Nordic Ecolabelling for

Cleaning services

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Nordic Ecolabelling

Content

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In 1989, the Nordic Council of Ministers decided to introduce a voluntary official ecolabel, the Nordic Swan Ecolabel. These organisations/companies operate the Nordic Ecolabelling system on behalf of their own country's government. For more information, see the websites:

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1 What is a Nordic Swan Ecolabel Cleaning service?

A cleaning service certified with the Nordic Swan Ecolabel meets ambitious environmental requirements and has taken a holistic approach to its environmental work. The cleaning service takes an active and structured approach to reducing its consumption and optimising operations.

A Nordic Swan Ecolabel cleaning service:

- Strictly regulates use of chemicals and minimise chemical consumption, to ensure less impact on health and the environment.
- Uses a minimum of 90% ecolabelled cleaning products.
- Minimises environmental impact from transports.
- Sorts waste to ensure material recycling.
- Works to reduce their consumption of plastic bags.
- Has staff trained in environmentally friendly driving and cleaning methods.
- Has a quality system to ensure high quality cleaning.
- Requires working conditions in line with national labour law standards.

2 Why choose the Nordic Swan Ecolabel?

- Cleaning services may use the Nordic Swan Ecolabel trademark for marketing. The Nordic Swan Ecolabel is a very well-known and well-reputed trademark in the Nordic region.
- The Nordic Swan Ecolabel is a simple way of communicating environmental focus and commitment to the customers.
- The Nordic Swan Ecolabel identifies the most important environmental impacts and thus shows how a cleaning service can cut emissions, resource consumption and waste management.
- Environmentally suitable operations prepare cleaning services for future environmental legislation.
- Nordic Ecolabelling provides businesses with guidance on the work of environmental improvements.
- The Nordic Swan Ecolabel not only covers environmental issues but also quality requirements, since the environment and quality often go hand in hand. This means that a Nordic Swan Ecolabel licence can also be seen as a mark of quality.

3 Summary

Cleaning is an essential part of the daily operation of workplaces, institutions, public places, etc. and the purchase of cleaning services therefore represents an important part for most larger organisations. A Nordic Swan Ecolabelled cleaning service meets ambitious environmental requirements and are among the best in the industry when it comes to environmental and quality performance.

Nordic Ecolabelling has revised the criteria as a “partial revision”, which means that only parts of the criteria have been revised. The requirement level from generation 3 is kept in 12 of the requirements in the suggested generation 4.

Some requirements are updated and made clearer, but the requirement levels are the same.

For the revised criteria, the most important changes compared to generation 3 are:

- New template value for m^2 pr full time employee (FTE), used for the calculation of total square metres cleaned. The value is increased with 30% from 330 000 m^2 to 430 000 m^2. It is only permitted to use the template value for FTE if the applicant lacks information on frequency and square metres.
- Stricter requirements for total consumption of cleaning products, from previous 400 µl/m^2 to 300 µl/m^2.
- Stricter requirements for the consumption of ecolabelled cleaning products, from 80% to 90%.
- New requirements for window cleaning and cleaning services regarding treated water production and training.
- Floor care products are no longer a part of the ecolabelled service, it is considered special cleaning. Floor care products include floor polish, sealers, floor wax, wood oil and wax removal/strippers, and impregnation of stone flooring.
- The requirement for "non-ecolabelled products" is updated and tightened.
- A new routine requirement for reduction of plastic bags replaces the previous point score requirement that rewarded less use of plastic bags with a calculation of consumption in mg/ m^2.
- Point score requirement for the purchase of ecolabelled products and services is updated and changed.
- A new mandatory requirement for the purchase of 100% ecolabelled tissue, toilet and copy paper.
- All new purchase/leasing of vehicles must be electrical, plug-in hybrid or powered by biogas/natural gas.
- Maximum consumption of fuel for transport is 10% stricter. The limit value is set in kWh compared to litres for petrol in previous generation.
- A new mandatory requirement for waste sorting to secure recycling of the packaging of cleaning products.
- Updated document requirement for working conditions in line with national labour law standards.
- The mandatory requirement for total point score is updated.

4 Environmental impacts of the cleaning service

4.1 MECO analysis

MECO stands for Materials, Energy, Chemicals and Other.

The Nordic Swan Ecolabel as a life cycle-based ecolabel following the ISO 14024 standard. The standard describes that the criteria are based on environmental indicators found when assessing the full life cycle of the product, and by identification of the areas in the life cycle where the environmental impact can be reduced, and the manufacturer can influence.

In this connection a MECO analysis is carried out, to get an overview of which parts of the service's life cycle it may be relevant to set requirements for when preparing ecolabelling criteria.

The MECO analysis is used to pinpoint the most important environmental pressures in the life cycle for the product group, in a table. The MECO table does not show the sum of environmental impacts for the total life cycle, but where in the life cycle the environmental impact occurs.

Cleaning Services specific flow chart:

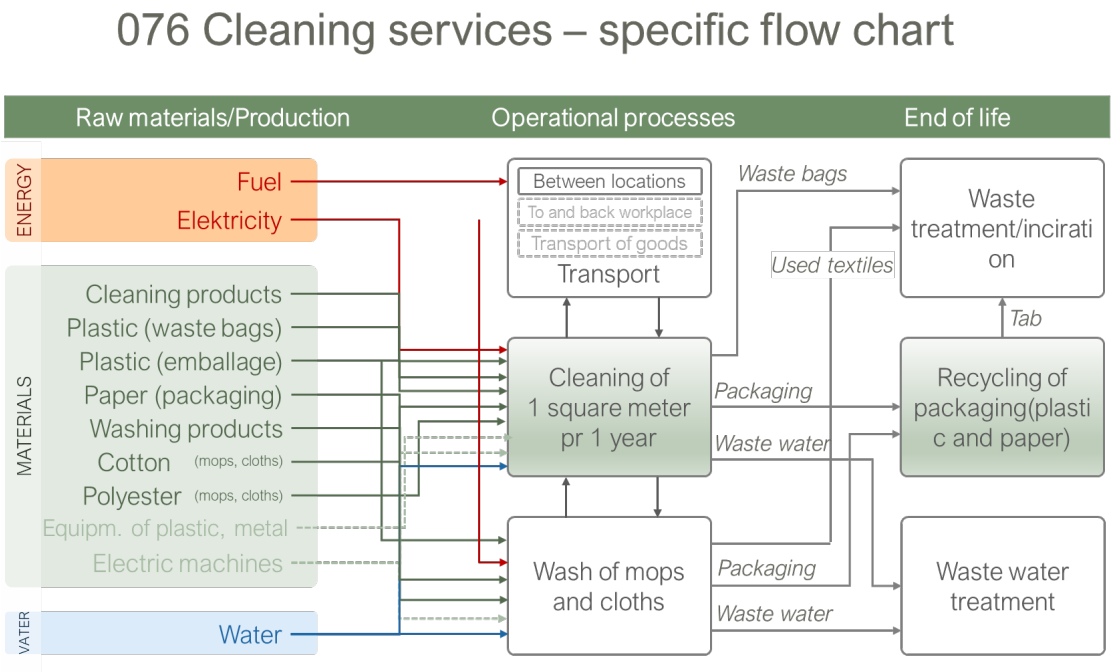

Table 1 MECO analysis for cleaning services

MECO for Cleaning services 076	Raw material	Production	Use/operational processes	End of life
Material	Raw material extraction of: Waste bags Cloths and mops (e.g., polyester and polyamide) Rack (trolley) for mops and other washing equipment (e.g., polypropylene (PP) and PVC) Floor washing machines/vacuum cleaners Packaging (often PE or PP) Tissue paper Cleaning agents (e.g., linear alkylbenzene sulfonates (LAS), phosphates and surfactants)	Water Chemical products Plastic bags Textiles	Extensive use of cleaning chemical products, plastic bags, textiles, cloths and mops Water (ionized) Dosing routines Single use products	Recycling, reuse, incineration of mops and cloths Recycling, reuse, incineration of plastic bags Recycling, reuse, incineration of packaging from cleaning products
Energy/CO2	Energy/CO_2 for the production of raw materials to several products reported above Energy/CO_2 for raw material extraction to fuel and electricity	Textiles Waste bags Chemical cleaning products	Energy/CO_2 from the use of: floor cleaning machines, wash of Laundry, vacuum cleaner and textile wash machines Heating of water Energy and air emissions from transport	Energy/CO_2 use from wastewater treatment
Chemicals	Emissions from extraction of chemical raw materials. Exposure to environments and societies. Cleaning agents may contain surfactants, solvents, preservatives, fragrances, dyes and preservatives Plastic manufacturing may involve chemical additives like phthalates, stabilizers, and flame retardants	Emissions from production of chemical raw materials. . Exposure to environment and societies.	Chemical products used for washing. Exposure to harmful chemicals (e.g., chlorine, phosphate). Dosing routines Textile detergents Air fresheners Emission of microplastic	Emissions of cleaning chemicals and chemicals used in the laundry Emissions of chemicals in wastewater treatment
Other	Land use and water use for in-going materials. Sustainable cultivation of raw materials and water to ensure biodiversity and safeguard natural areas. Land use change and indirect land use change (LUC/ILUC)		Health issues Social and good working conditions Water consumption	

