dBA	-	-	-	-	<85	-	-	-
Vibration emissions	Hz	-	-	-	-	-	-	-	-
Electromagnetic wave emissions	μT	-	-	-	-	-	-	-	-



4. RESULTS INTERPRETATION

As we can see in table 8, the environmental impact of the life cycle of one Comexi F2 MC machine is dominated by the use phase and the materials that conform the machine for all indicators. Indeed, the use stage (D2) represents up to 92% (Photochemical oxidation) of the impact and components manufacturing (U1) up to 75% (Eutrophication) of the potential impact of the whole life cycle.

The manufacturing process (C2) is relevant for categories like global warming and ozone layer depletion, because of the energy consumption, with a contribution between 2% and 10% for Eutrophication and Ozone Layer Depletion respectively.

The transport of the product to the customer (D1) presents low impact, representing at much 4% (Ozone layer depletion) of the life cycle product impact. End of life stage (D3) does not present a significant impact, with a contribution to the whole life cycle impact of at much 1,2% (Global warming), as it is observed for the components transport to Comexi's site (C1), with a contribution of maximum 1,6% of the impact. Module D shows that the avoided impact from end of life stage product recycling is at least 2%. For the Human Health impact category, 23% of the impact is potentially avoided.

Table 8 Contribution of each processes to the potential environmental impact of one Comexi F2 MC machine

Environmental category	Units	U1	C1	C2	D1	D2	D3	Total	Module D
Global warming	kg CO ₂ eq	47%	0,7%	8%	2%	41%	1,2%	100%	-16%
Ozone layer depletion	kg CFC-11 eq	26%	1,6%	10%	4%	58%	0,7%	100%	-12%
Acidification of land and water	kg SO ₂ eq	65%	0,27%	6%	2,4%	26%	0,3%	100%	-9%
Eutrophication	kg (PO ₄) ³⁻ eq	75%	0,12%	2%	0,6%	22%	0,3%	100%	-8%
Photochemical ozone creation	kg ethene eq	3%	0,01%	4%	0,08%	92%	0,01%	100%	-2%
Human Health	DALY	71%	0,3%	4%	1,6%	23%	0,5%	100%	-23%

5. DIFFERENCES WITH OTHER VERSIONS OF THE EPD®

This EPD® is the first version, so no older versions exist.

6. VERIFICATION

Product Category Rules (PCR) review was conducted by:

The Technical Committee of the International EPD® System. Chair: Massimo Marino.
Contact via info@environdec.com.

Third party verifier:

Marcel Gómez Ferrer
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Phone: 0034630643593

Accredited by:

The International EPD System®,
Operated by EPD International AB
www.environdec.com
Sweden

Independent verification of the declaration and data, according to ISO 14025:2006:

EPD® process certification EPD® verification

7. REFERENCES

GENERAL PROGRAMME INSTRUCTIONS for Environmental Product Declarations, EPD. Version 2.01 updated in 18-09-2013
ISO 14025:2006 Environmental labels and declarations-Type III Environmental Declarations-Principles and procedures
ISO 14040:2006 Environmental management-Life Cycle Assessment-Principles and framework
ISO 14044:2006 Environmental management-Life Cycle Assessment-Requirements and guidelines
PCR UN CPC 449 Other special-purpose machinery and parts thereof. 2010:08 version 3.01
COMEXI, 2017. Life Cycle Assessment of Comexi F2 MC Flexographic press

8. ANNEX

Comexi operates in a global market. The results in the present EPD represent 2016 scenario. In order to adapt the environmental profile to the client's site, the results are also presented per continent. The electricity mix during use phase and the distribution distance is specific for each case. Moreover a 100% renewable energy use scenario has been included.

