From:
Nice S.p.A.

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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Environmental Product Declaration

In accordance with ISO 14025 for:

Era Inn Smart S; Era Mat MA

Gear motor for blinds and shutter automation

An EPD should provide current information and may be updated if conditions change. The stated validity is therfore subject to the continued registration and publication at www.environdec.com

Company information

A world without barriers.

This is the aspiration, the *vision* of Nice, an Italian multinational company and international leader in the **Home Automation**, **Home Security** and **Smart Home** sectors.

A *mission* that aims to improve people's quality of life by **simplifying everyday movements** in total safety and maximum comfort, for a 100% living space.

The Nice world

Founded in 1993 in Oderzo (Treviso) by Lauro Buoro, current Chairman, Nice designs, manufactures and commercialises integrated and connected solutions for applications in residential, commercial and industrial contexts, in the field of:

- Smart Home
- Smart Home Security
- Solar Shading automations
- Gate & Garage Doors automations
- Access control

Today Nice count on an organization of more than 3,000 people on 5 continents, with a rich background of competences and different cultures, as well as 16 R&D centers (Italy, Germany, Poland, Brazil, USA, South Africa Canada, India, Russia, China) and 15 production plants (Germany, Italy, Poland, Brazil, USA, Australia, South Africa and Canada) serving its partners and customers in over 100 countries worldwide.

Thanks to its global presence, Nice contributes to promoting the excellence, style and know-how of *Made in Italy* in the world with the high quality of its Home Automation solutions: products that skilfully combine technology, design, innovation and ease of use.

The value of Sustainability – Nice*Love*Earth

For Nice sustainability means ensuring comfort and wellbeing, simplifying people's daily gestures, thanks to the quality and advanced technology of its products, which reduce the environmental impact of living spaces.

For people

Nice is actively committed to improving people's quality of life, making it more sustainable, by developing solutions that optimise the management of natural light and heat. Well-being is a top priority for Nice, thanks to the solutions for humidity control, intelligent heating and cooling, air quality measurement, carbon monoxide detection and notification in case of dangerous situations, in order to always guarantee the right environmental conditions to protect the well-being of people living in the home.

For products

Nice is committed to lowering the environmental impact of its products, following ecodesign principles, reducing the energy consumption of home automations and using recycled materials. The packaging of the products is made of natural cardboard, 100% recyclable, all plastic parts have been removed and instructions are available in digital format. Furthermore, in a circular economy perspective, Nice works to limit the production of industrial waste, encouraging recovery systems

For buildings

Nice technology makes life for individuals and communities more connected, easier and safer, ensuring greater well-being inside buildings. The application of Nice solutions contributes to making buildings sustainable, minimising the environmental impact of our homes, promoting energy efficiency through intelligent control of heating, cooling, lighting and monitoring of electrical loads to reduce consumption. Nice is a facilitator of simple daily gestures that can have a great impact on the entire planet and encourage the green evolution of buildings.

NiceLoveEarth

Nice Innovation

Nice continuously invests in its 16 research and development centres located in **Italy**, **Poland**, **Germany**, **Brazil**, **USA**, **Canada**, **South Africa, India and China**. This is where the international R&D team operates, made up of highly specialized professionals who, in addition to performing rigorous and accurate tests to ensure the highest standards of quality and safety, work constantly to study, develop and implement cutting-edge solutions able of meeting, and anticipating market demands.

*"Human capital - declares **Lauro Buoro, Chairman and Founder of Nice** - is a fundamental asset for the development and expansion strategy of our company. Thanks to the excellent professionals who work in Nice and to their ideas, we create innovation to facilitate even the smallest daily gestures".*

NiceLoveEarth

Products information

The Era Inn Smart gear motor is a tubular motor with electronic limit switch, practical dry contact and BusT4 inputs on the motor head. The declaration refers to the S size model, with a 35 mm diameter. Era Inn Smart is designed for minimum vibrations and a silent operation, with the possibility of setting up and down movement durations and to activate the obstacle detection function when both opening and closing.

The Era Mat MA gear motor is a tubular motor with electronic limit switch, built-in receiver and Nice TTBus technology. The declaration refers to the 1517 model, which has a 45 mm diameter. Era Mat MA is designed for a flawless movement even with friction, thanks to control of raising force and obstacle recognition during lowering, which protects the shutter from damage during freezing conditions. This recognition is adjustable and guarantees adequate protection against break-in. Thanks to Nice TTBus 3-wire technology, motor movement can be managed by means of a low-voltage control and a wired connection to climatic sensors without external control unit.