Sources for MECO

Fontana et al., 2023: Evaluating Cleaning Services in Civil Environments: Microbiological and Life Cycle Analysis Comparing Conventional and Sustainable Methods: https://www.mdpi.com/2071-1050/16/2/487

Nordic Ecolabelling, Background document, 076 Cleaning Services, Chapter 6 Environmental impact of cleaning services, page 11-15, version 3.6, https://www.nordic-swan-ecolabel.org/criteria/cleaning-services-076/

Neto et al., 2018: Development of the EU Ecolabel Criteria for Indoor Cleaning Services, Final Technical report and criteria proposal,

https://circabc.europa.eu/ui/group/0e3024d9-38be-415b-b141-c05d5d31dd92/library/792ea743-bafd-468e-975d-cba4a0f49077/details

NSE Hovedrapport "Måling af udviklingen i det grønne indkøb "av Marie Kampermann Eriksen, Side 45: https://nordicecolabel.sharepoint.com/:w:/r/sites/NE-NordicEcolabellingProductGroups/_layouts/15/Doc.aspx?sourcedoc=%7B3374A4BB-B54D-4338-B33D-7AE5ACB922C4%7D&file=Dokumentation_01%20hovedrapport.docx&action=default&mobileredirect=true nor

4.2 Relevance, potential and steerability (RPS)

The environmental impact of cleaning services is primarily linked to the consumption of materials, resources like energy, fuel and water, emissions to air and aquatic environments, as well as waste, and the purchase of ecolabelled products and services. Quality, health, and the working environment are also important topics for the industry.

In the criteria for cleaning services, all significant environmental conditions in the life cycle are assessed. Nordic Ecolabelling has analysed the relevance, potential, and steerability (the RPS analysis). The purpose of the RPS analysis has been to clarify where the greatest environmental benefits can be achieved by setting requirements. The results of the analysis are shown in the table below and is the basis of Nordic Ecolabelling's decisions on what areas to assign requirements for cleaning services.

Table 2 RPS table

Lifecycle stages	Area and assessment of R, P, S (high, medium or low)	Comments
Raw materials		
Consumption of materials	Cleaning products, chemicals R: High P: High S: High	Consumption of cleaning products is perhaps the most significant environmental impact from cleaning services. Reducing consumption of cleaning products, and thereby water consumption, will also reduce the impact of repeated heavy lifting for machinery. There is a great variation in the consumption of cleaning products, depending on the cleaning tasks involved. The consumption of cleaning products plays a key role in reducing ecotoxic substances, improving the working environment and setting targets aimed at reducing the consumption of resources. Ecolabelled cleaning products are readily available and are among the best cleaning products in terms of an environmental profile. The whole life cycle is considered, and strict requirements are set concerning the environmental and health effects of the constituent substances, and regarding packaging.
	Laundry detergents R: High P: High S: Medium	Laundry of cloths and mops is of great importance for the service's environmental impact. Ecolabelled laundry detergents are also easily available and are among the best products in terms of an environmental profile and performance testing. Purchasing of Nordic Swan Ecolabelled textile service secures energy efficiency, limited amount of water use, strict environmental and health requirements as well as efficient distribution, and it is a good choice to make to ensure the most sustainable laundry.

		Textile services usually offer a rental service which is an environmentally friendly alternative to owning textiles or using disposable items. Generally, there is good access to ecolabelled textile services, but in some parts of the Nordics there is less access, and the potential is lower.
	Other cleaning equipment R: Medium P: Low S: Low	Cleaning equipment such as washing trolleys, racks, floor washing machines and others are necessary to perform the service.
	Cloths and mops R: High P: Medium S: Low	Cloths and mops are necessary products for a cleaning service. Ecolabelled microfibre cloths and mops has a documented effect on cleaning: The production of the microfibre has taken account of the environment in all stages. The cloths and mops clean without wear and tear of the surface. Unfortunately, the steerability is low due to different availability and price differences in the Nordic countries.
	Plastic bags R: Medium P: Medium S: High	The use of plastic bags for waste and garbage disposal is an essential part of the cleaning services. Shared waste stations, fewer waste bins and good routines can significantly reduce the use of plastic bags. Since the bags used for waste are usually made of plastics it's a potential to limit the use of virgin, fossil plastic and encourage the use of recycled plastics. Ecolabelled plastic bags with Blue Angel are products with a high percentage of recycled plastics, and at the same time meet requirements for concentration of contaminants.
Production/distribution and use phase		
Consumption of recourses	Energy R: High P: Medium S: Low	Energy for transport, heating of cleaning water, and energy consumption for floor washing machines and washing machines for textiles is a significant source to the climate impact. The potential varies between the different issues, but overall, the steerability is generally low as the activities that require use of energy are necessary to perform the service and it is expensive to replace equipment.
	Fuel R: High P: Medium S: Medium	Fuel consumption from transports is a significant source of the service's climate impact. To reduce emissions, it is necessary to shift to more energy-efficient transports and move away from fossil fuels. The steerability of vehicle types is greatest when new leasing contracts are established, or vehicles are purchased.
Consumption of resources	Water R: High P: High S: Medium	Water consumption for ordinary cleaning is applicable, but at the same time necessary. Water consumption for window cleaning is high. The use of deionised/demineralised water also called "ultra clean water" for window cleaning has replaced the use of tap water when cleaning windows outdoors. Most companies use only deionised/demineralised water or a combination of this and tap water. The production of 100 l deionised/demineralised water differs between 120 l and 200 l of tap water, and there is a great potential to reduce the use of tap water.
Emissions	Air Pollution R: High P: High S: Medium	The most significant air pollution comes from transport using petrol and diesel vehicles. There is a great variation in fuel consumption depending on the distances between customers. Reducing fossil fuel use, combined with eco-driving, helps to decrease air pollution.
	Air environment R: High P: High S: High	The most important challenges are health problems caused by vapours from cleaning agents. By avoiding perfumes and allergenic preservatives, and by

		choosing ecolabelled cleaning products, the health of the cleaning staff is safeguarded.
	Aquatic environment R: High P: High S: High	Cleaning agents from the cleaning process end up in the aquatic environment. Wastewater from washing machines and laundries is therefore also relevant. The use of ecolabelled products is important to avoid harmful substances entering the aquatic environment, along with reducing the overall use of cleaning products and ensuring correct dosing.
End of life		
Waste	Generation of waste R: High P: High S: High	The packaging from cleaning products has a great potential to be sorted correctly and recycled. In addition, the packaging from Nordic Swan Ecolabelled products contains a higher proportion of recyclable material.
Other		
Quality	Health and working environment R: High P: High S: Medium	Due to the large number of people engaged in cleaning, work environment conditions are a significant factor. Working conditions, such as ergonomic factors, skin exposure to chemicals and water, adverse degasification from chemical products, slippery floors, etc, all play a role in the indoor environment.
Purchase	Purchase of ecolabelled products and services R: High P: High S: Medium	Relevance and potential are high for products that are purchased and used regularly. The service is often responsible for their customers' purchase of toilet and tissue paper, soap, printed materials, cloths and mops, dishwashing products, hand towel rolls, plastic bags etc. The environmental impact is reduced simply by choosing ecolabelled products and services. Unfortunately, steerability is low in some cases due to differences in availability and price in the Nordic countries, such as for, workwear, hand towel rolls and vehicle wash installations. While cleaning services can encourage their customers to buy ecolabelled products and services, they cannot require them to do so.

5 General requirements of the applicant

Background to requirement O1

Nordic Ecolabelling requires a detailed description of the business to obtain an accurate picture of the service. The information provides the basis for the right advice and guidance in the application process.

Background to requirement O2

Definition of square metres cleaned

Requirement O2 and the calculation of square metres cleaned are central to the criteria for cleaning services. Viewed from an LCA perspective, it is important to calculate the environmental impact in a functional unit which relates to the service. It is therefore appropriate to use "m^2 cleaned" as this unit. The other requirements are related to this, which makes it possible to guarantee a low environmental impact per "functional unit".