8.1 Results for Asia



Table 9 Potential environmental impact of the life cycle of one Comexi F2 MC in Asia

Impact category	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Global warming	kg CO ₂ eq	1,33E+05	2,08E+03	2,37E+04	1,13E+04	1,79E+05	3,41E+03	3,52E+05	-4,58E+04
Ozone layer depletion	kg CFC-11 eq	7,03E-03	4,32E-04	2,73E-03	2,07E-03	1,29E-02	2,04E-04	2,54E-02	-3,41E-03
Acidification of land and water	kg SO ₂ eq	1,29E+03	5,34E+00	1,21E+02	1,12E+02	8,38E+02	6,94E+00	2,38E+03	-1,83E+02
Eutrophication	kg (PO ₄) ³⁻ eq	6,75E+02	1,07E+00	2,00E+01	1,35E+01	1,98E+02	2,73E+00	9,11E+02	-7,08E+01
Photochemical ozone creation	kg ethene eq	8,16E+01	3,24E-01	9,80E+01	4,13E+00	2,22E+03	2,24E-01	2,41E+03	-3,93E+01
Human Health	DALY	2,83E-01	1,32E-03	1,55E-02	1,49E-02	2,63E-01	1,93E-03	5,80E-01	-9,15E-02

Table 10 Use of resources of the life cycle of one Comexi F2 MC in Asia

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Non-renewable resources: Material resources	kg	1,68E+05	4,55E+03	7,40E+03	1,63E+04	8,18E+04	7,31E+03	2,86E+05	-8,43E+04
Non-renewable resources: Energy resources	MJ	1,68E+06	3,74E+04	4,29E+05	1,87E+05	2,24E+06	1,76E+04	4,59E+06	-5,68E+05
Renewable resources: Material resources	kg	1,31E+04	1,62E+01	1,52E+02	8,53E+01	2,44E+03	5,45E+00	1,58E+04	-6,33E+02
Renewable resources: Energy resources	MJ	3,06E+05	5,57E+02	6,90E+04	3,16E+03	1,24E+05	1,89E+02	5,03E+05	-8,18E+03
Secondary resources: Material resources	kg	-	-	-	-	-	-	-	-
Secondary resources: Energy resources	MJ	-	-	-	-	-	-	-	-
Recovered energy flows	MJ	-	-	-	-	-	-	-	-
Total amount of water	m ³	8,02E+02	8,27E+00	2,16E+02	3,55E+01	1,13E+04	9,56E+00	1,24E+04	-1,89E+02
Direct amount of water used by the core process	m ³	-	-	1,24E+02	-	-	-	1,24E+02	-
Electricity consumption during use phase	kWh	-	-	-	-	1,20E+05	-	1,20E+05	-

Table 11 Other environmental indicators of the life cycle of one Comexi F2 MC in Asia

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Material subject for recycling	kg	-	-	8,12E+03	-	-	4,03E+04	4,85E+04	-
Hazardous waste	kg	7,73E+01	2,70E-01	3,95E+01	1,29E+00	8,05E+00	1,24E-01	1,27E+02	-6,37E+00
Non-hazardous waste	kg	3,06E+04	3,04E+03	2,14E+03	9,64E+03	4,10E+03	1,54E+03	5,11E+04	-7,53E+03
Noise emissions	dBA	-	-	-	-	<85	-	-	-
Vibration emissions	Hz	-	-	-	-	-	-	-	-
Electromagnetic wave emissions	μT	-	-	-	-	-	-	-	-

DALY = Disability Adjusted Life Years = Years of life lost by death (mortality) or disease (morbidity)

8.2 Results for Africa



Table 12 Potential environmental impact of the life cycle of one Comexi F2 MC in Africa