The nominal mechanical power of the Era Inn Smart S is equal to 10.05 W, and it allows the movement of blinds, even with multiple applications. Secondary packaging is composed by a cardboard box and three expanded polystyrene molds; tertiary packaging is composed by a wooden pallet and LDPE tape.

Nice Green Products, with specific technological innovations or materials that permit **energy efficency of the buildings** and a **low impact on the environment.**

The nominal mechanical power of the Era Mat MA is equal to 26.70 W, and it allows the movement of shutters with a number of intermediate opening positions. Secondary packaging is composed by a cardboard box and two expanded polystyrene molds; tertiary packaging is composed by a wooden pallet and LDPE tape.

TECHNICAL INFORMATION	U.M.	Era Inn Smart	Era Mat MA
Nominal torque	Nm	3.00	15.00
Nominal angular velocity	rad/s	32.00	17.00
Electric power assimilated in the motion phase	W	40.00	170.00
Electric power assimilated in the stand-by phase	W	1.17	0.893
Time for performing one operating cycle	S	20.00	40.00
Number of cycles per day*	N	4.00	2.00
Reference service life	y	10.00	10.00

* The complete opening and closing of an application

UN CPC code for Era Inn Smart S and Era Mat MA is 46111 - Motors of an output not exceeding 37.5 W; other DC motors; DC generators

The presence of the different materials in the products are reported in the following page:

Products information

Presence of different materials in the product Era Inn Smart S:

MATERIALS	PERCENTAGE
Metals	41.07%
Plastic	13.91%
Circuit boards	19.42%
Cables and connectors	9.92%
Other	15.68%

Presence of different materials in the product Era Mat MA:

MATERIALS	PERCENTAGE
Metals	62.13%
Plastic	17.42%
Circuit boards	6.58%
Cables and connectors	13.51%
Other	0.37%

The products do not contain any of the substances of very high concern (SVHC) regulated by the Regulation (EC) No 1907/2006 (REACH) or the Regulation (EC) No 1272/2008 of European parliament.

Methodology

Inventory analysis was conducted using specific data from Nice S.p.A., relating to the year 2020 and to the production site "Nice 2". The data refer to the consumption of raw materials and electricity, the production of the gearmotor and the waste connected to it.

Selected generic data from international databases were used (in particular GaBi Professional 8.8 and Ecoinvent 3.7.1) regarding the production processes of raw materials and auxiliary materials used for the gearmotor production, generation and distribution of electricity, means of transport and waste treatment processes related to the production that takes place in the Nice plant.

In addition, data on ground transportation distances were calculated using the Google Maps online calculator and those by sea using the Searates online tool.

The calculation method adopted for the LCA study reported in this EPD is described in the document "GPI for an International EPD® System" version 4.0, while the characterization factors, used to convert the data deriving from the inventory analysis of the life cycle in impact categories, are described in the reported at www.environdec.com.

LCA information

Functional Unit

Following the indications of the PCR 2019:11 version 1.02, functional unit for the product's life cycle is a drive capable of assure a rated output equal to 10 W for the movement of an object.

The complete use phase has been calculated dor the service life of 10 years, according to PCR 2019:11.

System borders

The present study is defined "from-cradle-to-grave", therefore the life cycle of product for the automation under study is subdivided into Upstream, Core and Downstream phases. The EPD only refers to the gear motor and no other components that can be necessary for the movement of an automation (transmitters, sensors, tracks or other accessories).

Upstream phase includes the production of all the materials (raw and auxiliary) that enter the production process, as detailed below:

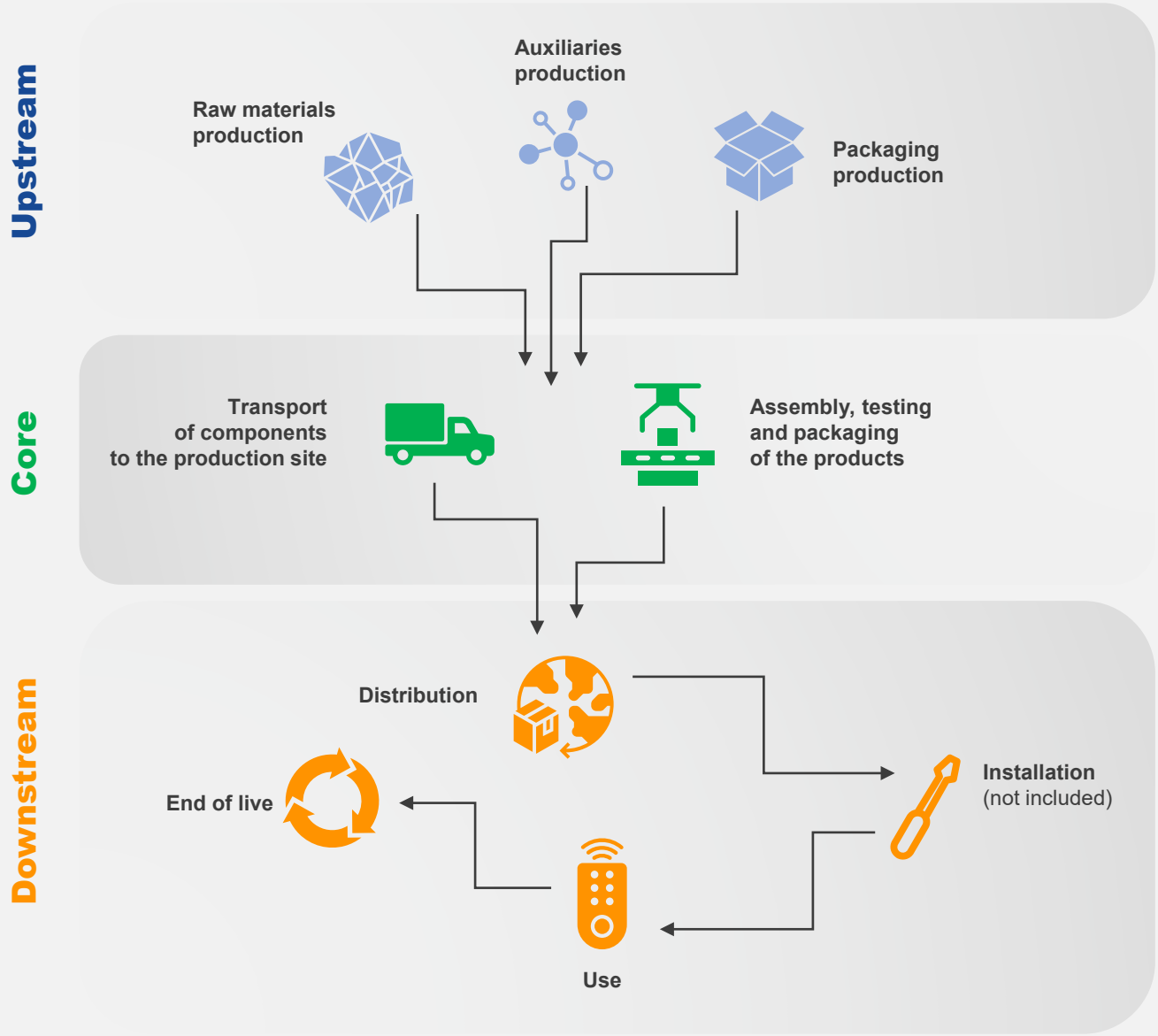
- operations of extraction, transport and treatment of resources;
- the production of raw materials (components) that make up the product, including their packaging;
- the production of auxiliary for the assembly, printing and lubrication materials;
- packaging production;
- the production of electricity and fuels used at the companies that produce the materials described in the previous points.

Core phase includes the following processes, which are associated with transport and processing that combine to create the finished product:

- transport of materials from the place of production to the manufacturing site. The specific transport of every component has been calculated; for the suppliers of Nice's suppliers, an estimated distance of 100 km has been applied.
- consumption of electricity for product assembly;
- storage and packaging;
- treatment of waste produced during manufacture;
- transport from the production plant of the subcontractor to Nice, in Oderzo (TV).

Finally, the Downstream phase includes the following processes, which take place outside the plant and involve the finished product:

- transport from production site to the final retailer;
- use of the product (throughout its reference service life);
- end-of-life of the product after use;
- end-of-life of packaging after use.



Data quality and cut-off

In accordance with the cut-off rule, flows less than 1% of the total inventory were excluded, i.e.:

- construction of company plants and processing machinery (with a life of more than three years);
- staff travel and home-work transfers;
- research and development activities;
- the materials necessary for cleaning the machinery;
- product installation and its maintenance.