Nordic Ecolabelling is aware that m^2-based cleaning is not optimal, as there is a difference between, for example, deep cleaning, ordinary cleaning, vacuuming

carpets, and inspection, where cleaning staff check the room and empty waste containers.

Calculation of the number of square metres cleaned

Most of the environmental requirements for cleaning services are calculated using the "per m²" unit. It is therefore important that the number of square metres cleaned is calculated on a correct basis.

The primary method for the cleaning service to find the number of m² cleaned is set as the calculation of m² cleaned via calculation of areas and cleaning frequency Many cleaning services have invested in a planning system to which customers' floorplans can be added, with details of the frequency at which the various areas are cleaned. This program can, relatively simply, give the cleaning service key figures for the number of m² they clean.

There is also the alternative of finding a representative figure per m², if only statements of the number of FTEs delivered in the cleaning service is available.

Background to the template value for the calculation of the number of m² cleaned

Many licence holders find it difficult enough to compile the number of m² cleaned. An alternative method has therefore been developed to be able to find the approximate number of square meters cleaned per year. This is done based on the number of full-time employees (FTE's) working with cleaning. In generation 3 of the criteria for Cleaning services it was assumed that approximately 1,950 hours per FTE is used and that a cleaning assistant can manage much more than 175 m²/hour. However, this depends on what is being cleaned. For large, open surfaces, far more than 175 m²/hour can be covered, but for many small rooms, offices with a lot of furniture, or private homes, fewer m²/hour will be covered. Nordic Ecolabelling wanted to ensure that the template value was lower than the average, to give a "worst case" in the absence of more detailed information, and this resulted in a template value on 330,000 m²/FTE.

During the work with generation 3, Nordic Ecolabelling has received feedback that the template value was too low. Over 30 licence holders, from among all Nordic countries as well as trade organisations, have provided us with data to revise the template value for generation 4. The result spans between 290,000 and 835,000 m² per full-time employee per year. The median value is 546,000 m²/FTE. To ensure that the template value continues to be lower than the average, and in the absence of more detailed information, Nordic Ecolabelling has updated the template value to 430,000 m²/FTE, which is an increase of 30% compared to generation 3.

Window cleaning

In dialog with several licence holders and window cleaning services, it was discovered that the window cleaning contract is not based on square metres but rather on the number of windows, panes, etc. Due to this it's not possible to require details of the number of square metres cleaned windows. Nordic Ecolabelling therefore requires a description of the system for window cleaning registration to gain a better understanding of the registration process, and potentially set absolute requirements in the future.

6 Cleaning Products

Background to requirement O3

A list of cleaning products currently in use, including the name, manufacturer, and function, is necessary so that Nordic Ecolabelling can verify whether the applicants meet the requirements. Safety data sheets ensure that appropriate actions are known in the event of occupational accidents and provide information on the product's classification.

The cleaning products must be categorized correctly so that Nordic Ecolabelling can set correct requirements for the various categories. The categories are ordinary cleaning, laundry detergents, window cleaning, treated water and special cleaning.

Special cleaning is not a part of the ecolabelled service. Disinfectant is categorized as special cleaning.

Treated waters include deionised or demineralised water, and other waters with not otherwise restricted substances in low concentrations and no surfactants. Deionised/demineralised water – also called "ultra clean water" – has become more and more common to use in window cleaning. New types of treated water, marketed with a cleaning effect, continuously appear on the market, such as water with added oxygen. The different treatments of the water can affect the water's pH and properties, and Nordic Ecolabelling therefore seeks to establish an overview of all products used by the cleaning services, even if they are only marketed as "water". Each type of treated water must be individually evaluated by NSE, which will decide whether it fits within this product category or not.

The use of disinfectant and alternatives to chemical disinfectant for ordinary cleaning, as well as "chemical-free cleaning" has also increased in recent years. New products have appeared on the market and among the alternatives to "chemical-free cleaning" and chemical disinfectants are ozone water and electrochemically activated water (ECA water).

Ozone water is produced by adding ozone to water. Ozone itself is a toxic gas and dangerous to humans even at low concentrations. According to the adopted opinion from the European "Committee for Risk Assessment", RAC, the following harmonized classifications should apply to ozone[1]: Muta. 2 H341 Suspected of causing genetic defects, and Carc. 2 H351 suspected of causing cancer, Acute Tox 2 H330 fatal if inhaled, STOT SE 2 H370 causes damage to organs, STOT RE 1 H372 causes damage to organs through prolonged and repeated exposure, Aquatic Acute 1 H400 very toxic to aquatic life, Aquatic Chronic 1 H410 very toxic to aquatic life with long lasting effects, and Ox. Gas 1 H270 may cause or intensify fire, oxidizer.

Nordic Swan Ecolabelling has decided to ban the use of ozone water for ordinary cleaning due to the precautionary principle even though the CMR classification is not yet implemented in CLP.

[1] RAC Opinion proposing harmonised classification and labelling at EU level of ozone, March 2023: https://echa.europa.eu/documents/10162/e0d136d8-50af-00b6-2795-1207b902072f

Electrochemically activated water (ECA water) is often marketed as harmless and consisting only of water and salt. This is not correct. The product is produced at the user site by sending electricity through salted water, which causes the formation of hypochlorite and hypochlorous acid. Hypochlorite and other reactive chlorine compounds are ingredients used in disinfectant and antibacterial products. The ingredients can form organic chlorine compound, which are harmful to the user. The use of disinfectants in areas where there is no real need for disinfection, can contribute to the development of resistance in microorganisms. Nordic Ecolabelling therefore do not allow the use of ECA water in ordinary cleaning at Nordic Swan Ecolabelled companies.

Background to requirement O4

One of the greatest environmental impacts on using chemical cleaning agents is the over-dosing of chemicals. This is often because the person in question does not have correct measuring/dosing equipment, and they wish to be sure that they do not dose too low. By requiring dosing devices/measuring cups to be made available to cleaning staff, Nordic Ecolabelling is preventing over-dosing, as far as possible.

Background to requirement O5

The consumption of cleaning products plays a key role in reducing ecotoxic substances, improving the working environment and setting targets aimed at reducing the consumption of resources.

Together with transport, consumption of cleaning products is perhaps the most significant environmental impact from cleaning services. Reducing consumption of cleaning products, and thereby water consumption, will also reduce the impact of repeated heavy lifting for machinery. There is a great variation in the consumption of cleaning products, depending on the cleaning tasks involved.

The use of microfibre mops or cloths use less chemicals during the actual cleaning, but these are not "chemical-free" methods, since cleaning products are used to wash mops and cloths after use (10-40 % of the total consumption, is the experience from licensing).

In isolated terms, the degree of soiling/dirt has a great influence on the amount of cleaning products used. In overall terms, however, the degree of soiling is less significant, the more different customers the cleaning service have.

As the environment is affected, whether laundering takes place internally or externally, external consumption of cleaning products must also be included.

When using external laundries, the products used to wash the applicant's mops and cloths are included. The alternative to using the laundry's data is to use a conservative template value (11 ml/kg) based on experience from the licensing of textile detergents for professional use. Textile detergent in powder form must be multiplied by five to calculate the consumption of cleaning products. This is to compensate for the water content of liquid products, so that the consumption of cleaning products, whether in liquid or powder form, is comparable. This also applies to cleaning products in solid form, like tablets.

The limit value for consumption is tightened from 400 to 300 microlitres/ m^2 after a review of licensees. There is variation in the data, but the new limit value should be realistic based on licence data. The limit value allows for flexibility of different sites.

The volume of products used for cleaning windows is only set as an information requirement because it is difficult to relate the consumption to a specific unit. "Square metres cleaned" is not suitable in this case since cleaning services do not use this unit for their tasks.

Cleaning products that are used by sub-suppliers:

- If the sub-supplier uses the applicant's cleaning products (that the applicant has purchased) – the volume of products must be included
- If the sub-supplier is Nordic Swan Ecolabelled and use their own cleaning products – the volume of products must not be included (as for Textile services and use of sub-suppliers)
- If the sub-supplier is not Nordic Swan Ecolabelled and use their own cleaning products, the volume of products must not be included – but, as in the criteria for Textile services, the chemicals must fulfil the requirements on hazard classification and substances.

Background to requirement P1

With this point score requirement, Nordic Ecolabelling promotes companies that have a lower consumption than the obligatory requirement, the use of concentrated products, and aims to incentivise the increased use of water and microfibre cloths and mops where applicable.