Impact category	Units	Upstream module	Core module	Downstream module			Total	Module D	
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)			D3. End of life phase
Global warming	kg CO ₂ eq	1,33E+05	2,08E+03	2,37E+04	3,80E+03	1,90E+05	3,41E+03	3,55E+05	-4,58E+04
Ozone layer depletion	kg CFC-11 eq	7,03E-03	4,32E-04	2,73E-03	6,04E-04	1,14E-02	2,04E-04	2,24E-02	-3,41E-03
Acidification of land and water	kg SO ₂ eq	1,29E+03	5,34E+00	1,21E+02	7,91E+01	1,55E+03	6,94E+00	3,06E+03	-1,83E+02
Eutrophication	kg (PO ₄) ³⁻ eq	6,75E+02	1,07E+00	2,00E+01	8,17E+00	4,24E+02	2,73E+00	1,13E+03	-7,08E+01
Photochemical ozone creation	kg ethene eq	8,16E+01	3,24E-01	9,80E+01	2,57E+00	2,24E+03	2,24E-01	2,42E+03	-3,93E+01
Human Health	DALY	2,83E-01	1,32E-03	1,55E-02	8,73E-03	1,38E-01	1,93E-03	4,49E-01	-9,15E-02

Table 13 Use of resources of the life cycle of one Comexi F2 MC in Africa

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Non-renewable resources: Material resources	kg	1,68E+05	4,55E+03	7,40E+03	1,56E+03	1,05E+05	7,31E+03	2,94E+05	-8,43E+04
Non-renewable resources: Energy resources	MJ	1,68E+06	3,74E+04	4,29E+05	5,71E+04	2,60E+06	1,76E+04	4,83E+06	-5,68E+05
Renewable resources: Material resources	kg	1,31E+04	1,62E+01	1,52E+02	2,69E+01	1,50E+03	5,45E+00	1,48E+04	-6,33E+02
Renewable resources: Energy resources	MJ	3,06E+05	5,57E+02	6,90E+04	1,31E+03	6,71E+04	1,89E+02	4,44E+05	-8,18E+03
Secondary resources: Material resources	kg	-	-	-	-	-	-	-	-
Secondary resources: Energy resources	MJ	-	-	-	-	-	-	-	-
Recovered energy flows	MJ	-	-	-	-	-	-	-	-
Total amount of water	m ³	8,02E+02	8,27E+00	2,16E+02	7,47E+00	1,13E+04	9,56E+00	1,23E+04	-1,89E+02
Direct amount of water used by the core process	m ³	-	-	1,24E+02	-	-	-	1,24E+02	-
Electricity consumption during use phase	kWh	-	-	-	-	1,20E+05	-	1,20E+05	-

Table 14 Other environmental indicators of the life cycle of one Comexi F2 MC in Africa

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Material subject for recycling	kg	-	-	8,12E+03	-	-	4,03E+04	4,85E+04	-
Hazardous waste	kg	7,73E+01	2,70E-01	3,95E+01	3,85E-01	5,56E+00	1,24E-01	1,23E+02	-6,37E+00
Non-hazardous waste	kg	3,06E+04	3,04E+03	2,14E+03	5,76E+01	4,28E+03	1,54E+03	4,17E+04	-7,53E+03
Noise emissions	dBA	-	-	-	-	<85	-	-	-
Vibration emissions	Hz	-	-	-	-	-	-	-	-
Electromagnetic wave emissions	μT	-	-	-	-	-	-	-	-

8.3 Results for Europe



Table 15 Potential environmental impact of the life cycle of one Comexi F2 MC in Europe

Impact category	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Global warming	kg CO ₂ eq	1,33E+05	2,08E+03	2,37E+04	5,59E+03	1,05E+05	3,41E+03	2,73E+05	-4,58E+04
Ozone layer depletion	kg CFC-11 eq	7,03E-03	4,32E-04	2,73E-03	1,11E-03	1,64E-02	2,04E-04	2,79E-02	-3,41E-03
Acidification of land and water	kg SO ₂ eq	1,29E+03	5,34E+00	1,21E+02	1,53E+01	3,74E+02	6,94E+00	1,82E+03	-1,83E+02
Eutrophication	kg (PO ₄) ³⁻ eq	6,75E+02	1,07E+00	2,00E+01	3,14E+00	2,70E+02	2,73E+00	9,72E+02	-7,08E+01
Photochemical ozone creation	kg ethene eq	8,16E+01	3,24E-01	9,80E+01	9,04E-01	2,20E+03	2,24E-01	2,39E+03	-3,93E+01
Human Health	DALY	2,83E-01	1,32E-03	1,55E-02	3,82E-03	5,52E-02	1,93E-03	3,61E-01	-9,15E-02