Energy consumption calculation

Based on the technical information regarding the product, energy consumption in the use phase has be calculated as follow:

$$\text{Consumption } [kWh/y] = \left[\left(\frac{P_m}{1000} \times t_m\right) + \left(\frac{P_s}{1000} \times t_s\right)\right] \times 24 \times 365$$

Where:

Pm = electric power assimilated in the motion phase [W]

tm = motion ratio [%]

Ps = electric power assimilated in the stand-by phase [W]

ts = stand-by ratio [%]

Motion ratio is a measure of the period the gear motor spends applying force/torque to move an object, i. e. an automation system. It has been calculated as

$$t_m = \frac{T \times C}{3600 \times 24}$$

Where:

T = time for performing one operating cycle [seconds]

C = number of cycles per day [number]

For this products, the calculation has been integrated with assumptions from the gear motors' designers, resulting in a *motion ratio* equal to 0.125% for both Era Inn Smart and Era Mat MA.

Stand-by ratio has been therefore calculated as:

$$t_s = 1 - t_m$$

The presented formula refers to the electricity that the product consumes in one year (kWh/y); the complete use phase has been therefore calculated for the service life of 10 years (PCR 2019:11).

EPD validity

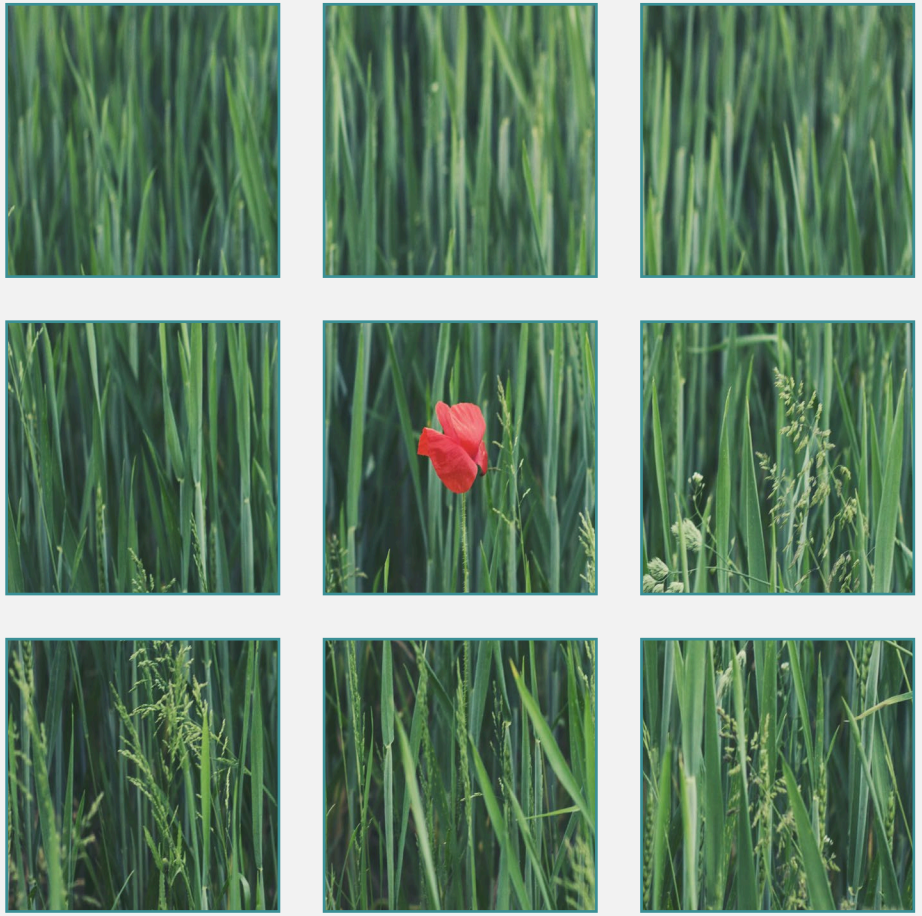
This EPD is valid globally and has a validity of 5 year starting from the approval date.

Environmental performance

In order to reach the results reported below, one of the most widespread application software was used for the evaluation of the product life cycle, namely GaBi. Furthermore, the most recent databases on the production of materials, the production cycles in the metallurgical and chemical sector, transports and energy systems were used (GaBi Professional and Ecoinvent).