Background to requirement O6

As previously stated, the use of cleaning products plays a significant role in the cleaning services environmental impact. A large proportion of the products used in ordinary cleaning can be ecolabelled under the ecolabelling systems in the Nordic region (such as the Nordic Swan Ecolabel, the EU Ecolabel or Good Environmental Choice). The ratio of ecolabelled cleaning agents provide good opportunities to choose an ecofriendly solution.

The requirement is easy to document, as the suppliers can provide lists of the cleaning products that are ecolabelled and not ecolabelled together with the amounts purchased.

Experience with this requirement shows that companies that apply for Nordic Swan Ecolabelling typically cut down the amounts of the various products they use, and significantly increase the ratio of ecolabelled products. Data collected for the evaluation in 2023 shows that the mean value for the Nordic Swan Ecolabelled companies are well above the limit of 90% ecolabelled .

Textile detergents for washing mops and cloths are to be included, both for internal and external laundering.

Background to requirement P2

With this point score requirement Nordic Ecolabelling promotes the cleaning services that has higher amount of ecolabelled cleaning products than the obligatory requirement and wish to stimulate and encourage to 100% ecolabelled cleaning products in the future.

Background to requirement O7

Treated waters include deionised or demineralised water, and other waters without surfactants, and with a pH level of 4–10.

New types of treated waters, marketed as effective cleaning agents, as well as “chemical-free cleaning" and "alternatives to chemical disinfectants” are emerging on the market. The different treatments can affect the treated water's pH and properties, and substances added or being generated in the process can have the same effect. Nordic Ecolabelling seeks to establish a comprehensive overview of the use of such products to be able to set relevant requirements for them in future criteria generations. The acceptable range of pH is set to 4–10, because both products of high and low pH can harm aquatic life, and treated waters of more neutral pH are therefore preferable. Products with pH outside of this range, will be considered as other cleaning agents and not be exempted from requirement O5 consumption of cleaning products and O6 proportion of ecolabelled products.

Not all “waters” marketing for cleaning is considered treated waters, as some of them is added harmful substances, or harmful substances are being formed in the treatment process. This is the case for e.g. ECA water and ozone water. Therefore, all types of potential treated waters must be individually evaluated by Nordic Ecolabelling.

Background to requirement O8

The use of treated water, such as deionised/demineralised water, so called "ultra clean water" for window cleaning has superseded the use of tap water when cleaning windows outdoors. Most companies use only deionised/demineralised water or a combination of this and tap water. For cleaning windows indoors, tap water and glass cleaner/detergent is used. In some cases, deionised/demineralised water is used indoors, but this is not the norm.

Window cleaning services that Nordic Ecolabelling has contacted state the following advantages of using deionised/demineralised water for window cleaning:

- No other cleaning products are used
- No need for ladders or electrical lifts (saves fuel)
- Better working environment and better ergonomics compared to the use of lifts and ladders
- Financial savings
- Greater variety in the work
- Time saving
- Easier to access the surfaces to be cleaned, as many places cannot be accessed by ladders or lifts

The window cleaning services indicate the following disadvantages:

- Poorer quality (compared to traditional polishing, where scraping and drying is done afterwards)
- Increased water consumption
- Energy consumption
- Expensive at start-up (purchase of a lot of equipment compared to traditional cleaning)
- Requires heating of the water tank in cold temperatures
- Requires good training of cleaning personnel when working at heights
- Ergonomics challenge, when working with long poles and at heights

Deionised/demineralised water systems are based on reverse osmosis and ion exchange/deionisation water purification. Systems are available in different sizes for installation in smaller vans and larger vans (from approx. 375 l) or on trailers (800–1000 l), as mobile plants on trolleys (purifying water as it is consumed) or as stationary plants for installation in buildings, from which water can be tapped and filled in the car's water tank, according to information from Purewash[2] and Ecostream[3], among others.

The Danish companies estimate that between 120 l and 200 l of tap water (tap water) is used to produce 100 l of deionised/demineralised water. If the company has internal production, water consumption for the production can be measured directly. If the company buys deionised/demineralised water externally, water consumption for the production can be documented by the producer.

It is considered that it is not possible to set requirements for the energy consumption of deionised/demineralised water plants. Several companies buy "clean water" externally and thus have no influence on this.

There are several advantages to using deionised/demineralised water. At the same time, water consumption is high, and Nordic Ecolabelling therefore requires a maximum amount of water for production, as well as routines to ensure that the system is maintained so that water consumption is minimised.

Background to requirement O9

The use of cleaning products is of great significance to the environmental impact of cleaning services. Requirements of non-ecolabelled products are selected based on Nordic Ecolabelling's objective to reduce ecotoxic substances in the aquatic environment, and to safeguard the working environment. The table in requirement O8 (non-ecolabelled products, hazard classification) is updated in accordance with the CLP regulation and harmonized with the requirements for Nordic Swan Ecolabelling of Cleaning Agents. In addition, prohibition of substances which are labelled EUH 208 "Contains" (name of the sensitising substance) May cause an allergic reaction", as well as spray products classified as H335 (STOT SE category 3), H314 (Skin corrosion, Category 1A, 1B, 1C) or H318 (Serious eye damage, category 1) are excluded. It is specified that the requirement also applies to chemicals added to mops at laundries (e.g. as a cartridge which releases soap during use).

The Nordic Swan Ecolabel has also included the new CLP classifications to align with the European Green Deal's goal of a toxic-free environment. This inclusion reflects the need to establish hazard identification for endocrine disruptors and addresses criteria for environmental toxicity, persistency, mobility, and bioaccumulation. By incorporating these classifications, Nordic Swan Ecolabel ensures that the criteria relate to up-to-date scientific understanding and regulatory compliance. Additionally, the inclusion of PMT and vPvM substances is crucial due to their persistence, mobility, and potential impact on water quality. The Nordic Swan Ecolabel aims for comprehensive hazard identification and protection of the environment and human health.

[2] Accessed on April 22, 2024, https://www.purewash.dk/vinduespudsning/rentvandsproduktion/
[3] Accessed on April 22, 2024, https://www.nowas.dk/produkter/184-rentvandssystemer-amp-vaskeanlaeg/17379-ecostream-rentvandsanlaeg-375-ltr-med-100-m-slange/

Background to requirement O10

The substances that may not be included now generally correspond to equivalent requirements in Nordic Swan Ecolabelling of Cleaning Agents, except for the definitions of ingoing substances and nanomaterials, which have been updated.

Alkylphenols (AP), alkylphenol ethoxylates (APEO) and other alkylphenol derivates (APD)

Alkylphenols is a group of mainly non-ionic surfactants that are produced in large volumes and their use leads to widespread release to the aquatic environment. APEOs are highly toxic to aquatic organisms and degrade to more environmentally persistent compounds (APDs). Ethoxylated nonylphenol and several other alkylphenols are included in the Candidate List due to endocrine disrupting properties. Other alkylphenols are polyalkylated phenols such as butylated hydroxytoluene (BHT) and butylated hydroxyanisole (BHA) which have antioxidant properties. An exception is made for BHT in perfumes with the limit of ≤100 ppm provided that the amount in the cosmetic products does not exceed 1 ppm. This exemption is made since BHT is used to ensure the stability of the perfume mixture which can affect the stability of the entire product.

Bisphenols and bisphenol derivatives

Several bisphenols with the general bisphenol structure and bisphenol derivatives which have constituents with structural properties common to bisphenols are now prohibited. Based on the potential for widespread use and available information on potential endocrine disruptors, reproductive toxicity and PBT/vPvB properties, 34 substances were identified in need for further regulatory risk management in EU[4].

Benzalkonium chloride

Benzalkonium chlorides (BACs) is part of a group of chemicals with wide applications due to their antimicrobial properties against bacteria, fungi and viruses. There is a risk that frequent and widespread use of BACs in commercial products can generate selective environments for microbes and contribute to resistance to antibiotics. Furthermore, there is a risk to consumer exposure due to their toxicity and allergenic properties.

Boric acid, borates, and perborates

Boric acid, borates and perborates have many uses, such as stain removal, oxidizing and bleaching agents. In cosmetic products they are used as oxidisers and buffers in oral hygiene products and as whiteners. They are classified as toxic to reproduction and pose a risk to consumers.

[4] Annex XV restriction report https://echa.europa.eu/documents/10162/450ca46b-493f-fd0c-afec-c3aea39de487

Linear alkylbenzene sulphonates (LAS)

LAS is a major anionic surfactant with important applications within household detergents and industrial cleaning agents. LAS is relatively rapidly aerobically degraded, but only very slowly or not at all degraded under anaerobic conditions. Therefore, LAS is mostly found in very high concentrations in sewage sludge and enters the soil compartment because of sludge application.