Table 16 Use of resources of the life cycle of one Comexi F2 MC in Europe

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Non-renewable resources: Material resources	kg	1,68E+05	4,55E+03	7,40E+03	1,18E+04	6,58E+04	7,31E+03	2,65E+05	-8,43E+04
Non-renewable resources: Energy resources	MJ	1,68E+06	3,74E+04	4,29E+05	9,77E+04	2,11E+06	1,76E+04	4,38E+06	-5,68E+05
Renewable resources: Material resources	kg	1,31E+04	1,62E+01	1,52E+02	4,39E+01	4,11E+03	5,45E+00	1,74E+04	-6,33E+02
Renewable resources: Energy resources	MJ	3,06E+05	5,57E+02	6,90E+04	1,32E+03	1,62E+05	1,89E+02	5,39E+05	-8,18E+03
Secondary resources: Material resources	kg	-	-	-	-	-	-	-	-
Secondary resources: Energy resources	MJ	-	-	-	-	-	-	-	-
Recovered energy flows	MJ	-	-	-	-	-	-	-	-
Total amount of water	m ³	8,02E+02	8,27E+00	2,16E+02	2,18E+01	1,13E+04	9,56E+00	1,23E+04	-1,89E+02
Direct amount of water used by the core process	m ³	-	-	1,24E+02	-	-	-	1,24E+02	-
Electricity consumption during use phase	kWh	-	-	-	-	1,20E+05	-	1,20E+05	-

Table 17 Other environmental indicators of the life cycle of one Comexi F2 MC in Europe

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Material subject for recycling	kg	-	-	8,12E+03	-	-	4,03E+04	4,85E+04	-
Hazardous waste	kg	7,73E+01	2,70E-01	3,95E+01	6,87E-01	1,37E+01	1,24E-01	1,32E+02	-6,37E+00
Non-hazardous waste	kg	3,06E+04	3,04E+03	2,14E+03	7,84E+03	4,70E+03	1,54E+03	4,99E+04	-7,53E+03
Noise emissions	dBA	-	-	-	-	<85	-	-	-
Vibration emissions	Hz	-	-	-	-	-	-	-	-
Electromagnetic wave emissions	μT	-	-	-	-	-	-	-	-

