

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 14025

Hospital cleaning service

Rekeep S.p.A.



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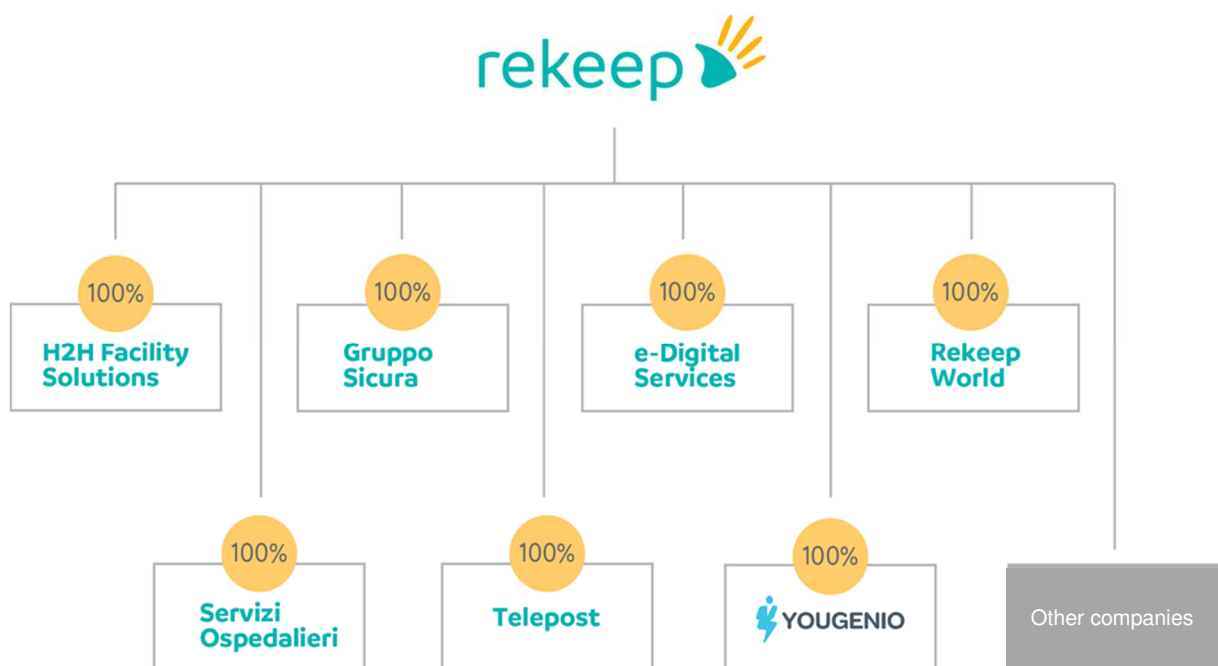
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1. THE COMPANY

Rekeep S.p.A., company that provides cleaning services in hospitals, is the new company name of Manutencoop F.M. S.p.A. was set up in December 2003 as a spin-off of a business unit of Manutencoop Società Cooperativa, a well-established Bologna cooperative formed in 1938 that has grown over the years to become one of the leading Italian providers of specialty and integrated services.

Rekeep S.p.A. has expanded rapidly so as to head a Group that specialises in managing and delivering integrated services to public- and private-sector clients for property-, environmental- and healthcare-related operations.

The Rekeep Group is the **main Italian operator in Integrated Facility Management** and ranks among Europe's leading players in this sector, with estimated consolidated revenues exceeding € 1 billion and over 17,000 employees.



The Rekeep Group draws on its proven expertise and in-depth knowledge of the competitive dynamics of its target market to run large-scale and highly complex contracts. Extensive experience, along with a strong orientation towards innovation and well-qualified personnel, are among the features which enable the Group to act as an accountable one-stop-shop that works closely with the client to design highly innovative bespoke solutions to meet any specific need.

Rekeep S.p.A.

Decades of experience enable Rekeep S.p.A. to deliver, throughout Italy, a comprehensive and co-ordinated range of integrated services aimed at streamlining and upgrading the non-core and ancillary activities of large private organisations, public bodies and healthcare providers. The property and environmental services that can be offered under Global Service contracts are:

- ➔ **Environmental hygiene:** cleaning, sanitation, disinfection, pest control environmental disinfection and deratization;
- ➔ **Technical maintenance services:** management and maintenance of building components and its plants (heating system, electric power plants, elevator etc.); design, construction and upgrading of buildings; design and installation of energy saving and pollutant reduction devices.
- ➔ **Energy services:** management of air-conditioning and climate control: fuel supply, management, maintenance, upgrading and optimization of heating and cooling systems and energy increasing efficiency.
- ➔ **Other services:** provision of health logistic services and pharmaceutical warehouse management services; management and storage of medical records; handling and transport of biological and laboratory samples. Support services for school activities, reception and security, move in - move out.