Ethylenediamine tetraacetate

Ethylenediaminetetraacetic acid (EDTA) and diethylenetriaminepentaacetate (DTPA) is used in many products, such as detergents, liquid soaps, and cosmetics to improve stability. EDTA, DTPA and their salts are not readily degradable, furthermore, they are both classified toxic for reproduction and pose a risk to consumers. For EDTA, the EU's risk assessment states that under the conditions at municipal water treatment plants EDTA is either not broken down or only breaks down to a slight degree. Up to date in Europe, EDTA has been replaced in virtually all consumer products by readily biodegradable alternatives such as MGDA (methylglycine diacetic acid) and GLDA (glutamic acid diacetic acid).

Nanomaterials/-particles

Nanomaterials are a diverse group of materials under the size of 100 nm. Due to their small size and large surface area, nanoparticles are often more reactive and may have other properties compared to larger particles of the same material. Furthermore, different sizes, shapes, surface modifications and coatings can also change their physical and chemical properties. Nanoparticles can cross biological membranes and be absorbed by cells and organs. One of the main concerns is related to free nanoparticles, as some of these – when inhaled – can reach deep into the lungs, where uptake into the blood is more likely.

There is concern among public authorities, scientists, environmental organisations, and others about the insufficient knowledge regarding the potential detrimental effects on health and the environment[5,6]. Nordic Ecolabelling takes these concerns seriously and applies the precautionary principle to exclude potentially hazardous nanomaterials from products.

Microplastics

Microplastics are synthetic polymer microparticles as defined in REACH Regulation ((EC) No 1907/2006), Annex XVII, Entry no. 78: Synthetic polymers that are solid and which fulfil both of the following conditions:

> (a) are contained in particles and constitute at least 1% by weight of those particles; or build a continuous surface coating on particles;

[5] UNEP (2017) Frontiers 2017 Emerging Issues of Environmental Concern. United Nations Environment Programme, Nairobi. https://wedocs.unep.org/bitstream/handle/20.500.11822/22255/Frontiers_2017_EN.pdf?sequence=1&isAllowed=y

[6] SCCS (2019) Guidance on the Safety Assessment of Nanomaterials in Cosmetics. SCCS/1611/19. https://ec.europa.eu/health/sites/health/files/scientific_committees/consumer_safety/docs/sccs_o_233.pdf

(b) at least 1% by weight of the particles referred to in point (a) fulfil either of the following conditions:

i. all dimensions of the particles are equal to or less than 5 mm;

ii. the length of the particles is equal to or less than 15 mm and their length to diameter ratio is greater than 3.

The following polymers are excluded from this designation:

(a) polymers that are the result of a polymerisation process that has taken place in nature, independently of the process through which they have been extracted, which are not chemically modified substances;
(b) polymers that are degradable as proved in accordance with Appendix 15 [to REACH, Regulation (EC) No 1907/2006].
(c) polymers that have a solubility greater than 2 g/L as proved in accordance with Appendix 16 [to REACH, Regulation (EC) No 1907/2006].
(d) polymers that do not contain carbon atoms in their chemical structure.

N.B. The following "Conditions of restriction" paragraphs apply: 1 (concentration limit in mixtures), 2 (definitions), 3 (particle size limits). The remaining points do not apply, e.g. 4 (Paragraph 1 shall not apply to the placing on the market of:), 5 (derogations), e.g. 5 (b) "synthetic polymer microparticles the physical properties of which are permanently modified during intended end use in such a way that the polymer no longer falls within the scope of this entry".

Microplastics can have harmful effects on health and the environment. This is due to size, low degradability, and the fact that they accumulate in living organisms such as fish and shellfish and affect them physically or because they carry harmful chemicals with them. There is a lack of knowledge about the effect of plastic, and Nordic Ecolabelling therefore wants to contribute to reducing emissions of microplastics to the environment.

Methyldibromo glutaronitrile (MG, CAS No. 35691–65–7)

Methyldibromo glutaronitrile (MDBGN) has applications within cosmetics and industrial products and is a bromine-containing preservative. MDBGN has been shown to be a sensitizer and cause for allergic contact dermatitis and is therefore banned for use in stay-on and rinse-off products.

Nitromusk and polycyclic musk compounds

Nitromusks and polycyclic musks generally have undesirable properties regarding both health and the environment. Some such compounds are already excluded from use via the requirement concerning CMR substances.

NTA (nitrilotriacetic acid), CAS-no. 139–13–9 and its salts

NTA is an anthropogenic substance and does not naturally occur in the environment and is present in the environment because of its release in sewage from processing. NTA is generally used in industrial cleaning products and is persistent and classified as carcinogenic.

Optical brighteners

Optical brighteners are not readily biodegradable. They are however photodegradable in the presence of light, which has been showed by different studies. Optical brighteners absorb to the sludge in the water treatment plants, which is not wanted, since there is a wish to keep the sludge as free from chemicals as possible.

Organic chlorine compounds, hypochlorites and hypochlorous acid

Organic chlorine compounds, hypochlorites and hypochlorous acid are sometimes used as disinfecting and antibacterial substances and as bleaching agents. Organic chlorine compounds can be, or lead to the formation of, toxic and bioaccumulative substances that are difficult to break down. Chlorine-based bleaching agents generally have undesirable health and environmental properties. Hypochlorous acid is not classified, and hypochlorites have the classification Acute toxicity (H400) and thus, they are not covered by the general requirement concerning environmentally hazardous substances. However, both pose an environmental risk due to the possibility of organic chlorine compounds forming.

Disinfectant is not a part of the product group, but still we wish to make it clear that electrochemically activated water (ECA water) forms hypochlorite and is not permitted as ordinary cleaning, due to our ban of "reactive chlorine compounds, such as sodium hypochlorite". Ozone water is not allowed because of the harmful effect on health from ozone.

PBT and vPvB

Per- and polyfluoroalkyl substances (PFAS) are used in many types of products due to their water and dirt repellent properties. These compounds constitute a group of substances that have highly problematic intrinsic hazardous properties. They are extremely persistent and accumulate in the body. They are spread all over the globe, from the large oceans to the Arctic, and are found in e.g. wild birds and fish and their eggs. Also, shorter chain compounds (2–6 carbon atoms) have been discovered in nature. The substances in this group are suspected to be endocrine disruptors, carcinogenic and to have a negative impact on the human immune system. PFOA, APFO (ammoniumpentadecafluorooctanoate) and certain fluoro acids are included in the Candidate List due to being reprotoxic, as well as having PBT properties.

Phthalates (esters of phthalic acid, CAS No. 88–99–3)

Several phthalates are identified as endocrine disruptors and some of them are classified as reprotoxic. For these reasons several phthalates are included in the Candidate list. Based on their hazardous properties, phthalates pose a threat to the environment and human health and there is a ban on this group of substances.

Poly- and perfluorinated substances (PFAS)

Per- and polyfluorinated substances (PFAS) are used in many types of products due to their water and dirt repellent properties. These compounds constitute a

group of substances that have highly problematic intrinsic hazardous properties. They are extremely persistent and accumulate in the body. They are spread all over the globe, from the large oceans to the Arctic, and are found in e.g. wild birds and fish and their eggs. Also, shorter chain compounds (2–6 carbon atoms) have been discovered in nature. The substances in this group are suspected to be endocrine disruptors, carcinogenic and to have a negative impact on the human immune system. Perfluorooctanoic acid (PFOA), Ammonium pentadecafluorooctanoate (APFO) and certain fluoro acids are included in the Candidate List due to being reprotoxic, as well as having PBT properties.

Siloxanes

Siloxanes are substances that have a widespread use in cosmetic products, such as skin care, hair care and make-up. The most used siloxanes in cosmetic products are the cyclic siloxanes cyclotetrasiloxane (D4), cyclopentasiloxane (D5) and cyclohexasiloxane (D6) and the linear polydimethylsiloxane (PDMS) also known as dimethicone. The cyclic siloxanes D4, D5 and D6 are toxic to human health and the environment having PBT and/or vPvB properties, whereas dimethicone is not considered toxic or bioaccumulative. However, there is a concern that over time, dimethicone will slowly degrade into smaller units exerting the same properties as the cyclic siloxanes[7]. Therefore, the use of both cyclic and linear siloxanes is prohibited with the exemption for leave-on products, where linear siloxanes can be used as the products are intended to stay on the skin and not be rinsed off released directly into the wastewater.

Silver, colloidal silver and nanosilver

Silver is antibacterial agent used in various consumer products, typically in nano form, where it has a greater effect per total amount of silver. Silver is hazardous to health with since it is classified as reprotoxic and under assessment for endocrine disruptive properties. In addition, silver is extremely hazardous to the environment, classified H400 and H410 with an M factor of 10–1000 depending on particle size.