The impact categories are:

- Global warming potential (GWP)
- Acidification potential (AP)
- Eutrophication potential (EP)
- Photochemical oxidant formation potential (POFP)
- Abiotic depletion potential – Elements
- Abiotic depletion potential – Fossil resources
- Water scarcity potential
- Use of resources
- Waste production
- Output flows



Era Inn Smart S

Potential environmental impact

PARAMETER		UNIT	Upstream	Core	Downstream		TOTAL
					Distribution + end-of-life	Use phase	
Global warming potential (GWP)	Fossil	Kg CO_2 eq.	1,18E+01	5,47E-02	1,07E+01	6,95E+01	**9,21E+01**
	Biogenic	Kg CO_2 eq.	5,83E-02	7,50E-05	5,96E-01	1,57E-01	**8,11E-01**
	Land use and land transformation	Kg CO_2 eq.	1,71E-02	2,11E-04	8,15E-02	1,42E-01	**2,41E-01**
	TOTAL	**Kg CO_2 eq.**	1,19E+01	5,50E-02	1,14E+01	6,98E+01	**9,32E+01**
Acidification potential (AP)		Kg SO_2 eq.	1,65E-01	5,46E-04	9,22E-02	1,97E+00	**2,23E+00**
Eutrophication potential (EP)		Kg PO_4^{3-} eq.	2,09E-02	8,04E-05	2,30E-02	1,33E-01	**1,77E-01**
Photochemical oxidant formation potential (POFP)		Kg NMVOC eq.	4,18E-02	1,63E-04	2,00E-02	1,80E-01	**2,42E-01**
Abiotic depletion potential - Elements		Kg SB eq.	8,50E-04	2,65E-08	1,21E-06	9,49E-05	**9,46E-04**
Abiotic depletion potential – Fossil resourses		MJ	1,70E+02	7,02E-01	1,37E+02	9,71E+02	**1,28E+03**
Water scarcity potential		M^3 eq.	2,91E+00	2,82E-01	1,13E-01	1,75E+01	**2,09E+01**

Era Inn Smart S

Use of resources

PARAMETER		UNIT	Upstream	Core	Downstream		TOTAL
					Distribution + end-of-life	Use phase	
Primary energy resourses Renewable	Use as energy carrier	MJ	1.50E+02	1.62E+00	7.42E+00	1.03E+02	**2.62E+02**
	Used as raw materials	MJ	4.06E+00	8.29E-06	3.51E-04	9.94E-01	**5.06E+00**
	TOTAL	MJ	1.54E+02	1.62E+00	7.42E+00	1.04E+02	**2.67E+02**
Primary energy resourses Non-renewable	Use as energy carrier	MJ	1.86E+02	6.91E-01	1.34E+02	1.13E+03	**1.45E+03**
	Used as raw materials	MJ	2.97E+00	1.59E-02	3.19E+00	0.00E+00	**6.18E+00**
	TOTAL	MJ	1.89E+02	7.07E-01	1.37E+02	1.13E+03	**1.46E+03**
Secondary material		Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Renewable secondary fuels		Mj	1.22E-23	0.00E+00	0.00E+00	0.00E+00	**1.22E-23**
Non-renewable secondary fuels		MJ	1.44E-22	0.00E+00	0.00E+00	0.00E+00	**1.44E-22**
Net use of fresh		M^3	9.95E-02	6.32E-03	9.24E-03	5.12E-01	**6.27E-01**

Era Inn Smart S
Waste production and output flows

Waste production

PARAMETER	UNIT	Upstream	Core	Downstream		
				Distribution + end-of-life	Use phase	TOTAL
Hazardous waste disposed	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Non-hazardous waste disposed	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Radioactive waste disposed	Kg	3.89E-03	1.71E-06	1.64E-04	0.00E+00	**4.06E-03**

NOTE: Hazardous and non-hazardous waste is only declared if the treatment takes place outside the system boundaries.

Era Inn Smart S
Waste production and output flows

Output flows

PARAMETER	UNIT	Upstream	Core	Downstream		
				Distribution + end-of-life	Use phase	TOTAL
Components for reuse	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Material for recycling	Kg	0.00E+00	0.00E+00	4.38E-01	0.00E+00	**4.38E-01**
Materials for energy recovery	Kg	0.00E+00	0.00E+00	3.64E-01	0.00E+00	**3.64E-01**
Exported energy, electricity	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Exported energy, thermal	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**