COMPANY CERTIFICATIONS

Rekeep S.p.A.'s quality management system is certified according to the requirements of the **UNI EN ISO 9001:2015** Standard. Rekeep S.p.A. places client satisfaction at the forefront of its service delivery system, beginning from the planning stage.

In 2006 the Company's environmental management system was awarded Certification to the **UNI EN ISO 14001:2015** Standard. Not only does this Certification provide the client with a greater assurance of reliability because it implements an organisational system focused on environmental management, but also it marks an important step for Rekeep S.p.A. towards a sustainability-inspired business management system.

Rekeep S.p.A. has, moreover, attained Certification of its social accountability management system according to the requirements of the **SA8000:2014** International Standard. The SA8000:2014 Standard is a framework for safeguarding all the workers either directly or indirectly involved in the production chain, including the employees, suppliers, and external associates of the certified company.

Rekeep S.p.A. achieved Certification of its energy management system to the **UNI CEI EN ISO 50001:2011** Standard; furthermore, it earned Certification of its occupational health and safety management system to the **BS OHSAS 18001:2007** Standard.

Rekeep S.p.A. is accredited as an **ESCO - Energy Service Company**. This Accreditation identifies companies that provide energy services (energy audit; feasibility studies; engineering and implementation of plant retrofit or new development projects financed with own funds; operation and maintenance) with remuneration directly tied to the energy savings achieved by the client.

Rekeep S.p.A. also holds the following certifications:

- **Compliance assurance of the safety management system (pursuant to Article 30 of Legislative Decree No. 81/08);**
- **UNI CEI 11352:2014 issued by Rina S.p.A.;**
- **ANMDO-IQC Certificate.**

Rekeep S.p.A. is based in Bologna, via Poli, 4 - 40069 Zola Predosa, Italy.

For additional information, or to download data concerning Rekeep S.p.A. and the Rekeep Group in general, please visit our website: www.rekeep.com

2. THE SERVICE

UN CPC Code

853 Professional cleaning services for buildings.

DESCRIPTION OF THE SERVICE

This service consists of cleaning and disinfecting hospital premises. It is conducted by means of various standardised operations at intervals that differ according to the risk area. There are various cleaning methods: manual, mechanised or mixed. Therefore, manual cleaning equipment such as dusting trolleys or frames, and mechanised appliances such as washing machines and washer dryers, wet vacuums, etc, are used.

The machinery and equipment used consist of washers and dryers, wet vacuums, scrubbers, vacuum cleaners, trolleys and frames.

The average life of the machinery and other equipment is considered to be 10 years. The total power of the machinery is about 34 kW.

The hospital premises considered for the LCI data collection are those of the Sant'Anna Hospital in Como, whose covered and working space has an area of 80,515 m² and therefore falls under the category of medium-sized buildings (PCR 1.2.1).

This site was selected as representational for the following reasons:

- The service is delivered using mixed manual and mechanical techniques on large horizontal surfaces applying standardised methods;
- The cleaning services, in terms of frequency and level of risk of the areas concerned, are similar to those provided in other modern hospital facilities in which Rekeep S.p.A. operates;
- The client's requirements as to cleanliness level are similar to those required by other public clients;
- The products used fall within the range of those used in the other hospital facilities in which Rekeep S.p.A. operates;
- The surfaces on which the service is applied are comparable in size to other medium-sized buildings in which Rekeep S.p.A. operates.

The service provides for daily and periodic routine activities in addition to extraordinary operations.

The daily routine activities are carried out, depending on the type of operation, with a frequency equal to a minimum of once a week to a maximum of three times a day. The periodic routine activities with a frequency equal to a minimum of once a year to a maximum of once a month while the extraordinary activities, being not continuous or occasional, are not subject to pre-established periodicity in the specifications.

3. LCA METHODOLOGY

The Life Cycle Assessment (LCA) was conducted in compliance with the ISO 14040 and 14044 standards and the relevant PCR 2011:03, which prescribes a cradle-to-gate approach. Specific data used were those for 2019.