8.4 Results for South America

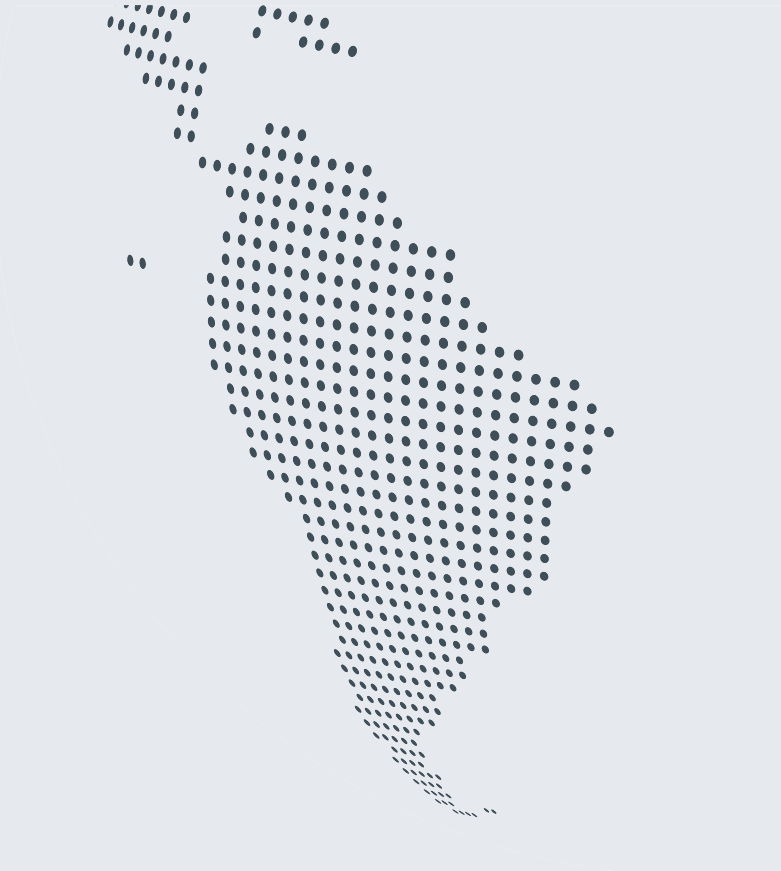


Table 18 Potential environmental impact of the life cycle of one Comexi F2 MC in South America

Impact category	Units	Upstream module	Core module	Downstream module			Total	Module D	
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)			D3. End of life phase
Global warming	kg CO ₂ eq	1,33E+05	2,08E+03	2,37E+04	6,01E+03	9,15E+04	3,41E+03	2,60E+05	-4,58E+04
Ozone layer depletion	kg CFC-11 eq	7,03E-03	4,32E-04	2,73E-03	9,56E-04	1,39E-02	2,04E-04	2,53E-02	-3,41E-03
Acidification of land and water	kg SO ₂ eq	1,29E+03	5,34E+00	1,21E+02	1,25E+02	3,68E+02	6,94E+00	1,92E+03	-1,83E+02
Eutrophication	kg (PO ₄) ³⁻ eq	6,75E+02	1,07E+00	2,00E+01	1,29E+01	1,23E+02	2,73E+00	8,35E+02	-7,08E+01
Photochemical ozone creation	kg ethene eq	8,16E+01	3,24E-01	9,80E+01	4,07E+00	2,21E+03	2,24E-01	2,39E+03	-3,93E+01
Human Health	DALY	2,83E-01	1,32E-03	1,55E-02	1,38E-02	1,37E-01	1,93E-03	4,53E-01	-9,15E-02

Table 19 Use of resources of the life cycle of one Comexi F2 MC in South America

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Non-renewable resources: Material resources	kg	1,68E+05	4,55E+03	7,40E+03	2,46E+03	4,82E+04	7,31E+03	2,38E+05	-8,43E+04
Non-renewable resources: Energy resources	MJ	1,68E+06	3,74E+04	4,29E+05	9,04E+04	1,51E+06	1,76E+04	3,76E+06	-5,68E+05
Renewable resources: Material resources	kg	1,31E+04	1,62E+01	1,52E+02	4,26E+01	9,30E+03	5,45E+00	2,26E+04	-6,33E+02
Renewable resources: Energy resources	MJ	3,06E+05	5,57E+02	6,90E+04	2,07E+03	4,47E+05	1,89E+02	8,24E+05	-8,18E+03
Secondary resources: Material resources	kg	-	-	-	-	-	-	-	-
Secondary resources: Energy resources	MJ	-	-	-	-	-	-	-	-
Recovered energy flows	MJ	-	-	-	-	-	-	-	-
Total amount of water	m ³	8,02E+02	8,27E+00	2,16E+02	1,18E+01	1,12E+04	9,56E+00	1,22E+04	-1,89E+02
Direct amount of water used by the core process	m ³	-	-	1,24E+02	-	-	-	1,24E+02	-
Electricity consumption during use phase	kWh	-	-	-	-	1,20E+05	-	1,20E+05	-

Table 20 Other environmental indicators of the life cycle of one Comexi F2 MC in South America

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Material subject for recycling	kg	-	-	8,12E+03	-	-	4,03E+04	4,85E+04	-
Hazardous waste	kg	7,73E+01	2,70E-01	3,95E+01	6,09E-01	6,73E+00	1,24E-01	1,25E+02	-6,37E+00
Non-hazardous waste	kg	3,06E+04	3,04E+03	2,14E+03	9,13E+01	4,67E+03	1,54E+03	4,21E+04	-7,53E+03
Noise emissions	dBA	-	-	-	-	<85	-	-	-
Vibration emissions	Hz	-	-	-	-	-	-	-	-
Electromagnetic wave emissions	μT	-	-	-	-	-	-	-	-

