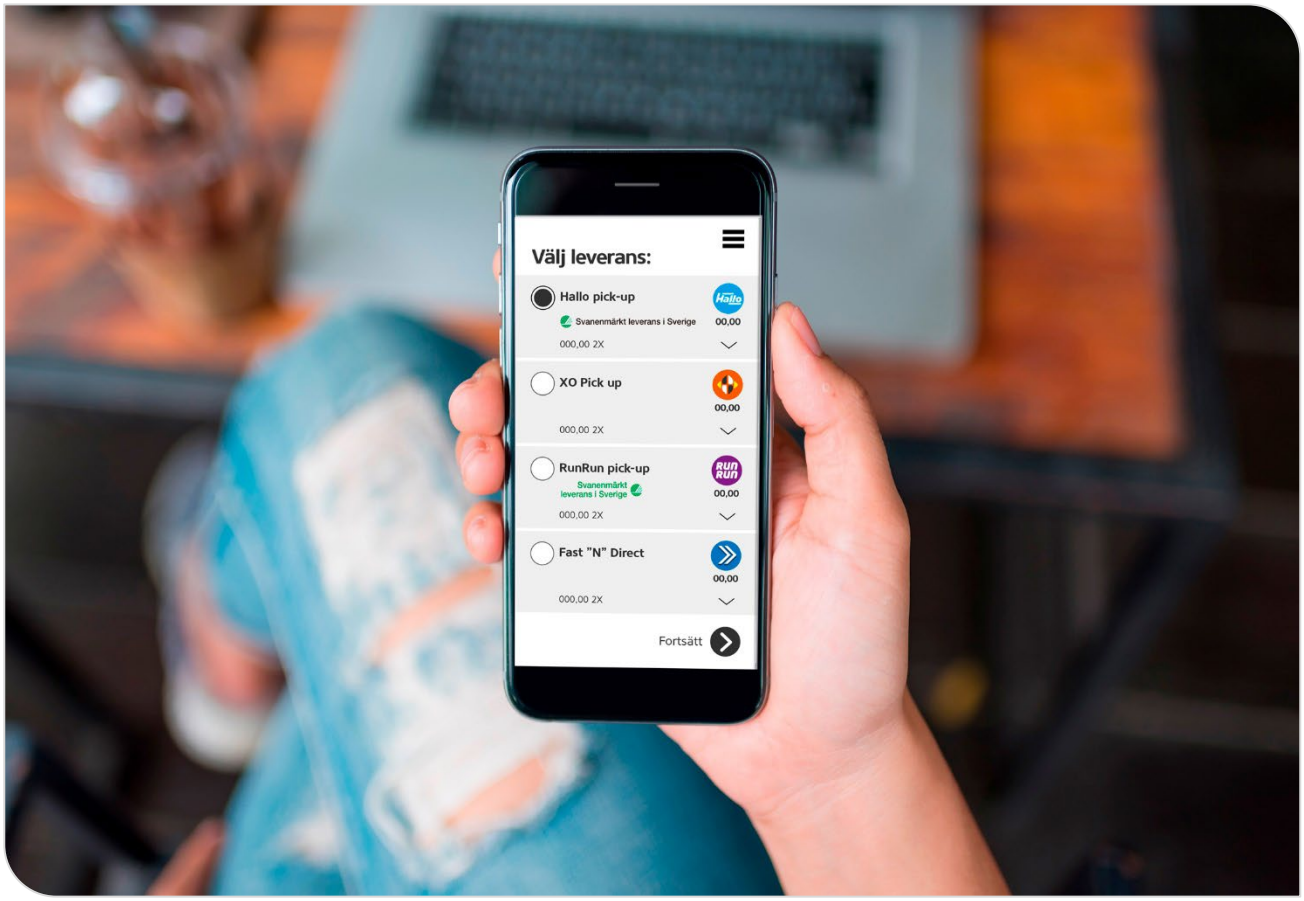
About Nordic Swan Ecolabelled

E-commerce logistics



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Nordic Ecolabelling

Content

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This document is a translation of an original in Swedish. In case of dispute, the original document should be taken as authoritative.

Contact information

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:

Denmark
Ecolabelling Denmark
www.svanemaerket.dk

Finland
Ecolabelling Finland
www.joutsenmerkki.fi

Sweden
Ecolabelling Sweden
www.svanen.se

Iceland
Ecolabelling Iceland
www.svanurinn.is

Norway
Ecolabelling Norway
www.svanemerket.no

1 Summary

E-commerce has grown rapidly and is an established compliment to traditional retail. When shopping online the end consumer has become a transport buyer with a need for guidance. In addition to the climate aspect the transport industry has other challenges such as increased crowding, emission hazardous to health particular in cities and risk of deficiencies in social conditions for drivers. With these insights, the Nordic Ecolabel started the work in this area with a pre study[1] which was conducted in close dialogue with different stakeholders. In September 2021, the Nordic Ecolabel initiated the project to develop criteria for the completely new product group Nordic Swan Ecolabelled e-commerce logistics.

The purpose with Nordic Swan Ecolabelled e-commerce logistics is to give the consumers of the Nordic region's a more sustainable and credible choice of delivery in the check-out when shopping online. The label takes a holistic approach, with climate, environmental and social requirements on the entire transport from e-retailer's warehouse to the end consumer.

The criteria cover both line-haul and last mile, i.e. both the long-distance heavy goods transport and last-mile transport out to the agent, parcel locker or home delivery. Collection from physical stores is also included, provided that the licensee can show that all transport between warehouses and stores meets Nordic Ecolabelling's criteria.

A central principle is that e-commerce goods should be transported integrated and collective as far as possible. The requirements are set at the level of "a company's collective e-commerce transport", i.e., not individual transport arrangements. Another principle is that certain requirements need to be differentiated depending on how large extent of the households in the country the transport/logistic company cover (i.e., degree of national coverage). To deliver in sparsely populated areas and in the northern parts of the Nordics imply greater challenges as regards to electrified vehicles and fossil free fuels. At the same time access to e-commerce to all inhabitants is an important sustainability aspect for people to be able to live throughout the country.

The requirements are divided into five main areas:

1. Climate and efficiency requirements for network logistics with focus on:

    - A high share of electrified transports and transports conducted with renewable fuels.
    - High energy efficiency in the logistics network.
    - Reduced climate impact which must be improved over time.
    - Renewable fuels must not be made of unsustainable raw materials.

    A long-term sustainable fleet.

[1] Möjligheter och hinder för en Svanenmärkning av e-handelstransporter" 2020

2. Social requirements through requirements on:
    - Secure employments and good labour standards.
    - Preventive road safety work.
3. Indirect requirement on packaging included in agreements between transportation company and e-retailer.
4. Information requirements in the check- out.
5. Licensee maintenance requirements.

It is not possible to apply the requirement O9 on sustainable raw material/fuels in Finland, since they, unlike other countries, still define PFAD as a by-product. In addition, there is no mass balance system implemented on the Finnish market. To ensure that Nordic Swan Ecolabel e-commerce logistics is not acting as a driving force for an *increased demand* of PFAD in Finland, partly different requirements are posed on a Finnish license applicant:

- Requirement O5 Renewable Energy is not applicable.
- This is balanced by constructing requirement O3, O4 and O7 more challenging for Finnish applicants. Consideration has been taken to the fact that the infrastructure for electric and CNG/CBG vehicles are less developed in Finland relative the other Nordic countries.