The SimaPro v. 9 software was used for this analysis with the Ecoinvent v. 3.5 and ELCD v. 3.2 databases.

DECLARED UNIT

The declared unit is 1 m² of surface kept clean over a one-year period. The results refer to floor areas, as the areas of the other surfaces (e.g. windows) are smaller than 20% of the total area.

SYSTEM BOUNDARIES

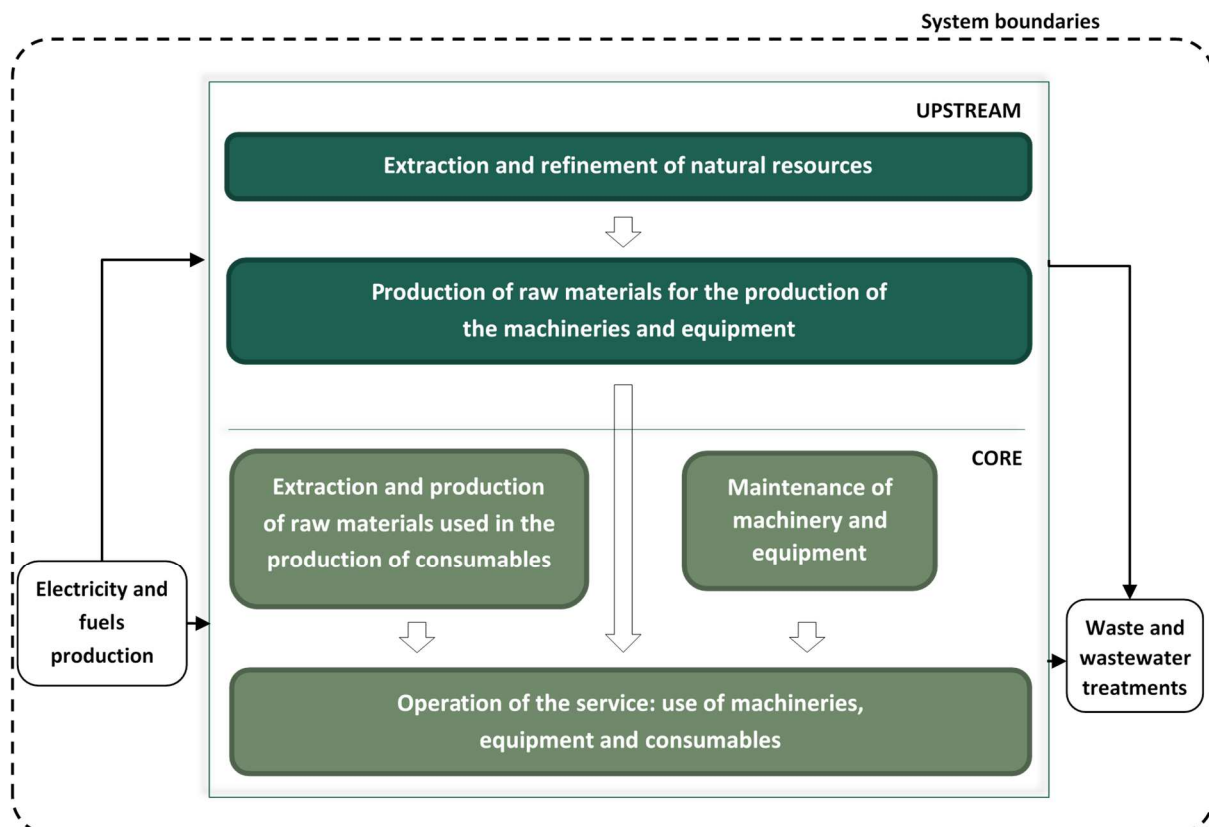
The System boundaries are those of the phases in the service life cycle considered from cradle to gate. They therefore include the upstream and core phases and exclude the downstream phases.

The upstream processes include:

- Extraction and production of raw materials for the manufacture of machinery and equipment;
- Production of electricity, thermal energy and fuel for processing raw materials;
- Transport necessary for upstream processes.

The core processes include:

- Operation of the service: use of machinery and equipment;
- Maintenance of machinery and equipment;
- Extraction and production of raw materials for manufacturing consumables, such as chemical products and other articles such as sponges, cloths, etc.;
- Treatment of waste and waste water generated by the service;
- Production of electricity consumed during the cleaning service;
- Transport of chemical products and consumables.



The consumption of electricity, fuel and water, and the production and treatment of waste during the various phases in the life cycle are included in the System boundaries and are associated with each module separately.