Substances on the REACH Candidate list of SVHC substances
https://www.echa.europa.eu/candidate-list-table

The Candidate List identifies substances of very high concern which fulfil the criteria in article 57 of the REACH Regulation (EC 1907/2006). The list includes carcinogenic; mutagenic; and reprotoxic substances (CMR, categories 1A and 1B in accordance with the CLP Regulation); and PBT (persistent, bioaccumulative and toxic) and vPvB (very persistent and very bioaccumulative) substances (as defined in REACH Annex XIII). In addition, two more substance groups are included if they are of equivalent level of concern (ELoC) as the ones previously mentioned. These are endocrine disruptors and substances which are environmentally hazardous without fulfilling the requirements for PBT or vPvB. Based on these adverse characteristics, Nordic Ecolabelling prohibits substances on the Candidate List. This means that we act ahead of the legislation and ban

[7] Danish Environmental Protection Agency, Survey, and risk assessment of siloxanes in cosmetic products, Survey of chemical sub-stances in consumer products No. 185, June 2021

the substances before they are subject to authorization and restriction in accordance with REACH.

Potential or identified endocrine disruptors according to any of the EU member state initiative "Endocrine Disruptor Lists" List I; II; and III:

Endocrine disruptors (EDs) are chemicals that alter the functioning of the endocrine (hormone) system and consequently cause adverse health effects. The term potential EDs is used for chemicals with properties that make them suspected to be EDs. The hormone system regulates many vital processes in living organisms and when normal signalling is disturbed, adverse effects may result. EDs raise high concern for their risk of causing serious negative impact on the environment as well as on human health specifically. Special concern is raised for effects on reproduction and development and about possible links to increases in public health diseases. While effects in wildlife populations have been confirmed, evidence is pointing to effects also in humans.

PBT and vPvB are abbreviations for substances that are persistent, bioaccumulative and toxic, and very persistent and very bioaccumulative, respectively, in accordance with REACH Annex XIII. This means that they are not biodegradable and that they accumulate in living organisms. Based on these adverse characteristics they pose a threat to the environment and human health. They are prohibited in all Nordic Swan Ecolabel products.

Triclosan

Triclosan is an antibacterial agent used in different products such as toothpaste and deodorants. An antibacterial agent is a substance that inhibits or stops growth of microorganisms such as bacteria, fungi, or protozoa (single-celled organisms) and can be applied on a treated article or constituent in a chemical product. It is suspected that some antibacterial agents are contributing to the increasing resistance to antibiotics in society. Consequently, the bacteria are developing new methods of resisting the effects of the antibiotic. This, in turn, can lead to certain diseases becoming more difficult to treat. Furthermore, they can harm bacteria that are necessary for the treatment of water at water treatment plants. Therefore, products containing antibacterial agents should be avoided.

VOC

Volatile organic compounds (VOCs) are to be considered particularly concerning due to their inherent properties. They can be absorbed through the lungs and skin and cause damage to various organs. Prolonged exposure to certain organic solvents can cause chronic damage to the brain and nervous system, while other organic solvents can cause cancer or reproductive damage[8]. The occupational hygiene threshold values between different VOCs are large. I. e. the short time limit for ethanol (mg/m^3) is for example 50 times higher than for formaldehyde, and to reach the occupational hygiene threshold limit for ethanol and isopropanol several bottles of cleaners would be needed to be used in a room during a

[8] Bruckner, J. V., Anand, S. S., & Warren, D. A. (2008). Toxic effects of solvents and vapours. Casarette and Doull's Toxicology: The Basic Science of Poison, 7th Ed. Klaassen CD (Eds.), 981-1051.

workday. The Nordic Ecolabel has decided to exempt acetic acid isopropanol and ethanol from the requirement. The exemption includes solvents in fragrances.

Background to requirement O11

The background to this requirement comes from the report "Cleaning sprays, chemicals, asthma and COPD"[9] which has shown that persons who have worked with cleaning for more than one year are at significantly greater risk of developing asthma and COPD than the rest of the population.

An overview from 2006[10] showed that performing cleaning tasks increases the risk of asthma for professional cleaners and other occupations that are involved in cleaning tasks.

To reduce this risk for the employees of a company offering Nordic Swan Ecolabelled cleaning services, we have prohibited the use of perfumes and sensitising preservatives in products used in spray bottles by the employees.

Perfume and allergenic preservatives may not be included in current requirements of spray products in Nordic Swan Ecolabelled Cleaning Agents (O19) for perfume and requirement O9 for preservatives. Other cleaning agents are not subject to equivalent limitations.

To ensure that products transferred to spray bottles/trigger spray bottles by the cleaning services itself do not contain perfume or allergenic preservatives either, a procedure to ensure this is required to be drawn up (e.g. by always checking the safety data sheet or product information sheet for the relevant products).

7 Transport requirements

Background to the requirement O12

For cleaning services, fuel consumption from transports is a significant source of the service's climate impact. To reduce emissions, it is necessary to shift to more energy-efficient transports and move away from fossil fuels. The steerability of vehicle types is greatest when new leasing contracts are established, or vehicles are purchased. Combined with the possibility of collecting a point for low fuel consumption, this is a good way to limit the climate impact from the transportation activities of cleaning services.

In the previous criteria generation, newly purchases or leased vehicles had to meet the latest Euronorm standards. In this generation of criteria, the requirement has been tightened. Now all new purchase of vehicles must be plug-in hybrid or run on electricity, natural gas/biogas or hydrogen. This helps to ensure a continuous transition to vehicles with less climate impact. The reason why HVO100, RME100, FAME100 are not included in the requirement is that the long-term restructuring of the transport sector needs to be done with so-called zero emission vehicles (electric or gas vehicles). Biofuels, HVO100, RME100, FAME100, are renewable fuels and it is a good transitional solution for existing vehicles before all vehicles are converted to other engines, but when we

[9] Bakke JV. Nilsen S. Renholdssprayer, kjemikalier, astma og kols. Allergi i Praksis 2014; 3
[10] Steinar K. Nilsen, cand. real (PhD), senior researcher, SINTEF Byggforsk

set requirements for new purchases, we believe that they must be the most sustainable vehicles. HVO, RME, FAME have more disadvantages than electricity and gas, among other things related to the raw materials, and usually have a higher climate impact over the life cycle.

Electric cars have become increasingly available in recent years, especially among private cars and light goods vehicles, which are the most used vehicles in the cleaning services sector. All Nordic countries have a high enough availability of electric cars for Nordic Ecolabelling to set this requirement. Depending on the country, as much as 18–80 percent of newly registered private cars are electric.

Nordic Ecolabelling considers long-term sustainable vehicles to primarily refer to electrified vehicles. However, natural gas/biogas (CNG/CBG) and hydrogen are also considered good alternatives. This is in line with the Swedish procurement agency's most advanced sustainability requirements for personal cars and light goods vehicles.[11,12]

Some companies have challenges related to electric vehicle infrastructure, especially in rural areas. Nordic Ecolabel therefore allow plug-in hybrid vehicles as a solution for newly purchased and newly leased vehicles.

Background to requirement O13

Together with consumption of chemicals, petrol and diesel consumption account for the most significant environmental impacts from cleaning services. Transport indicators are set up based on Nordic Ecolabelling's aim to reduce energy consumption and reduce airborne environmental pollution.

In a few cases, where fuel consumption is not provided, or a high level of private vehicles is used for work purposes, the employees are compensated for actual mileage and not fuel consumption. In such cases, there is little steerability for the cleaning services company and often not possible to establish the actual fuel consumption. The value of 11 litres petrol per 100 km can be assumed to be a conservative figure. Alternatively, the base figure of 1.3 x car's fuel consumption based on Worldwide harmonised Light vehicle Test Procedure (WLTP) can be used. The reason for multiplying by a factor is that the fuel consumption measured in tests is lower than the actual consumption for normal transport. The Commissions has made a report[13] that stated the following "The first data from a sample of 600 000 cars indicates that the real-world fuel consumption and CO_2 emissions from diesel and petrol vehicles on the road are around 20% higher than indicated by the official values from the standardised WLTP type-approval test used for regulatory purposes. This discrepancy is in line with what the Commission had anticipated". The factor of 1.3 is used to ensure that it is not an immediate calculation advantage to use this option.