The criteria focus on climate and environmental requirements, but relevant social requirements are also set in the form of requirements concerning labour standards and road safety.

It has been an explicit strategy to harmonise the requirements of the Nordic Swan Ecolabel and the Transport Industries certification scheme, Fair Transport in Sweden and the ecolabel Good Environmental Choice for local goods transportation for, primarily not to increase the administrative burden for carriers and freight forwarders.

The criteria for Nordic Swan Ecolabel e-commerce logistics were on an open consultation during 1st June – 31st of August 2022 and were decided upon by the Nordic Board of Ecolabelling on 7 March 2023.

With so many who have contributed to the progress, we at the Nordic Ecolabelling would like to extend a great thanks and our sincerest appreciation.

2 Scope, definitions and terms

2.1 Definitions

The first time a term is used in the document, it is written in bold italics or with a reference to this definition list.

Term in background and criteria documents	Definition
Contractor	Unlike a self-employed person the contractor does not run a business and pay corporation tax. The contractor belongs to an umbrella company that invoices the clients for a certain amount of commission, reports employer contributions and makes tax deductions, and then pays the rest as salary to the contractor. This is referred to as being a contractor (freelance).
Euro emissions standard	A European classification system that specifies the highest permitted emissions of a number of different air pollutants (hydrocarbons, NOx, carbon monoxide and particles, but not CO_2) for cars, trucks and buses that are put on the market.
Fuel	Liquid or gaseous fuel and electrical energy for vehicle operation.
Electric vehicle	An electric vehicle is driven by an electric motor and supplied with electricity from a battery powered from a wall box or charging station. A pure electric vehicle has no internal combustion engine.
Dimensional weight/volumetric weight (bulky freight)	Dimensional weight or volumetric weight means that the weight is calculated by volume. Dimensional weight/volumetric weight is calculated as length x width x height x 280. (conversion factor 1 m^3=280 kg) The aim is to charge the highest of the actual weight and the volumetric weight. In e-commerce the volumetric weight is usually highest, and charges are made on that basis. Source: Vikt och volymberäkning för Transport | ColliCare Logistics.
Renewable fuel	Liquid or gaseous fuels that are produced from biomass and used for transport purposes.
Green gas principle	A system whereby both biogas and natural gas are distributed within the system, with assurances that the same volume of biogas purchased is actually supplied to the system.
Home delivery	Includes the distance to transport the package from the last distribution point and to the consumer's home address. Home delivery also includes e-purchased goods that are delivered in the letter flow.
HCT	High-Capacity Transport are vehicles longer than 25,25 metres or heavier than 64 tonnes. HCT vehicles are in general permitted in Finland but not in the rest of the Nordics. HCT is more energy efficient and leads to less emissions
Hybrid technology	All plug-in hybrids and hybrid cars have a battery that can power the car to reduce the car’s emissions. A plug-in hybrid combines an electric motor with an internal combustion engine. The plug-in hybrid can be charged with power from a wallbox or charging station. Should the battery be discharged, or should you need extra power, the internal combustion engine will take over. A hybrid car, also known as a mild hybrid or electric hybrid, cannot be charged via an electrical socket, charging instead through regeneration while the car is being driven. Here, the battery is used to support the internal combustion engine and reduce the vehicle’s emissions.
HVO100	Hydrogenated vegetable oil is a 100% renewable and fossil-free diesel fuel that can contribute to a significant reduction in CO_2 emissions compared with fossil diesel. HVO100 is a chemical copy of regular diesel but with a slightly lower density. The similarity to regular diesel means that specially adapted vehicles or storage tanks are not required for this fuel, which means low transition costs and becoming operational faster. However, approval from the vehicle manufacturer is required for warranties, etc. to be valid. The fuel shall comply with the standard EN 15940.
HVO97	This fuel consists of 97% HVO and is offered as “almost” completely renewable fuel from certain fuel companies. There is currently a major difference compared to HVO100. HVO100 falls outside the reduction obligation while HVO97 falls within it. Also called HVO Diesel/RD97/HVO97, or HVO light.

ILUC (indirect land use change)	Increased production of biofuel in one country can lead to other agricultural production being displaced, which in the long run can lead to the conversion of forest or pasture into agricultural land in other countries, thereby causing indirect emissions of greenhouse gases. The EU has been discussing the issue of ILUC for a long time. In the latest Renewable Energy Directive, ILUC risk for agricultural commodities has been divided into two levels, low and high. High-risk ILUC commodities must not be included in the EU framework RED II after 2030, see section 6.1.
Agent	Different types of staffed collection points from which the consumer can collect their e-commerce goods. This could be the carrier's own hub, the e-commerce operator's own network of stores, a supermarket, fuel station etc.
Incoming transport	The activities performed to bring specific items or deliveries to an e-commerce company, often from a supplier or manufacturer. It can involve all aspects of shipping and moving equipment to a warehouse.
Intermodal transport	Means that at least two modes of transport are used to move freight, with most of the route by rail or sea.
Last mile	Last mile refers to the movement of goods from a terminal/hub to a final destination, usually a consumer.
Line haul	The long-distance heavy goods transport between two defined points (cities, warehouses, ports, etc.) according to a fixed schedule.
Light goods vehicle	A vehicle that is not considered to be a passenger car or a bus and that has a gross weight of no more than 3.5 tonnes and 4.25 tons for electrical vehicles. A light goods vehicle may be driven on a Class B driving license.
Parcel	In these criteria, a parcel is considered to be a consignment that weighs a maximum of 20 kg. A parcel may also be delivered within the regular postal service.
Range extender	A technology whereby a vehicle has a small internal combustion engine that only charges the battery, rather than having a dual powertrain.
Same day delivery	The customer has their package delivered on the day the customer placed the order. In many cases, same day delivery is offered by courier service, i.e. a dedicated delivery.
Economical driving	How the car is driven has a major impact on emissions and noise. Factors that have an impact include the speed at which the vehicle is driven and tyre pressure.
Consignment	Defined in accordance with the consultation draft ISO 14083 as "total amount of freight sold in a single transaction". These criteria use a customized variant: A consignment is defined as the total amount of freight that the e-commerce consumer has ordered/purchased in a single transaction and that is shipped from the e-commerce warehouse to the consumer. Parcels delivered within the regular postal service are included in the definition of consignment.
Heavy goods vehicle	Truck weighing more than 3.5 tonnes.and 4.25 tons if electrical
Tonne-kilometres (tonne-km)	A measure of transport work for goods. The dimension is calculated by multiplying the weight of the goods in tonnes by the transport distance in kilometres.
Check-out solution	The electronic solution where payment and choice of delivery options take place.
Volumetric weight	See dimensional weight.
Zero Tailpipe Emission Vechicles	Vehicles with zero emissions at the tailpipe. This includes electric cars and hydrogen cars.

2.2 This can be Nordic Swan Ecolabelled

A transport service offered to the consumer at the e-commerce company's check-out, often referred to as shipping or delivery, which fulfils the requirements in this criteria document may carry the Nordic Swan Ecolabel.