CUT-OFF AND ALLOCATION METHODS

In accordance with the relevant PCR document, the cut-off criterion excludes flows that contribute less than 1% of the environmental impacts. For this study, all the input and output flows are accounted in the upstream and core modules except for the production processes of machinery and equipment components since neither specific nor generic data are available for this operation; on the other hand, all the raw materials used to make the components are included. Also excluded is the transport of the machinery and equipment to the hospital, since this is not carried out regularly: the machinery and equipment remain in the building throughout the term of the contract.

The allocation methods applied to associate elementary flows with the declared unit analysed are based on physical relationships (surface criterion). In conformity with the GPI, for waste disposal by incineration, 50% of the impacts are allocated to disposal operations (the remaining 50% is allocated to energy recovery, outside the System boundaries).

DATA TYPES AND SOURCES

The following types of data were used for this LCA:

- **Specific data:** data collected directly from the hospital premises, such as the consumption of chemical products and other consumables for delivering the service, the use of machinery in terms of hours of functioning, the dimensions of the hospital, etc. Data refer, in general, to the year 2019. The data relating to consumables and chemical products derive from the quantities purchased in the three-year period 2017-2019 which were averaged in order to obtain a representative annual consumption figure, given the stocks that are recorded at the end of the year;
- **Generic data:** data taken from the Ecoinvent v. 3.5 database, used for the processes of extracting and processing raw materials, producing polymers and chemical substances, producing energy and, in general, for all the processes for which specific data could not be obtained;
- **Proxy (tertiary) data:** data obtained from estimates based on similar processes for which there are recorded data. Data of this kind are used in the absence of specific or generic data. The environmental impacts associated with proxy data do not exceed 10% of the overall environmental impact of the System.

The processes for the energy production mix in the ELCD 3.2 database (PCR §4.7.1) are used for the production of electricity in Italy, as no specific data regarding the supplier's energy mix are available. The most recent data set has been used: *Electricity grid mix, AC, consumption mix, at consumer, 230V IT S.*, which gives data for the mix in 2008.

4. ENVIRONMENTAL PERFORMANCE ASSESSMENT

The results of the life cycle impact assessment are summarised below.

They regard 1 m² of surface kept clean over a one-year period by means of a mixed cleaning system (manual and mechanised) in a medium-sized hospital.

The totals in the table below may not agree with the individual figures because data have been rounded off.

ENVIRONMENTAL IMPACTS

The table below shows the results of the life cycle impact assessment for 1 m² of surface kept clean over a one-year period.

IMPACT CATEGORY		UNIT	UPSTREAM	CORE	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	0,05	0,76	0,81
	Biogenic	kg CO ₂ eq.	8,6E-05	3,2E-03	3,3E-03
	Land use and land transformation	kg CO ₂ eq.	1,2E-04	5,1E-04	6,3E-04
	TOTAL	kg CO ₂ eq.	0,05	0,77	0,81
Acidification potential (AP)		kg SO ₂ eq.	2,4E-04	2,1E-03	2,4E-03
Eutrophication potential (EP)		kg PO ₄ ³⁻ eq.	1,2E-04	1,2E-03	1,3E-03
Formation potential of tropospheric ozone (POCP)		kg NMVOC eq.	1,7E-04	1,7E-03	1,9E-03
Abiotic depletion potential – Elements		kg Sb eq.	2,3E-06	9,3E-07	3,2E-06
Abiotic depletion potential – Fossil fuels		MJ, net calorific value	0,61	11,88	12,49
Water scarcity potential		m ³ eq.	0,01	0,91	0,92

USE OF RESOURCES

The results regarding the use of resources are set out below, broken down into the upstream and core phases. The results refer to 1 m² of surface kept clean over a one-year period.

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
Primary energy resources – Renewable	Used as energy carrier	MJ, net calorific value	0,06	1,23	1,29
	Used as raw materials	MJ, net calorific value	8,66E-03	7,01E-02	7,88E-02
	TOTAL	MJ, net calorific value	0,07	1,30	1,37
Primary energy resources – Non-renewable	Used as energy carrier	MJ, net calorific value	0,62	11,26	11,88
	Used as raw materials	MJ, net calorific value	0,11	2,86	2,97
	TOTAL	MJ, net calorific value	0,73	14,12	14,85
Secondary material		kg	0	6,5E-02	6,5E-02
Renewable secondary fuels		MJ, net calorific value	0	0	0
Non-renewable secondary fuels		MJ, net calorific value	0	0	0
Net use of fresh water		m ³	4,8E-04	3,6E-02	3,7E-02

WASTE PRODUCTION AND OUTPUT FLOWS

The tables below show the results of the assessment of the production of waste and output flows for 1 m² of surface kept clean over a one-year period.