8.5 Results for North America



Table 21 Potential environmental impact of the life cycle of one Comexi F2 MC in North America

Impact category	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Global warming	kg CO ₂ eq	1,33E+05	2,08E+03	2,37E+04	4,91E+03	1,17E+05	3,41E+03	2,84E+05	-4,58E+04
Ozone layer depletion	kg CFC-11 eq	7,03E-03	4,32E-04	2,73E-03	7,81E-04	1,59E-02	2,04E-04	2,71E-02	-3,41E-03
Acidification of land and water	kg SO ₂ eq	1,29E+03	5,34E+00	1,21E+02	1,02E+02	4,04E+02	6,94E+00	1,93E+03	-1,83E+02
Eutrophication	kg (PO ₄) ³⁻ eq	6,75E+02	1,07E+00	2,00E+01	1,06E+01	3,01E+02	2,73E+00	1,01E+03	-7,08E+01
Photochemical ozone creation	kg ethene eq	8,16E+01	3,24E-01	9,80E+01	3,33E+00	2,21E+03	2,24E-01	2,39E+03	-3,93E+01
Human Health	DALY	2,83E-01	1,32E-03	1,55E-02	1,13E-02	1,96E-01	1,93E-03	5,09E-01	-9,15E-02

Table 22 Use of resources of the life cycle of one Comexi F2 MC in North America

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Non-renewable resources: Material resources	kg	1,68E+05	4,55E+03	7,40E+03	2,01E+03	6,55E+04	7,31E+03	2,55E+05	-8,43E+04
Non-renewable resources: Energy resources	MJ	1,68E+06	3,74E+04	4,29E+05	7,38E+04	2,09E+06	1,76E+04	4,33E+06	-5,68E+05
Renewable resources: Material resources	kg	1,31E+04	1,62E+01	1,52E+02	3,48E+01	1,49E+03	5,45E+00	1,48E+04	-6,33E+02
Renewable resources: Energy resources	MJ	3,06E+05	5,57E+02	6,90E+04	1,69E+03	1,25E+05	1,89E+02	5,02E+05	-8,18E+03
Secondary resources: Material resources	kg	-	-	-	-	-	-	-	-
Secondary resources: Energy resources	MJ	-	-	-	-	-	-	-	-
Recovered energy flows	MJ	-	-	-	-	-	-	-	-
Total amount of water	m ³	8,02E+02	8,27E+00	2,16E+02	9,66E+00	1,13E+04	9,56E+00	1,24E+04	-1,89E+02
Direct amount of water used by the core process	m ³	-	-	1,24E+02	-	-	-	1,24E+02	-
Electricity consumption during use phase	kWh	-	-	-	-	1,20E+05	-	1,20E+05	-

Table 23 Other environmental indicators of the life cycle of one Comexi F2 MC in North America

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Material subject for recycling	kg	-	-	8,12E+03	-	-	4,03E+04	4,85E+04	-
Hazardous waste	kg	7,73E+01	2,70E-01	3,95E+01	4,97E-01	1,19E+01	1,24E-01	1,30E+02	-6,37E+00
Non-hazardous waste	kg	3,06E+04	3,04E+03	2,14E+03	7,45E+01	4,63E+03	1,54E+03	4,20E+04	-7,53E+03
Noise emissions	dBA	-	-	-	-	<85	-	-	-
Vibration emissions	Hz	-	-	-	-	-	-	-	-
Electromagnetic wave emissions	μT	-	-	-	-	-	-	-	-

8.6 Results for Oceania



Table 24 Potential environmental impact of the life cycle of one Comexi F2 MC in Oceania