In these criteria, e-commerce logistics are defined as all transport business-to-consumer (B2C) that takes place within e-commerce, i.e., transport of goods from companies to private consumers, where consumption has taken place in a digital channel. E-commerce goods that are distributed as small parcels within the regular postal service are also included in the product group definition. On 12 March 2024, Nordic Ecolabelling decided to adjust the section "What can carry

the Nordic Swan Ecolabel?" so that also consumer-to-consumer transports can be included. At the same time, a clarification of O7, regarding home delivery notifications, was decided. All e-commerce relating to services, such as streaming, tickets and travel, is excluded from the product group definition.

The criteria for Nordic Swan Ecolabel e-commerce logistics cover the transport of the finished product from the e-retailer's final warehouse, onwards via terminals and any intermediate depots, and then on to final delivery to the consumer/ end customer in any of the Nordic countries, see Fig. 1. The final warehouse can also be a Third-Party Logistics (3PL).

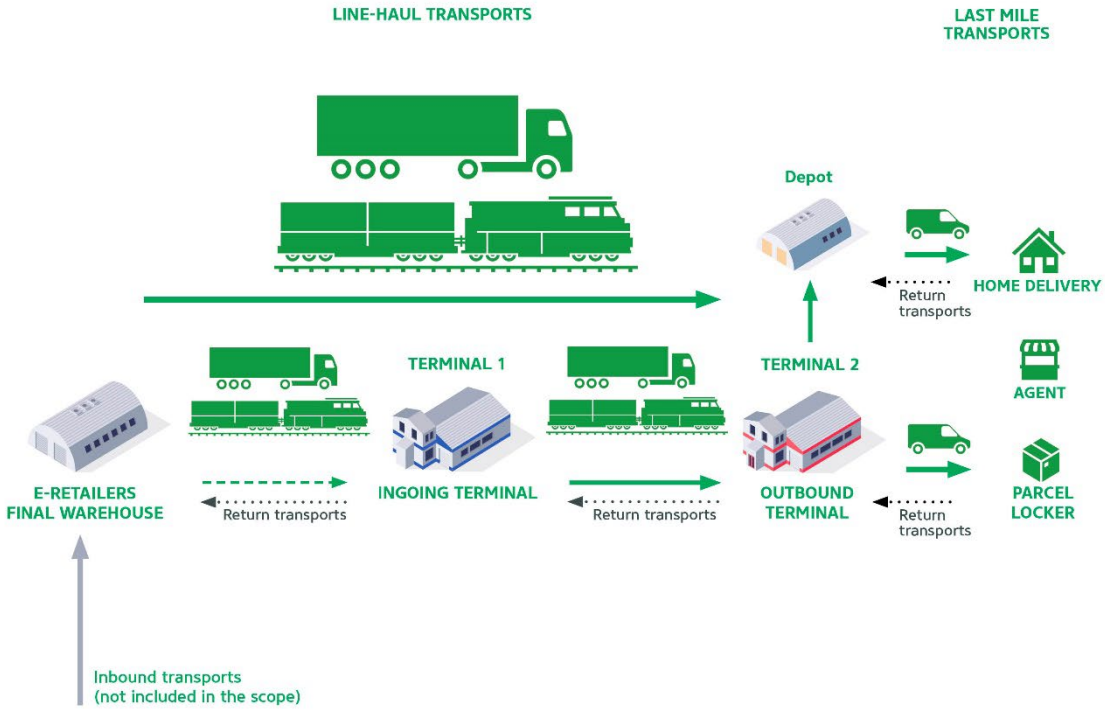

Figure 1: Diagram of an e-commerce logistics network

In the cases where the e-retailer's final warehouse is located in another country than the country where the licensee distributes Nordic Swan Ecolabelled services, the licensee's first terminal can be seen as the e-retailer's final warehouse. This only applies if the licensee does not have control over the transport between the e-retailer's warehouse and the receiving terminal.

For C2C-transports, where the purchase has taken place in a digital 2nd hand platform, the criteria cover the transport of the product from the point where the consumer hands over the parcel to the logistics company, typically a service point, onwards via terminals and any intermediate depots, and to final delivery at end customer.

A central principle is that e-commerce goods should be transported integrated and collective as far as possible. The requirements are set at the level of "a

company's collective e-commerce transport", i.e., not individual transport arrangements. As shown in Fig 1. the criteria cover both line-haul and last mile, i.e. both the long-distance heavy goods transport and last-mile transport out to the agent, parcel locker or home delivery.

Hence, it is not possible to Nordic Swan Ecolabel a particular region or area within a country. Instead, the label covers the entire national logistics network for e-commerce volumes. The reason is to avoid the risk of the entire network being suboptimized to meet the requirements of a specific region. In addition to the risk of energy and climate-related sub-optimizations[2], there is a risk that the communicative value of the Nordic Ecolabel is obtained without the entire network having been improved.

The delivery option, where the consumer collects from physical stores, is not uncommon for companies having both physical stores and e-commerce business. These goods are often transported integrated with the goods dedicated to the physical stores which is efficient logistics. Hence these transports and collect from stores can also be Nordic Swan Ecolabel, provided that the licensee can show that all transport between warehouses and stores meets Nordic Ecolabelling's criteria.

In the requirements that have differentiated national levels, the requirement level therefore applies to the country where the company has its legal domicile.

Delimitations

- Local and regional deliveries from grocery stores or restaurants are not included, as these are almost entirely last-mile services.
- Incoming deliveries to the e-commerce warehouse (in-bound transportation) are not included in the product group definition because the licensee has no control over these transports.
- In the cases where the e-retailer's final warehouse is located in another country than where the licensee distributes Nordic Swan Ecolabelled services, the transport between the warehouse and the licensee's first receiving terminal may be excluded if the licensee does not have control over that transport.
- Private trips to collect e-commerce goods from agents or parcel lockers are not included.
- Other transport in connection with e-commerce, such as return transport, is included in the logistics network, but cannot be specifically Nordic Swan Ecolabel. This is due to the fact that they are not a specific delivery option in the check-out.

[2] An example is if new electrified vehicles are allocated to the region in question at the same time as older vehicles are moved to areas that are not included in the Nordic Ecolabel. This means that no overall improvement has occurred.

- The criteria strongly limit aviation as a type of traffic and therefore the services involving air freight cannot be marked, see further requirement O2.

- International door-to-door service (Dynamic Parcel Distribution) covering all countries in the world, with parcel tracking is normally a B2B service and is not included in the product group definition. Any DPD shipments should not be included.

- If the license applicant is obliged to maintain supply readiness in times of crisis, this particular part of the business is not included in the product group definition and is not covered by the Swan's requirements.

Modes of transport included

In the Nordic region, the vast majority of e-commerce goods are transported by trucks, and it is most relevant to set environmental and climate requirements for road transport and fuel.

Some of the e-commerce goods are sent as small parcels in the regular postal service, and these are then partly transported by train. Within e-commerce, transportation by train is in total a very small mode of transportation. Approximately 1-3% of total e-commerce parcel volumes are transported by train. In Norway, train is a much more common mode of transportation than in the rest of the Nordic countries, due to geographical conditions and the network of narrow and winding roads that complicates truck transportation. As much as 30-35% of total e-commerce parcel volumes are transported by train in Norway.