[11] Hållbarhetskrav för Energi/koldioxidkrav på lätta lastbilar | Upphandlingsmyndigheten
[12] Hållbarhetskrav för Energi/koldioxidkrav för fordon med maximalt fyra sittplatser utöver förarplatsen | Upphandlingsmyndigheten
[13] Commission report under Article 12(3) of Regulation (EU) 2019/631 on the evolution of the real-world CO2 emissions gap for passenger cars and light commercial vehicles and containing the anonymised and aggregated real-world datasets referred to in Article 12 of Commission Implementing Regulation (EU) 2021/392, March 2024, https://climate.ec.europa.eu/document/download/b644dafe-1385-4b56-98d9-21e7e9f3601b_en?filename=report.pdf

The requirement covers all motorized vehicles. If bikes are used for transport, this will contribute positively to the accounts.

Cars and vehicles with a lift and/or water tanks is exempted from the requirement as they are a necessary tool for window cleaning purposes. Because of the size and weight of the cars with lift and/or water tanks, the vehicles are often heavier, and with a higher need and consumption of fuel. Nordic Ecolabelling does not have enough data to make requirements for these types of vehicles, and the potential and steerability is low.

Background to requirement P4

Nordic Ecolabelling promotes the companies that has a low fuel consumption and has implemented measures that lead to lower CO_2 emissions for transport between cleaning assignments.

8 Resource efficiency

Background to requirement O14

The cleaning service must recycle the packaging of the cleaning products. These products are often made of plastics that can and should be recycled to ensure a circular economy of the packaging material. If the waste contractor at the customer's site does not provide all the necessary waste fractions, it is expected that the cleaning service will manage the waste using their own procedures. For example, the cleaning service may return worn out textiles or plastic bottles and handle them appropriately.

The goals set for material recycling in the European Union and the Nordic countries are not on the right trajectory[14]. Ensuring that plastic waste is recycled is crucial for reducing GHG emissions from the production of new materials, which usually originates from petroleum[15]. The Nordic Swan ecolabelled cleaning products must comply with material requirements regarding packaging aimed at ensuring that the packaging can be (material) recycled, and the Nordic Swan ecolabelled cleaning services play an important role in ensuring that the packaging is put into the recycling loop as the European Parliament states that "…the low share of plastic recycling in the EU means significant losses for the economy as well as for the environment. It is estimated that 95% of the value of plastic packaging material is lost to the economy after a short first-use cycle".[16]

Background to the requirement O15

The use of plastic bags for waste and garbage disposal is an essential part of the cleaning services. Since the bags used for waste and garbage disposal are usually made of plastics it makes sense to limit the use of virgin, fossil feedstock and encourage the use of recycled plastics. The plastic bags are used for waste, and as such, the plastic does not have to be of a high quality, compared to the plastic

[14] https://www.eea.europa.eu/publications/many-eu-member-states
[15] https://avfallnorge.no/om-bransjen/plastavfall
[16] https://www.europarl.europa.eu/topics/en/article/20181212STO21610/plastic-waste-and-recycling-in-the-eu-facts-and-figures

and recycled plastics used in other types of packaging and the food packaging industry. Recycling plastics help conserve this raw material and to reduce piles of waste. There are multiple suppliers in the Nordic countries that supplies recycled garbage bags. The suppliers can offer different sizes ranging from 10 L – 240 L bags in different colours. When using plastic bags, using ecolabelled by the Blue Angel and/or plastic bags made from recycled material is preferred.

Nordic Ecolabelling want our licensees to nudge their customers into reducing their plastic waste and the use of plastic bags. Nudging refers to measures that influence customer behaviour to reduce the use of plastic bags, such as minimising the number of bins and changing garbage bags less frequently where it's unnecessary. For example, this can be achieved by reducing the number of waste bins on site at the customer's premises, thereby decreasing the frequency of garbage bag changes where it's not needed.

9 Use of ecolabelled products and services

Background to requirement O16

Cleaning services are often responsible for replenishing paper. i.e. toilet paper and paper towels at the customer's premises. If ecolabelled products are used in these cases, the cleaning services has an influence on further environmental benefits regarding their services.

Nordic Ecolabelling requires the purchasing of ecolabelled products and services, as these have a lower environmental impact compared with non-ecolabelled purchases[17]. Nordic Ecolabelling's environmental requirements for tissue paper cover everything from forestry and the choice of raw materials to low energy consumption and low carbon emissions, emissions to air and water and control of the use of chemicals and eutrophying and acidifying substances such as sulphur and nitrogen oxides. Labelling only with the PEFC or FSC logo is not sufficient, however, as these labels only cover the forest raw material. Paper labelled with the Nordic Swan Ecolabel, or the EU Ecolabel ensures that, as well as the forest raw material being sustainable, the manufacturing process has low emissions to air and water. It is manufactured with efficient energy use and a limited amount of chemicals. Copy/printing paper refers to ordinary white, office paper. Tissue paper includes toilet paper, kitchen rolls and paper towels.

Background to requirement P5

Nordic Ecolabelling wants to encourage and award the purchases and good environmental practices that the cleaning services implements and performs. Cleaning services are often responsible for replenishing toilet paper, hand soap and paper towels etc, at the customers premises. In these cases, the cleaning service has a direct influence on the consumable goods used. Ecolabelled products and services has documented a lower environmental impact compared to non-ecolabelled products and services[18].

[17] https://environment.ec.europa.eu/topics/circular-economy/eu-ecolabel/about-eu-ecolabel_en
[18] https://environment.ec.europa.eu/topics/circular-economy/eu-ecolabel/about-eu-ecolabel_en

The requirement for the percentage of ecolabelled products is calculated based on the total amount of goods the cleaning services purchases: If the customer don't want the cleaning services to purchase these goods, the cleaning services is not accountable for these purchases.

Hand cloth towels: Once the hand cloth towels have reached their end of life, the towel rolls are collected and can be used as cleaning cloths, etc.

Hand soap and hand detergents: Is used in big quantities and as such one must consider what chemicals are released to the sewage system. Ecolabelled soap complies with strict requirements both for environmental and health concerns as well as limiting the content of allergenic and bio-accumulative substances. There are multiple products available in the market, therefore the cleaning services can obtain one point if 100% of the hand soap is ecolabelled.

Work wear: the textile industry is responsible for huge emissions of greenhouse gases every year, both regarding production and end-of-use waste management. Nordic Ecolabelling rewards cleaning services using ecolabelled work wear as these fabrics must comply with requirements to the production processes as well as quality requirements to the textile and user phase of the product.

Cloths and mops: Necessary products in a cleaning service. Ecolabelled microfibre cloths and mops has a documented effect on cleaning: The cloths and mops clean without wear and tear of the surface. The cloths are very durable and are designed to withstand at least 200 washes at 60 degrees Celsius. The production of the microfibre has taken account of the environment in all stages.

Car wash installations: Cars and transport vehicles are an essential part of many cleaning services. An ecolabelled car wash installation only uses ecolabelled detergents. The wastewater (often containing heavy metals, oils and hazardous chemicals) is treated before leaving the car wash. The amount of water used per wash is constricted to 90 litres compared to up to 400 litres per wash in conventional car wash installations.

Laundry service: For cleaning services using an external laundry service, Nordic Ecolabelling rewards the use of ecolabelled laundry services. A Nordic Swan Ecolabelled laundry service is energy efficient and has a lower climate impact compared to non-ecolabelled laundries. It consumes limited amounts of water and only uses chemicals complying with stringent environmental and health requirements. It also reduces the environmental impact of transport involved in distribution.

Plastic bags: The Nordic Swan Ecolabelling wants to reward companies using plastic bags that are ecolabelled with Blue Angel. Garbage bags are usually made from plastic. Plastic is a valuable material since it is made from one or our most valuable resources, oil. Recycling plastics help conserve this raw material and to reduce piles of waste. Nordic Ecolabelling want to reward cleaning services using ecolabelled recycled plastic bags, and through our licenced cleaning services create a demand for these plastic bags in the market. By using recycled plastic, we reduce the consumption of virgin, fossil feedstock and thus the greenhouse gas emissions associated with the production and waste management of plastic bags. The aim of encouraging the purchase of ecolabelled plastic bags with the Blue Angel is to promote products with a high percentage of recycled plastics. The ecolabelled bags provide a high level of protection to consumers and the

environment by establishing basic requirements for the use and concentration of contaminants. "Sustainable environmental effects are achieved by combining these two fundamental fields of requirements: protection of resources and control of contamination levels".[19]

Nordic Ecolabelling reward cleaning services that purchase 100% of all printed matter from an ecolabelled printing company. Printed material includes, for example, flyers, brochures, notepads and stationery with the company's logo. It is not obligatory for the printed materials themselves to be ecolabelled, but they must be sourced from an ecolabelled printing company.