Impact category	Units	Upstream module	Core module	Downstream module			Total	Module D	
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)			D3. End of life phase
Global warming	kg CO ₂ eq	2,08E+03	2,37E+04	1,01E+04	1,67E+05	3,41E+03	3,39E+05	-4,58E+04	-4,58E+04
Ozone layer depletion	kg CFC-11 eq	4,32E-04	2,73E-03	1,60E-03	1,13E-02	2,04E-04	2,33E-02	-3,41E-03	-3,41E-03
Acidification of land and water	kg SO ₂ eq	5,34E+00	1,21E+02	2,10E+02	5,78E+02	6,94E+00	2,21E+03	-1,83E+02	-1,83E+02
Eutrophication	kg (PO ₄) ³⁻ eq	1,07E+00	2,00E+01	2,17E+01	7,44E+02	2,73E+00	1,47E+03	-7,08E+01	-7,08E+01
Photochemical ozone creation	kg ethene eq	3,24E-01	9,80E+01	6,82E+00	2,21E+03	2,24E-01	2,40E+03	-3,93E+01	-3,93E+01
Human Health	DALY	1,32E-03	1,55E-02	2,31E-02	7,00E-02	1,93E-03	3,95E-01	-9,15E-02	-9,15E-02

Table 25 Use of resources of the life cycle of one Comexi F2 MC in Oceania

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Non-renewable resources: Material resources	kg	1,68E+05	4,55E+03	7,40E+03	4,13E+03	1,15E+05	7,31E+03	3,06E+05	-8,43E+04
Non-renewable resources: Energy resources	MJ	1,68E+06	3,74E+04	4,29E+05	1,51E+05	2,23E+06	1,76E+04	4,54E+06	-5,68E+05
Renewable resources: Material resources	kg	1,31E+04	1,62E+01	1,52E+02	7,13E+01	1,54E+03	5,45E+00	1,49E+04	-6,33E+02
Renewable resources: Energy resources	MJ	3,06E+05	5,57E+02	6,90E+04	3,47E+03	7,69E+04	1,89E+02	4,56E+05	-8,18E+03
Secondary resources: Material resources	kg	-	-	-	-	-	-	-	-
Secondary resources: Energy resources	MJ	-	-	-	-	-	-	-	-
Recovered energy flows	MJ	-	-	-	-	-	-	-	-
Total amount of water	m ³	8,02E+02	8,27E+00	2,16E+02	1,98E+01	1,15E+04	9,56E+00	1,25E+04	-1,89E+02
Direct amount of water used by the core process	m ³	-	-	1,24E+02	-	-	-	1,24E+02	-
Electricity consumption during use phase	kWh	-	-	-	-	1,20E+05	-	1,20E+05	-

Table 26 Other environmental indicators of the life cycle of one Comexi F2 MC in Oceania

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Material subject for recycling	kg	-	-	8,12E+03	-	-	4,03E+04	4,85E+04	-
Hazardous waste	kg	7,73E+01	2,70E-01	3,95E+01	1,02E+00	9,29E+00	1,24E-01	1,27E+02	-6,37E+00
Non-hazardous waste	kg	3,06E+04	3,04E+03	2,14E+03	1,53E+02	3,40E+03	1,54E+03	4,09E+04	-7,53E+03
Noise emissions	dBA	-	-	-	-	<85	-	-	-
Vibration emissions	Hz	-	-	-	-	-	-	-	-
Electromagnetic wave emissions	μT	-	-	-	-	-	-	-	-

8.7 Results for 100% renewable energy



Table 27 Potential environmental impact of the life cycle of one Comexi F2 MC in 100% renewable energy use phase scenario