Goods are also to a limited extent, transported on scheduled passenger ferry services. Both trains and ships are judged to be better alternatives in terms of the environment and climate than road transport, and the criteria do not set any specific requirements for these modes of transport, as this could be restrictive/limiting.

Due to strategic considerations e-commerce goods on train and ships are handles in this way in the criteria document:

- It is optional to include energy use from train transportation of e-commerce goods in requirement *Renewable Energy (O5)* and *Energy Efficiency (O6).* For the actors that send a large amount of e-commerce goods by train it can be advantageous to include the energy from train transportation in the calculations. Note that the volumes of goods/parcels shall always be included.

- Energy from ship transport is not to be included in any of the requirements.

- In addition, there is an optional requirement that supports work on intermodal transport solutions.

2.3 These can be Nordic Swan Ecolabel license holders

Any company that is included as a shipping/delivery option at the e-commerce company's check-out may become a licensee.

In addition, any licensee must have forwarding/transportation/postal services or carrier services as its core business, i.e., offer its transport and logistic service to the e-commerce business. A company's own internal transport organization can be a license holder if it is its own legal entity and otherwise meets the requirements.

The licensee must be responsible for both **line-haul** and **last-mile** transport and have a business that covers at least 50% of the households in the actual country.

The company applies for a licence in the country in which the company is registered, and the company's collective e-commerce transport is covered by the requirements. Hence it is not possible to Nordic Swan Ecolabel a particular region or area within a country. Instead, the label covers the entire national logistics network for e-commerce volumes.

Examples of companies that may be licensees are:

a) Freight forwarders.
b) Post and morning newspaper distributors who also deliver e-commerce goods.
c) Tech companies or platform companies.

A license holder can have its own fleet of vehicles and its own drivers or purchase transport in whole or in part from subcontractors. The subcontractors used in the network of e-commerce transports that are to be Nordic Swan Ecolabel must meet the relevant requirements but cannot obtain Nordic Swan Ecolabel in themselves.

3 Environmental impact of e-commerce logistics

RPS analysis

The criteria for Nordic Swan Ecolabel e-commerce logistics are based on a life cycle perspective, a holistic approach and an RPS analysis (Relevance, Potential and Steerability). The RPS analysis aims to clarify where and how the greatest environmental benefit can be achieved through the criteria.

Table 1 Summary of results of the RPS analysis. The aspects assessed to have high or medium relevance are those covered by requirements in the criteria. These are marked in bold text in the table.

Area/Aspect	RPS value (high - medium - low)	Description
Road transport	R=High P=High S=High	The relevance is high, as the vast majority of e-commerce logistics uses road transport, and this will only increase as e-commerce expands. This form of transport generates emissions of greenhouse gases, substances that are hazardous to health, increased congestion, road safety issues and noise.

		In the field of e-commerce logistics, there is a clear trend towards ever faster deliveries. The increasing speed can be a limiting factor for increased sustainability. Another strong trend is increased home deliveries, which are generally less energy-efficient compared with deliveries to agents or parcel lockers. There is great potential to set requirements that limit the environmental impact of road transport, in the form of requirements concerning transport efficiency, greenhouse gas emissions and the vehicle fleet. A better Euro emissions standard reduces emissions of hazardous substances. Steerability is high as licensees have control over their road transport, regardless of whether it is performed by themselves or by subcontractors. Source: Hur kan e-handelns transporter bli mer hållbara? Trafikanalys. Redovisning av Regeringsuppdrag. 2020
Energy Efficiency	R=High P=High S=High	It is important to economize on transport energy in a logistics network. It is not sustainable to e.g. electrify a logistics network if it is not initially optimized on the basis that every vehicle is fully loaded and that the routes planned are efficient. Efficiency and optimization of the network must take place first and then interventions in the form of traffic diversions or electrified vehicles may become relevant. In many cases, energy efficiency is more important than freedom from fossil fuels, as the most sustainable transport is the one that is not actually carried out. Both relevance and potential are high. Efficiency is achieved through the selection of traffic types, smart route planning, high occupancy rates, energy-efficient vehicles, digital tools/data analysis and customized time windows, etc. All measures have carriers' high controllability over.
Fuel	R=High P=High S=Medium	Greenhouse gas emissions can be attributed to the entire biofuel production chain: from the cultivation of raw materials to transport, production, distribution, and use. It is therefore highly relevant to set requirements for a high proportion of sustainable renewable fuel that reduces greenhouse gas emissions. There is great potential to choose fuel and powertrains with a lower climate impact. When it comes to renewable raw materials in fuels, it is relevant to prohibit raw materials with a high ILUC risk, such as palm oil, as these have a negative impact on the climate, biodiversity and soil conditions in the countries where the raw material is produced. HVO100 based on palm oil can actually have poorer climate performance than diesel. Reducing the transport sector’s climate emissions requires the vehicle fleet to move in the direction of both more energy-efficient vehicles and a significantly greater proportion of electrically powered road transport. The alternative sustainable fuel of the future is mainly electricity, but biogas and hydrogen are also deemed to be good alternatives, primarily because they do not cause greenhouse gas emissions while driving. Source: Swedish Energy Agency
Rail transport	R=High (positive) P=Low S=Medium	Transporting goods by rail in the Nordic region generates low carbon emissions, seen from a life cycle perspective. By definition, rail transport is good, and the criteria strive to move larger volumes of goods from road to rail. Because the industry is currently experiencing obstacles, the criteria only set a point score requirement that rewards intermodal transport.
Air freight	R=Medium P=Medium S=Medium	If not subsidized, flying is an expensive mode of transport, which means that it is relatively unusual for freight transportation. In general, the goods moved by air are sensitive, high-value and time-critical, such as pharmaceuticals, vaccines, medical equipment, spare parts and components for industry, perishable goods with short shelf life, certain fashion goods and certain electronics. One example of e-commerce volumes transported by air is the small parcels (up to 2 kg) that are shipped within the regular postal service, primarily from China to Europe. These volumes have declined, but not completely disappeared. Traditionally ecommerce parcels distributed integrated with letters air freight is not used at all or to a minor extent and then due to the time aspect or because the geography and topography of a country restrict road transportation (i.e the northern parts of Norway).