Era Mat MA

Potential environmental impact

PARAMETER		UNIT	Upstream	Core	Downstream		TOTAL
					Distribution + end-of-life	Use phase	
Global warming potential (GWP)	Fossil	Kg CO_2 eq.	4,36E+00	4,18E-02	5,51E-01	1,45E+01	**1,94E+01**
	Biogenic	Kg CO_2 eq.	1,24E-02	8,50E-05	3,32E-01	1,06E-01	**4,50E-01**
	Land use and land transformation	Kg CO_2 eq.	3,25E-03	2,17E-04	5,62E-04	2,24E-02	**2,65E-02**
	TOTAL	**Kg CO_2 eq.**	4,38E+00	4,21E-02	8,83E-01	1,46E+01	**1,99E+01**
Acidification potential (AP)		Kg SO_2 eq.	1,13E-01	6,98E-04	3,99E-03	8,53E-02	**2,03E-01**
Eutrophication potential (EP)		Kg PO_4^{3-} eq.	8,46E-03	8,62E-05	4,48E-03	5,08E-03	**1,81E-02**
Photochemical oxidant formation potential (POFP)		Kg NMVOC eq.	1,30E-02	4,47E-04	1,73E-03	2,17E-02	**3,69E-02**
Abiotic depletion potential - Elements		Kg SB eq.	1,33E-04	5,97E-09	2,00E-07	6,02E-06	**1,39E-04**
Abiotic depletion potential – Fossil resourses		MJ	6,85E+01	5,38E-01	2,19E+00	1,67E+02	**2,38E+02**
Water scarcity potential		M^3 eq.	1,57E+00	1,05E-01	1,53E-02	2,54E+00	**4,23E+00**

Era Mat MA

Use of resources

PARAMETER		UNIT	Upstream	Core	Downstream		TOTAL
					Distribution + end-of-life	Use phase	
Primary energy resourses Renewable	Use as energy carrier	MJ	1.98E+01	6.18E-01	6.51E-02	1.21E+02	**1.41E+02**
	Used as raw materials	MJ	9.18E-01	5.75E-11	2.02E-04	1.45E-02	**9.32E-01**
	TOTAL	MJ	2.07E+01	6.18E-01	6.53E-02	1.21E+02	**1.42E+02**
Primary energy resourses Non-renewable	Use as energy carrier	MJ	7.25E+01	5.27E-01	2.18E+00	2.44E+02	**3.19E+02**
	Used as raw materials	MJ	1.03E+00	1.27E-02	3.13E-02	6.46E+00	**7.53E+00**
	TOTAL	MJ	7.35E+01	5.40E-01	2.21E+00	2.51E+02	**3.27E+02**
Secondary material		Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Renewable secondary fuels		Mj	1.91E-24	0.00E+00	0.00E+00	0.00E+00	**1.91E-24**
Non-renewable secondary fuels		MJ	2.24E-23	0.00E+00	0.00E+00	0.00E+00	**2.24E-23**
Net use of fresh		M^3	4.79E-02	2.37E-03	4.88E-04	1.26E-01	**1.77E-01**

Era Mat MA
Waste production and output flows

Waste production

PARAMETER	UNIT	Upstream	Core	Downstream		
				Distribution + end-of-life	Use phase	TOTAL
Hazardous waste disposed	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Non-hazardous waste disposed	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Radioactive waste disposed	Kg	4.99E-04	8.49E-07	1.66E-06	3.24E-02	**3.29E-02**

NOTE: Hazardous and non-hazardous waste is only declared if the treatment takes place outside the system boundaries.

Era Inn Smart S
Waste production and output flows

Output flows

PARAMETER	UNIT	Upstream	Core	Downstream		TOTAL
				Distribution + end-of-life	Use phase	
Components for reuse	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Material for recycling	Kg	0.00E+00	0.00E+00	3.42E-01	0.00E+00	**3.42E-01**
Materials for energy recovery	Kg	0.00E+00	0.00E+00	1.29E-01	0.00E+00	**1.29E-01**
Exported energy, electricity	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Exported energy, thermal	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**

Additional Information

The Era Inn Smart S gear motor presented in the EPD responds to the CB, UL and CQC standard certifications.

Era Mat MA gear motor presented in the EPD responds to the CE marking and the NF standard certification.

Differences versus previous version

2019-12-09 Version 1

2022-07-14 Version 2 – ***Editorial change**: new eye-catching layout*

Programme information

Programme

The International EPD® System

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Product category rules (PCR): 2019:11: AC and DC Gear Motors for Automation Systems, v. 1.02

UN CPC 46111 AND 46112

PCR review was conducted by:
The Technical Committee of the International EPD® System. A full list of members available on www.environdec.com. The review panel may be contacted via info@environdec.com.
Chair of the PCR review: Gorka Benito Alonso

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

☒ EPD Process verification

☐ EPD verification

Third party verifier:
DNV Business Assurance Italy Srl

Procedure for follow-up of data during EPD validity involves third party verifier:

☒ Yes

☐ No

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