Impact category	Units	Upstream module	Core module	Downstream module			Total	Module D	
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)			D3. End of life phase
Global warming	kg CO ₂ eq	1,33E+05	2,08E+03	2,37E+04	5,34E+03	4,30E+04	3,41E+03	2,10E+05	-4,58E+04
Ozone layer depletion	kg CFC-11 eq	7,03E-03	4,32E-04	2,73E-03	1,02E-03	9,92E-03	2,04E-04	2,13E-02	-3,41E-03
Acidification of land and water	kg SO ₂ eq	1,29E+03	5,34E+00	1,21E+02	4,83E+01	1,15E+02	6,94E+00	1,59E+03	-1,83E+02
Eutrophication	kg (PO ₄) ³⁻ eq	6,75E+02	1,07E+00	2,00E+01	5,85E+00	3,92E+01	2,73E+00	7,44E+02	-7,08E+01
Photochemical ozone creation	kg ethene eq	8,16E+01	3,24E-01	9,80E+01	1,82E+00	2,19E+03	2,24E-01	2,38E+03	-3,93E+01
Human Health	DALY	2,83E-01	1,32E-03	1,55E-02	6,54E-03	2,30E-02	1,93E-03	3,32E-01	-9,15E-02

Table 28 Use of resources of the life cycle of one Comexi F2 MC in 100% renewable energy use phase scenario

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Non-renewable resources: Material resources	kg	1,68E+05	4,55E+03	7,40E+03	8,31E+03	2,31E+04	7,31E+03	2,19E+05	-8,43E+04
Non-renewable resources: Energy resources	MJ	1,68E+06	3,74E+04	4,29E+05	9,05E+04	8,49E+05	1,76E+04	3,10E+06	-5,68E+05
Renewable resources: Material resources	kg	1,31E+04	1,62E+01	1,52E+02	4,02E+01	1,21E+03	5,45E+00	1,45E+04	-6,33E+02
Renewable resources: Energy resources	MJ	3,06E+05	5,57E+02	6,90E+04	1,58E+03	5,07E+05	1,89E+02	8,85E+05	-8,18E+03
Secondary resources: Material resources	kg	-	-	-	-	-	-	-	-
Secondary resources: Energy resources	MJ	-	-	-	-	-	-	-	-
Recovered energy flows	MJ	-	-	-	-	-	-	-	-
Total amount of water	m ³	8,02E+02	8,27E+00	2,16E+02	1,74E+01	1,09E+04	9,56E+00	1,20E+04	-1,89E+02
Direct amount of water used by the core process	m ³	-	-	1,24E+02	-	-	-	1,24E+02	-
Electricity consumption during use phase	kWh	-	-	-	-	1,20E+05	-	1,20E+05	-

Table 29 Other environmental indicators of the life cycle of one Comexi F2 MC in 100% renewable energy use phase scenario

Indicator	Units	Upstream module	Core module	Downstream module				Total	Module D
		U1. Components manufacturing	C1. Components transport to manufacturing site	C2. In-house manufacturing	D1. Distribution	D2. Use phase (1200 h)	D3. End of life phase		
Material subject for recycling	kg	-	-	8,12E+03	-	-	4,03E+04	4,85E+04	-
Hazardous waste	kg	7,73E+01	2,70E-01	3,95E+01	6,40E-01	4,01E+00	1,24E-01	1,22E+02	-6,37E+00
Non-hazardous waste	kg	3,06E+04	3,04E+03	2,14E+03	5,06E+03	3,73E+03	1,54E+03	4,61E+04	-7,53E+03
Noise emissions	dBA	-	-	-	-	<85	-	-	-
Vibration emissions	Hz	-	-	-	-	-	-	-	-
Electromagnetic wave emissions	μT	-	-	-	-	-	-	-	-



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CERTIFICATE

EPD REGISTRATION

This document is to confirm that

**COMEXI GROUP
INDUSTRIES S.A.U.**

has published an Environmental Product Declaration for

COMEXI F2 MC FLEXO PRESS

with registration number S-P-01360
in the International EPD® System.

The EPD has been developed in accordance with ISO 14025, the General Programme Instructions for the International EPD® System and the reference PCR 2010:08. Verification was performed by Manfred Russ.

This certificate is valid from 2018-08-23 until 2023-08-05, or until the EPD is de-registered and no longer published at www.environdec.com.



KRISTIAN JELSE
Secretariat of the International EPD® System
Gothenburg, Sweden, 2018-08-24