		For the credibility of the Nordic Swan Ecolabel, it is important to remove air freight as an option where possible. The relevance is medium. The potential is medium as there are alternatives to air freight unless time is the critical factor. Steerability is medium as it is possible to set requirements that largely rule out air freight as an option. Source: Deepened Prestudy Nordic Swan Ecolabel e-commerce logistics. Nordic Swan Ecolabel 2020, personal communication with a number of stakeholders.
Social conditions	R=High P=High S=high	Social conditions and road safety are important areas in the labelling of logistics. The industry is struggling with challenges such as unhealthy workloads, occupational injuries, stress, high staff turnover and drivers working under unreasonable conditions. The large and rapid growth in e-commerce has led to the emergence of platform companies that are disrupting the current labour market model. Platform companies may employee their own drivers or hire in so-called umbrella companies as an employer. When different employer functions are divided between different players, it is no longer clear who the employer actually is. In this generation of criteria, the social conditions are limited to drivers. When revising the criteria, it is relevant to let the requirements also cover personnel at the own freight terminals. Source: Fri frakt till ett högt pris. En analys av e-handelns utveckling och hållbarhet, 2021.
Road safety including driver and cargo safety	R=High P=Medium S=Medium	Heavy goods traffic is increasing year on year and road traffic accidents involving heavy goods vehicles often have major consequences. The number of occupational injuries is above average compared with other industries, and unfortunately the number of deaths in the “transport and warehousing” sector is not decreasing. Source: Swedish Work Environment Authority’s website 2019.
Packaging	R=Medium P=Medium S=Low	Packaging is an important parameter for the overall efficiency of e-commerce logistics. However, the packaging of the e-commerce product is not something that the transport companies/logistics companies have control over. The Nordic Ecolabelling criteria for e-commerce logistics set indirect requirements aimed at creating (economic) conditions for more efficient packaging solutions. Source: Packaging Logistics, Henrik: Pålsson, 2018.
The following aspects are not covered by requirements in the criteria due to low relevance or low steerability.		
Marine transport	R=Medium P=Medium S=Low	Shipping is the primary mode of transport for goods between continents, but accounts for a small proportion within the country’s borders. The intercontinental container ships often go from major manufacturing countries to a port in Europe and are distributed from there on smaller ships to smaller ports. This shipping is not within the scope of the criteria, as it relates to the incoming freight transport to the e-retailer’s warehouse. Environmental impacts are primarily air and water pollution and emissions of greenhouse gases, but also the risk of conveying non-native species of animals and plants. Relevance is low, as freight transport by sea from the e-retailer’s warehouse to the consumer is small compared with transport by road. Between and within the Nordic countries there are vessels that are primarily passenger ferries, but also carry trucks of goods, including from e-commerce. Calculating the share of emissions for this type of parcel transport is complex, but not impossible. Steerability is, however, virtually non-existent as long as the vessel’s primary task is to transport passengers, or the e-commerce goods form a very limited proportion of the goods that the cargo ship transports. Source: Fredrik Larsson, Miljö & Klimat, Sweship
Purchasing behaviour including returns	R=Medium P=Low/Medium S=Low	The criteria cover e-commerce logistics and not e-commerce itself. The rate of returns and misuse of returns, which are strongly linked to consumer behaviour, form an important parameter for the overall efficiency of e-commerce logistics. However, steerability is low for the carriers. Source: In-depth pilot study, Nordic Swan Ecolabel e-commerce logistics, Nordic Ecolabelling 2020. Pilot study and consumer study, HUI and Nordic Ecolabelling 2022.

Personal shopping trips	R=High P=Medium S=Low	E-commerce could potentially lead to lower traffic volumes and reduced energy consumption for transport if shopping trips by car can be replaced by more efficient freight transport. But if they are not, the result will be increased traffic volumes, with home and agent deliveries simply adding to unchanged (or even increased) travel. In the long term, e-commerce could be an important piece of the puzzle in enabling a car-free lifestyle. Due to the lack of steerability, neither personal shopping trips nor indirect transport-related rebound effects such as e-commerce freeing up more time that can be spent on other things will be included in these criteria. Source: Hur kan e-handelns transporter bli mer hållbara? Trafikanalys. Redovisning av Regeringsuppdrag. 2020
Life cycle requirements for vehicles	R=Medium/High P=Low S=Low	Production of battery-powered vehicles has a considerable environmental impact, mainly due to the energy-intensive production of the batteries. Overall, battery-powered vehicles have a significantly lower climate impact in terms of their entire life cycle, thanks to the significantly lower carbon emissions in operation. The batteries account for just over 40% of carbon emissions from the production of battery-powered vehicles. Steel is another major part of the vehicle's carbon footprint, due to its high dependence on fossil fuels in the production phase. Both potential and steerability are low, as manufacturing processes, choice of raw materials and recycling need to be further developed. Source: Life cycle assessment of distribution vehicles, Scania 2021
Tyres	R=Low/Medium P=Low S=Low	Studded tire use is the main reason for exceeding particle standards. There may be a conflict of objectives between studded tires and road safety, although studless winter tires should be adequate alternatives. The issue can be considered high on the authorities' agenda and studded tire bans are being dealt with in legislation and local regulations. Energy class and retreading of tires are also energy/environmental factors. Overall relevance low/medium. Circularity and energy efficiency risk to stand in opposition to each other. Since retreaded tires have no energy class, it can be difficult to set requirements correctly. Potential and steerability are therefore low as a large part of the transport is carried out by subcontractors and these choose the tires themselves. Source: Däckbranschens Informationsråd.
Buildings (warehouses and depots)	R=Low P=Medium/High S=High	The energy consumption of a logistics building, warehouse or terminal is small compared to the energy consumed in the actual transport of the goods. The relevance is therefore low. Several of the transport/logistics companies engage in active sustainability work at the terminals, such as energy efficiency improvements and the expansion of solar panels. Potential and steerability are high. We set requirements for an open infrastructure. This issue will increase in relevance going forward, as the terminals will supply the logistics network with energy. Source: Prestudy Nordic Ecolabel, 2020.
Vehicle cleaning/washing	R=Low P=Low S=Medium	Metals, oil products and other environmentally harmful substances are discharged into the sewage system during vehicle washing. The contaminants originate from the washing chemicals, plus dirt from road surfaces, vehicles and tires. National and local rules and regulations effectively limit the environmental impact of vehicle wash installations through requirements concerning chemical use, water treatment technology and recirculation. Source: Swedish Environmental Protection Agency. Allmänna Råd

Appendix 1 contains a presentation of how Nordic Ecolabel e-commerce transport contributes to the global goals for sustainable development.

4 Short market description

The largest companies on the B2C parcel market in the Nordic countries are presented in Table 1 below.

Table 2 The largest parcel suppliers in the Nordic region. Source: The Swedish Post and Telecom Authority.

Operator	Sweden	Norway	Finland	Denmark
PostNord	50-55%[3] parcel, letter	parcel	parcel	parcel, letter
DHL	10-15% parcel	parcel	parcel	parcel
Instabox*	10-15% parcel	parcel	-	parcel
Schenker	5-10 % parcel	parcel	parcel	parcel
Budbee*	5- 10 % parcel	parcel	-	parcel
Bring	5-10 % parcel	parcel, letter	parcel	parcel
Airmee	1-5% parcel	parcel	-	parcel
UPS	1-5% parcel	parcel	parcel	parcel
Posti	-	-	parcel, letter	-
GLS	-	-	-	parcel
DEO	-	-	-	parcel/papers
Early bird	0-2% parcel, papers	-	Parcel, letter	parcel

*Since this was written, the companies have merged and formed the company Instabee.

As the table shows, there are many transporters that offer e-commerce deliveries and there is a hard competition between these companies, especially on the Swedish market.

To simplify the market, the transporters above can be divided into two different categories, ie the traditional nationwide companies and the newer transport companies that are often named as tech companies or platform companies. The origin of the traditional companies are often other types of distribution such as post distribution, distribution of morning newspaper, courier business, etc. while the newer companies often come from the IT and tech industry where they offer a platform where hauliers or self-employed drivers assign and carry out transport services. In the recent years the number of last mile transporters have increased, especially when it comes to home deliveries.