PARAMETER	UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed	kg	1,2E-05	6,2E-06	1,9E-05
Non-hazardous waste disposed	kg	8,6E-03	1,2E-01	1,3E-01
Radioactive waste* disposed	kg	1,3E-06	7,3E-06	8,6E-06

(*) related to the energy mix datasets used for LCA modelling

PARAMETER	UNIT	UPSTREAM	CORE	TOTAL
Components for reuse	kg	0	0	0
Material for recycling	kg	0	5,2E-03	5,2E-03
Materials for energy recovery	kg	0	0	0
Exported energy, electricity	MJ	0	0	0
Exported energy, thermal	MJ	0	0	0

OTHER ENVIRONMENTAL INDICATORS

The table below shows the results of the assessment of the direct use of electricity in the core module for 1 m² of surface kept clean over a one-year period.

INDICATOR	UNIT	UPSTREAM	CORE	TOTAL
Direct use of electricity in the core module	kWh	n.a.	0,64	n.a.

The emission factor for the energy mix used in the LCA study is 5.57E-04 ton CO₂ eq./kWh.

In providing the service, no use is made of toxic substances, such as chemical products classified as carcinogenic, toxic to reproduction, causing heritable damage, or containing heavy metals or polycyclic aromatic hydrocarbons (PAH).¹

¹ According to the classification in Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008.

The table below shows the references of the characterization methods applied for the environmental impact assessment.

IMPACT CATEGORY	UNIT	CHARACTERIZATION FACTORS	ORIGINAL REFERENCE(S)
Global warming potential	kg CO ₂ eq.	GWP100, CML 2001 baseline Version: January 2016.	IPCC (2013)
Acidification Potential	kg SO ₂ eq.	P, CML 2001 non-baseline (fate not included), Version: January 2016.	Hauschild & Wenzel (1998)
Eutrophication potential	kg PO ₄ ³⁻ eq.	EP, CML 2001 baseline (fate not included), Version: January 2016.	Heijungs et al. (1992)
Photochemical oxidant formation potential	kg NMVOC eq	POFP, LOTOS-EUROS as applied in ReCiPe 2008.	Van Zelm et al 2008
Abiotic depletion potential – Elements	kg Sb eq.	ADPelements, CML 2001, baseline.	Oers, et al (2002)
Abiotic depletion potential – Fossil fuels	MJ, net calorific value	ADPfossil fuels, CML 2001, baseline.	Oers, et al (2002)
Water Scarcity Footprint (WSF)	m ³ eq.	AWARE Method: WULCA Recommendations on characterization model for WSF 2015, 2017.	Boulay et al (2017)

5. PROGRAMME – RELATED INFORMATION AND VERIFICATION

Programme	<p>The International EPD® System</p> <p>EPD International AB Box 210 60 SE-100 31 Stockholm Sweden</p> <p>www.environdec.com</p>
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Product Category Rules (PCR): PCR 2011:03 Version 2.11 (2019-09-06)	
PCR review conducted by: International EPD® System. Technical Committee, Review Chair: Maurizio Fieschi, Contact via info@environdec.com .	
Independent verification of the declaration and data, according to ISO 14025:	
<input type="checkbox"/> EPD Process Certification (internal)	<input checked="" type="checkbox"/> EPD verification (external)
Third party verifier: SGS Italia S.p.A. via Caldera, 21 20153 - Milan Telephone +39 02 73931 - Fax +39 02 70124630 www.it.sgs.com	
Accredited by: Accredia, Certificate No. 006H	
Procedure for follow-up of data during EPD validity involves third party verifier:	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

EPDs within the same product category but from different programmes may not be comparable.

Only EPDs referring to the same cleaning systems for the same dimensions of buildings may be comparable.

EPD owner has the sole ownership, liability and responsibility of the EPD.

CONTACTS



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6. DIFFERENCES COMPARED TO THE PREVIOUS VERSION (EPD REV. 1, 2018-12-03)

The new PCR v.2.11 have been used (compliant with General Program Instructions 3.0), all data has been updated to 2019.

7. REFERENCES

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