10 Quality

Background to requirement O18

It is not possible to set absolute requirements for the quality of cleaning, as it must be up to the customer and the cleaning services to agree on the quality based on the customer's requirements and needs. Like other products and services for which Nordic Ecolabelling set requirements, Nordic Swan Ecolabelled cleaning services also depend on the best possible quality assurance. Certain minimum requirements have therefore been drawn up, including a system to follow up on the agreed upon quality of cleaning.

There is a Nordic framework for quality control systems and a standardised Nordic system for the measurement and inspection of the agreed upon cleaning quality – INSTA 800. INSTA 800 is more detailed and as such complies with the European standard, EN 13549 (2001) "Cleaning services – Basic requirements and recommendations for quality measuring systems".

Background to requirement O19

To perform cleaning of the agreed upon quality and with the right handling of cleaning products and machines, it is important that cleaning personnel have written instructions for the performance of the work and information about cleaning products they can use.

This information and these instructions must contribute as optimal as possible to the performance of cleaning in compliance with the ecolabelling requirements.

Background to requirement O20

By ensuring that the cleaning services has a quality management system that can handle complaints, non-conformances and information to Nordic Ecolabelling in conjunction with changes, Nordic Ecolabelling assures that the company always makes sure that their ongoing changes/improvements in the company are in accordance with the Nordic Swan Ecolabelling requirements.

[19] Basic Award Criteria Edition January 2019 Version 8: BLUE ANGEL The German Ecolabel, Products made from Recycled Plastics

Background to requirement O21

To ensure that in the duration of the licence the cleaning services complies with the requirements of the Nordic Swan Ecolabel, a procedure must be in place for maintaining the licence. Nordic Ecolabelling's audit of a cleaning services may include an examination of all the requirements above or just a selection. This may involve an on-site inspection visit or a request for documentation to be provided.

11 Ethics and working environment

Background to requirement O22

Nordic Ecolabelling considers training to be very important to e.g. handle chemicals in a safe, healthy and environmentally responsible way.

Education and training are also important to eliminate the general perception that cleaning is unskilled work. Marie Aurell from Linköping University in Sweden has researched work and identity within the cleaning sector. Important aspects of work and identity issues are ethical, cultural and service-related. These aspects are discussed in an article by Marja Aulanko, in which she shows how cleaning is far more than technical performance.[20]

The requirement's examples of training have been prepared based on a technical memo from Ecolabelling Denmark, in which several existing training programmes were assessed. The memo concerns training under AMU (Arbejdsmarkedsuddannelser in Denmark), PRYL (Projekt Yrkesbevis Lokalvårdare in Sweden) and EFCL/Uni-Europa (European Federation of Cleaning Industries/EU Trade Union).

Ecodriving is also included in the requirements of the content of training. Ecodriving is training in driving with the best possible fuel economy, and surveys show that this can ensure a reduction of fuel consumption of 5–10%.

It is important to point out that using temporary employees does not prevent licence holders from ensuring that these employees also have a suitable level of training, enabling them to fulfil the ecolabelling requirements, and providing them a good working environment.

Knowledge of the business's environmental work and what it means to hold the Nordic Swan Ecolabel is important in giving employees a shared understanding of their environmental work. With proper training, employees will be able to use information about the business's environmental work in their communication, which can be a major competitive advantage in dialogue with potential and existing customers.

Background to requirement O23

In recent years, there has been frequent debate in the Nordic countries concerning cleaning services that employ illicit work/undeclared labour and do

[20] Arbete och identitet – om hur städare blir städare (Work and identity - On how cleaners become cleaners), Marie Aurell, Tema Teknik och social förändring, Linköpings University in Sweden, 2001.

not comply with working environment regulations[21]. The industry has long been characterised by high work pressure, lack of overtime pay, and poor working conditions.[22] Employees in the cleaning industry are vulnerable to exploitation in the workplace: many have a foreign background, there are few educational requirements, the work is physically demanding, and the hours are often inconvenient.**Error! Bookmark not defined.** However, industry organisations, labour inspectorates, and cleaning services have improved collaboration over time, leading to a more professionalised industry, with the majority of actors now operating responsibly.

Applicants and potential applicants have expressed frustration with the unfair competition with companies that base their services on undeclared employees, which allows them to offer significantly lower prices. Nordic Ecolabelling assesses that it is not sufficient to simply refer to national legislation in the criteria document; the Nordic Swan Ecolabel must set requirements that help ensure only cleaning services with serious, sustainable working conditions achieve certification. Nordic Ecolabelling sets ethical requirements to ensure that only legitimate and responsible cleaning services are awarded the Nordic Swan Ecolabel, and that the rights and working conditions of the employees are protected. The purpose of these requirements is not for Nordic Ecolabelling to act as a new version of trade union, but rather to ensure, in general, that employees in Nordic Swan Ecolabelled cleaning services work under fair and serious conditions.

Background to requirement O24

According to a survey by Service Entreprenörerna Almega in Sweden, nearly half the companies use sub-suppliers. More than four out of ten companies themselves work as sub-suppliers[23]. To ensure that non-Nordic Swan Ecolabelled sub-suppliers are also at the professional end of the market, certain minimum requirements are set.

Sub-suppliers are used in different ways and for different reasons across the Nordic countries. To cover the whole of the Nordic region and at the same time be meaningful, a distinction is drawn between the different types of sub-suppliers.

12 Licence maintenance

Background to requirement O26

Nordic Ecolabelling requires that your company has implemented a customer complaint handling system. To document your company's customer complaint handling, you must upload your company's routine describing these activities. The routine should be dated and signed and will normally be part of your company's quality management system.

[21] Osund konkurrens - Arbetsmiljöverket (av.se)
[22] Arbeidstilsynet, March 2023: https://arbeidstilsynet.no/nyheter/arbeidstilsynet-kontrollerer-renholdsbransjen/
[23] 220922-branschrapport-stad-och-service.pdf (almega.se)

If your company does not have a routine for customer complaint handling, it is possible to upload a description of how your company perform these activities. During the on-site inspection visit, Nordic Ecolabelling will check that the customer complaint handling is implemented in your company as described. The customer complaints archive will also be checked during the on-site inspection visit.

13 Changes compared to previous generation

Table 3 Overview of changes to criteria for 076 generation 4 compared with previous generation 3.

Proposed requirement generation 4	Requirement generation 3	Same requirement	Change	New requirement	Comment
O1	O1		X		Requirement is updated
O2	O2		X		Requirement is updated. The template value cleaned square metres for one full-time employee is changed from 330 000 to 430 000 m^2/year
O3	O3		X		Requirement is updated, clear definitions of the cleaning types.
O4	O4	X			
O5	O5		X		Total consumption of cleaning products is reduced from 400 to 300 µl/ m^2.
P1	P1		X		The point scores are tightened according to O5.
O6	O6		X		Proportion of ecolabelled cleaning products is tightened from 80 to 90%.
P2	P2		X		Points for proportion of ecolabelled, tightened according to O6.
O7	-			X	Information about the use of Treated water
O8	-			X	Treated water production
P3	-			X	Water consumption for treated water
O9	O7		X		Updated according to changes in ECHA and the EU.
O10	O8		X		Updated according to changes in ECHA and the EU, and more excluded substances is added to the list

-	O9				Requirement removed due to floor care products defined as special cleaning.
O11	O10	X			
O12	O11		X		Changes to fuels for new vehicles, they must be plug-in hybrid or powered by biogas/natural gas, electricity or hydrogen
O13	O12		X		Tightening of the limit value, change in the functional unit and conversion factor.
P4	P3/P4		X		Changes to point alternatives, and changes according to O13.
-	P5				Point requirement for fuel consumption in ml/m^2 removed.
O14	-			X	New requirement ref. circular economy for packaging and waste generated by the cleaning services.
O15	-			X	New requirement for the reduction of plastic bags.
O16	-			X	New requirement for purchase of ecolabelled tissue paper and copy paper.
P5	P6		X		The point score alternatives are updated, and several of the percentages to achieve points are tightened. New point score options are added.
O17	O13		X		Summary of point score and point score options are updated. Different minimum value for different types of services.
O18	O14	X			
O19	O15	X			
O20	O16	X			

O21	O17	X			Minor changes to the wording of the headline/name of the requirement.
O18	-				Requirement is removed as it is updated by signing the application form.
O22	O19		X		Updated with the use of treated water/clean water production. Updated with a requirement for training regarding what Nordic Swan Ecolabelled means for the company
O23	O20		X		Updated document requirement for working conditions in line with national labour law standards.
O24	O21		X		Minor changes to the wording in the requirement.
O25	O22	X			
O26	-			X	New requirement regarding customer complaints.