Something that is relevant for the Swan labelling system is whether the carrier owns the fleet and employ the drivers or if they are outsourcing the transport services to sub-contractors. It determines the level of control that the transporters have of some of the criteria in the labelling system such as employment conditions, vehicle purchases, fuel, euro class, etc. PostNord and Instabox have the largest owned fleet and employed drivers while the other transporters purchase most of their transports. This means that the most common business model in e-commerce deliveries is to outsource the actual transport to sub-contractors or self-employed drivers.

[3] Andel av paketmarknaden i Sverige B2C

5 Other labelling and certification schemes

For the transport sector in the Nordic region, there are a couple of established labels and certification systems for freight transport. E-commerce/digital commerce also has a label, Trygg e-handel that does not include environmental parameters.

This project has had an explicit strategy to harmonise the requirements of the Nordic Swan Ecolabel and *Fair Transport*. The primary reason has been not to increase the administrative burden for carriers and freight forwarders, which has been a clear desire. Although this has not been a main purpose, the harmonisation of the requirements has a positive side effect that the systems can strengthen each other and increase their attractiveness and penetration in the industry. The revised criteria for *Good Environmental Choice's light goods transport* have also harmonised relevant requirements with Fair Transport. This means that a carrier who has transport services labelled according to Good Environmental Choice Local Goods Transport 2022 will directly fulfil several of the requirements in Nordic Ecolabelling's criteria and may become an attractive subcontractor to a licensee for Nordic Swan Ecolabel e-commerce logistics.

Table 3 Summary of the most important labels

System	SE	NO	FI	DK	Summary
Fair Transport (FT)	Yes, updated version with climate/renewable fuels	Yes, basic version	No	No	Fair Transport was launched in a new guise in spring 2021 as a result of a merger with the certification system Sustainable Transport. Fair Transport currently covers road transport, but there are plans to expand into other modes of transport. The requirements have been developed collaboratively by the industry and cover the areas of climate and the environment, road safety and responsibility. Fair Transport is structured in levels. The basic level must be met by everyone and can then be supplemented with three different value-added levels. All certified companies meet set requirements and criteria and are followed up on an ongoing basis via an independent third-party audit. The criteria and information material can be found on the website www.fairtransport.se In Norway, Norges Lastebileier-Forbund (Norwegian Truck Owners' Association) runs the basic version of Fair Transport, which includes road safety, social responsibility, and legal compliance. Fair Transport Norway is not subject to third-party review but is a self-declaration. Criteria and information can be found on the website www.fairtransport.no
Bra Miljöval	Yes	No	No	No	The Swedish Society for Nature Conservation created Bra Miljöval (Good Environmental Choice) criteria for goods transport back in 2005. In 2016, these were supplemented with criteria for courier transport (light goods). The criteria for courier transport have been revised and the revised criteria for the Local Goods Transport product group is valid since spring 2022.
Trygg e-handel	Yes	Yes	No?	Yes	This label, aimed at e-commerce, was developed by Svensk Digital Handel, the digital arm of the Swedish Trade Federation (Svensk Handel). The label regulates safety and consumer rights related to the purchase, e.g. availability, customer service, delivery terms, payment solutions, sales, total costs, etc. In other words, everything that makes an e-commerce consumer feel confident about their purchase.

5.1 The Swedish industry agreement Fossil-free Delivery

During autumn 2022, Svensk Digital Handel and Aster[4] launched an industry agreement on Fossil-free Delivery (Fossilfri Leverans). The industry agreement aims to create clarity and rigour at check-out around the concept of fossil-free, in order to simplify the choice for consumers. The industry agreement also aims to remove existing concepts that lack relevance and create confusion among consumers, such as climate-smart or climate-compensated shipping. The latter is a concept that should not be used in communications with consumers, according to a clear statement from the Swedish Consumer Agency, as the concept is imprecise and unclear.[5] When used without qualification, there is a risk of misleading the consumer about the product's environmental properties. The average consumer cannot be expected to understand what this means and cannot make an informed commercial decision based solely on such a statement.

The industry agreement makes it possible to offer fossil-free delivery at postcode level when the order is shipped using fossil-free fuel from the e-retailer's warehouse to the selected delivery location. It is important to emphasise that Fossil-free Delivery is not a label, but rather an industry agreement that sets a number of conditions for both distributors and e-commerce operators to comply with.

In the industry agreement, fossil free is defined as the energy from fossil free energy sources and has therefore not been produces by fossil forms of coals, oil, or gas. Fossil free energy sources includes the energy produced by hydrogen power, wind power, solar power, nuclear power, muscle power and energy produced by biomass. The Swedish electricity mix or an equated electricity mix is considered accepted when the vehicles are driven by electricity.

6 Legislation and standards

6.1 Legislation

Renewable Energy Directive

The EU's revised Renewable Energy Directive (REDII) sets criteria concerning when biofuel can be considered sustainable[6]. The directive also establishes detailed calculation rules for greenhouse gas emissions over the life cycle of biofuels (well to wheel). Compliance with the sustainability criteria and calculations of greenhouse gas emissions must, according to the directive, be checked by an independent third-party auditor. A revised edition of the directive was issued in July 2021, and the most important changes related to fuels are listed below.

[4] State-funded collaboration network with the aim of increasing sustainability in e-commerce and e-commerce logistics.
[5] Miljöpåståenden om klimatkompenserade produkter i marknadsföring, Swedish Consumer Agency 2021.
[6] https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules/renewable-energy-directive_en

- Requirement for fuel suppliers to achieve a renewable share of at least 14% by 2030 in the transport sector.
- Requirement for a certain proportion of so-called advanced biofuels. This proportion of the total energy consumption in the transport sector must amount to at least 0.2% by 2022, 1% by 2025, and 3.5% by 2030.
- Stricter sustainability criteria and criteria for greenhouse gas reduction.
- New fuels have been included for use towards the 14% target, e.g. electrofuels from electricity and carbon dioxide.
- REDII presents a new approach for handling ILUC (Indirect Land Use Change) from biofuel.

National legislation that reduces climate impact

All the Nordic countries have legislation that steers towards increased admixture of renewables in blended fuels. The legislation regulates the increasing proportion of renewable fuel in slightly different ways. A summary is shown in the table below.

	Legislation	Blend calculated by	Fuels covered
Denmark	CO_2 displacement requirements for transport[7]	Greenhouse gas reduction, g CO_2/MJ	All fuels incl. electricity
Finland	Distribution Obligation Act[8]	Energy (MJ)	All fuels excl. electricity
Norway	Sales requirement for biofuels[9]	Volume (l)	All liquid fuels (not gas and electricity)
Sweden	Act on reduction of greenhouse gas emissions[10]	Greenhouse gas reduction, g CO_2/MJ	Liquid biofuel blended with petrol and diesel. Not highly blended biofuels such as HVO100, FAME100, CNG/CBG or electricity.

One issue being raised is whether the use of renewable fuels by an individual logistics company contributes to an overall reduction in the climate impact of the transport sector, in addition to the levels required by the legislation above. When a logistics company buys certain renewable fuels, the fuel companies put this towards their compliance with the statutory admixture requirements. This enables the fuel companies to sell products with a higher fossil mix to other consumers. The logistics companies' use of certain renewable products can therefore be considered to have questionable climate benefit, if any at all. If the availability of renewable fuel was higher, as well as the possibility of charging a higher price, the conclusion might be different.

The following fuels are not covered by the aforementioned regulations, which means that their use contributes to a more reliable additional climate benefit:

[7] https://www.retsinformation.dk/eli/lta/2021/2536
[8] Laki uusiutuvien polttoaineiden käytön edistämisestä liikenteessä 446/2007 – Updated legislation – FINLEX
[9] Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter (produktforskriften) - Kapittel 3. Omsetningskrav for biodrivstoff og bærekraftskriterier for biodrivstoff og flytende b... – Lovdata
[10] Lag (2017:1201) om reduktion av växthusgasutsläpp från vissa fossila drivmedel Svensk författningssamling 2017:2017:1201 t.o.m. SFS 2021:747 – Riksdagen

- biogas, electricity, and high-blend biofuels (HVO100, FAME, Ethanol (E85, ED95)) in Sweden
- biogas and electricity in Norway
- Electricity in Finland.

In Denmark, all fuels including electricity are covered by the legislation.

It is uncertain how the regulations will change moving forward. There is particular uncertainty about regulations for pure, high-blend liquid biofuels in Sweden, which are currently subject to a tax exemption. After 1 January 2023, either the tax exemption will remain, or the reduction obligation will include high-blend biofuels. If the tax exemption remains, the ability of transport companies, municipalities and private individuals to contribute to additional climate benefits will increase.

Sustainable raw materials

The Renewable Energy Directive (REDII) has introduced new requirements that will gradually phase out raw materials with a high ILUC risk (ILUC = Indirect Land Use Change). According to the directive, no raw materials with a high ILUC risk may be counted as renewable in fuel by 2030, unless they are certified as biofuel with a low risk of indirect land use change.

In order to determine which fuel raw materials, entail a “high ILUC risk”, there are a number of cumulative criteria that must be assessed. Currently, the EU considers primary palm oil to have a “high ILUC risk”. The directive’s criteria are set at a high level and there is currently no certified palm oil that meets the criteria for low-risk ILUC.

PFAD, a by-product from palm oil production, is handled in slightly different ways in the legislation of the Nordic countries. This is largely due to the way PFAD is classified in the legislation. The most important difference between the Nordic countries’ implementation is that Sweden, Norway and Denmark consider PFAD to be a by-product/co-product, while Finland, like a couple of other countries in the EU, defines PFAD as a residual product.

When PFAD is defined as a by-product/co-product, it is equated with primary palm oil, i.e. PFAD is considered a raw material with a high ILUC risk. When PFAD instead is defined as a residual product, the raw material only needs to be traced to the place where it occurs. It is not considered to be a raw material with a high ILUC risk and therefore does not need to be phased out but can continue to be found in biofuel.

EU Delegated Act – Taxonomy

The EU Taxonomy is a way to identify economic activities that are considered sustainable. This section describes how Nordic Ecolabelling’s criteria and requirements for reporting correspond to the economic activities and reporting requirements found in the EU Taxonomy.

Licensees who are currently required to report non-financial items in their annual accounts, in line with Swedish legislation on sustainability reporting, will

also need to report in accordance with the EU Taxonomy.[11] The scope of reporting within the EU Taxonomy will gradually be increased.[12]

The activities associated with Nordic Ecolabelling's criteria for e-commerce logistics are those listed in section 6 of the EU Taxonomy (Transport) as "Freight transport services by road" (6.6) and "Freight rail transport" (6.2).

With regard to "Freight rail transport", all costs associated with purchasing, financing, leasing, rent and running costs for rail transport that has zero tailpipe emissions (direct emissions) may be covered by the EU Taxonomy (taxonomy-eligible). Diesel-powered trains are thus not considered to be a sustainable economic activity according to the EU Taxonomy.

As an economic activity, rail transport (not diesel) can be linked to the optional requirement O12 "Intermodal transport". This sub-requirement thus favours the sustainable economic activity in the EU Taxonomy.

Regarding "Freight transport services by road", licensees subject to reporting requirements will be obliged to report the purchase, financing, leasing and operation of vehicles. For vehicle costs to be classified as aligned with the EU Taxonomy, all goods vehicles < 7,500 kg must have zero tailpipe emissions. Heavy goods vehicles are subject to the same emission-free requirement, but if this is not possible or economically viable, the vehicle must meet the "low emission heavy duty vehicle"[13] requirement. This means a heavy-duty vehicle with specific carbon emissions that are less than half the reference values for carbon emissions for all vehicles in the subgroup to which the vehicle belongs. These vehicle categories can be found in the directive.

The criteria for Nordic Swan Ecolabel e-commerce logistics set requirements for existing vehicle fleets (O3) and newly purchased vehicles (O4). With regard to O3, the cost of operating the existing vehicle fleet may be classified as taxonomy-eligible.

Regarding O4, Nordic Ecolabelling requires 100% electricity or hydrogen gas for light goods vehicles and 20% for heavy goods vehicles.

Conclusion

The criteria for Swan-labelled e-commerce transport have certain requirements that can be linked to increased compatibility with the taxonomy, and where the reporting to the taxonomy can probably also be used to report and verify the requirements. But Nordic Swan Ecolabel e-commerce transport is not to be regarded as a confirmation that a license holder's activities are taxonomy eligible.

[11] In Sweden, all companies with more than 250 employees, total assets of more than SEK 175 million or net sales of more than SEK 350 million must report, and this will be the case for many of the potential licensees.
[12] For the 2021 financial year, data will be required on the proportion of a company's economic activities that are taxonomy-eligible. For the 2022 financial year, extended reporting of alignment with the EU Taxonomy is proposed.
[13] "Low emission heavy duty vehicle" in EU 2019/1242

Corporate Sustainability Reporting Directive

Today's provisions in the Swedish Annual Accounts Act originate from the EU's Non Financial Reporting Directive (NFRD). The European Commission has now adopted a new Corporate Sustainability Reporting Directive (CSRD), which introduces changes and updates to the existing reporting requirements.

The changes include:

- A broader scope that covers all large companies and companies listed on regulated markets (except for listed micro-enterprises).
- Mandatory independent third-party assurance of reported information.
- Introduction of more detailed reporting requirements and a requirement to report in accordance with the EU Sustainability Reporting Standards (ESRS.)
- A requirement that companies digitally "tag" the reported information so that it is machine-readable.

Nordic Ecolabelling should, as far as possible, coordinate the reporting requirement so that it complies with the requirements set by the CSRD. One thing worth investigating is the possibility of automated follow-up, as the last point above increases the possibility of automated input, see requirement O20.

The EFRAG[14] organisation was expected to publish detailed guidance on reporting at the end of 2022.

Mobility Package

The purpose of the Mobility Package is to harmonise regulations between different countries in Europe in order to make road transport safer, more sustainable and more efficient. The areas covered include:

- Driving and rest times
- Cabotage operations
- Safe truck parking
- Rest areas and truck stops

The requirements in the Nordic Swan Ecolabel for e-commerce logistics that may be linked to the Mobility Package are set out in the sections concerning road safety and social conditions (see requirements O13–O15)

6.2 Standardisation work

The guidelines from the GLEC (Global Logistics Emissions Council) were draw up with the ambition of establishing a common framework for calculating and reporting emissions from freight transport and logistics. This framework is now being developed into an international standard, ISO 14083, which was released

[14] www.efrag.org

as a version for consultation in spring 2022. The standard includes climate calculations for all modes of transport.

There is also a European standard for calculating emissions from road transport (CEN 16258). Where concern is taken to European circumstances. This is being revised and will be harmonised with the international standard, ISO 14083.

7 Justification of the requirements

The requirements are divided into five main areas:

1. Climate and efficiency requirements for network logistics
2. Social requirements
3. Requirements included in agreements between carrier and e-retailer
4. Information requirements
5. Licensee maintenance requirements

The criteria focus on climate and efficiency requirements, but relevant social requirements are also set in the form of requirements concerning labour standards and road safety.

Basic principles

A central principle is that e-commerce goods should be transported integrated as far as possible. This means that the requirements are set at the level of "a company's collective e-commerce transport", i.e., not individual transport arrangements. As Figure 1 shows, both line haul and last mile are included, i.e., transport from the terminal/depot out to the agent, parcel locker or home delivery.

Transportation of e-commerce goods collected from physical stores is also included, provided that the licensee can show that all transport between warehouses and stores meets Nordic Ecolabelling's criteria.

To the greatest extent possible, the requirements are the same for all Nordic countries. However, due to different conditions, national adaptations are required in some requirements.

Another basic principle is that certain requirements need to be differentiated depending on how large extent of the postal numbers in the country the transport/logistic company cover (i.e., degree of national coverage). To deliver in sparsely populated areas and in the northern parts of the Nordics imply greater challenges as regards to electrified vehicles and fossil free fuels. At the same time access to e-commerce to all inhabitants is an important sustainability aspect for people to be able to live throughout the country.

Subcontractors

The requirements set out in the criteria apply to both license holders and all subcontractors used in the network of e-commerce transports to be Nordic Swan Ecolabel. The requirements and the control apply to the subcontractors that are contracting parties to the licensee, i.e. direct suppliers/tier 1 suppliers.

Other

When a requirement is partly or fully harmonised with Fair Transport Sweden[15] or Good Environmental Choice Local Goods Transport (Bra Miljöval Lokala Godstransporter), this is clearly stated in the requirement. It is also clearly stated when an approval in accordance with Fair Transport (FT) or a Good Environmental Choice certificate can be used as verification of Nordic Ecolabelling's requirements.

The transport area and especially the last mile is an area that is developing. Some of the requirements in these criteria are set with a gradual tightening during the criteria's validity period. In general, levels are set based on today's conditions. If significant changes occur in e.g. the outside world, requirements and levels may need to be adjusted. This then takes place in a transparent process after a national referral.

8 Requirements for network logistics

This chapter contains requirements for the network of e-commerce logistics, with a focus on climate, fleet, fuel and energy efficiency.

8.1 General

O1 Description of the logistics network

The network of e-commerce logistics to be Nordic Swan Ecolabel must be described. The purpose is to create an understanding of the network and the service/product and to assess whether the service/product meets the product group definition, see "What can carry the Nordic Swan Ecolabel" and Fig. 1.

The description must, as a minimum, include:

1. An overall description of the network of e-commerce logistics or the entire integrated network of which e-commerce logistics are a part. Any delimitations, e.g. regarding cross-border transports, must be clearly described.
2. The modes of transport used in the network, and specifically whether intermodal solutions are used.
3. An investigation of opportunities for intermodal solutions. If the investigation concludes that intermodal solutions cannot be introduced, the reason must be justified. The decision must be reviewed annually, see requirement O19.
4. Name of a product/service that is intended to be Nordic Swan Ecolabel.

[15] Since Norway's Fair Transport certification scheme is only a self-declaration system, it cannot be used to verify compliance with the requirements.

5. Coverage expressed as a percentage of postal numbers (all digits in the postal number) in the country where the e-commerce consumers are offered the Nordic Swan Ecolabelled service.
6. Number of terminals, depots and their geographical locations (city).
7. Information on number of own vehicles and number of subcontractors vehicles in the network of e-commerce logistics, divided on different types of vehicles. Percentage of vehicles in own vehicle fleet.
8. Description of subcontractors (number, which are connected to Fair Transport and other relevant information) as well as estimation of share of the total transport work performed by (including subcontractors as an average over the last 12 months.)
9. Description of routines and systems for monitoring how requirements placed on subcontractors are met. Description must also include measures in the event of deficiencies/deviations.
10. Form of employment for drivers/those performing the transport work.
11. Estimation of how much transport is carried out using the private vehicles of the licensee's own employees. This component may be disregarded if it does not exceed 5% of the total transport work, including subcontractors.

✉ Description of points 1–11, as above, preferably in Appendix 1.

Background

In order to create an understanding of what is to be Nordic Swan Ecolabel and to quality-assure the processing of the application, a clear description of the logistics network is required.

O2 Flight transportation

In order for flights not to occur as a *standard* part of the business model for Nordic Swan Ecolabel e-commerce logistics, both part 1 and 2 must be fulfilled:

1. Air freight as a part of the business concept/ on a regular basis is not permitted in the Nordic Swan Ecolabel e-commerce network.

This means for example, that a parcel service that uses an express postal service which includes flights on certain routes (integrated transportation) cannot be Nordic Swan Ecolabel. Despite this, flight transportation can occur in exceptional cases. Exception is also made for special destinations such as Svalbard.

2. The licensee may not offer Nordic Swan Ecolabel e-commerce logistics to the e-commerce companies whose business concept requires the goods to be flown in order to meet the terms of delivery.

This means that e-commerce platforms which often fly goods from manufacturing country to the end consumer, cannot offer Nordic Swan Ecolabel e-commerce logistics.

✉ A guarantee that flight is not on a regular basis used as mode of transportation within the Nordic Swan Ecolabel e-commerce logistics. Signed Appendix 1.

✉ Certification of that Nordic Swan Ecolabel e-commerce delivery is not sold to the e-commerce companies addressed in requirement part 2. Signed Appendix 1.

🔑 Nordic Ecolabelling carries out random checks of e-retailers' check-out solutions.

Background

In the pre-study the question of flight as a mode of transportation in e-commerce were analysed[16]. In summary air freight is used to a very small extent in the network of Nordic Swan Ecolabel logistics, which extends from the e-retailer's final warehouse to the end consumer. There are some instances of inbound transport, see definitions, but these fall outside the product group definition.

For the trustworthiness of the Nordic Swan Ecolabel, flit is important to limit air transportation as much as possible. This is performed in two ways:

1. *Limitation of air freight on a regular basis within the Nordic Swan Ecolabel e-commerce network.*

With the rules now allowing mail delivery less often than daily, air has greatly decreased as a mode of transport for letters and consignment notes/small parcels. But there are examples of products that are flown on a regular basis in order to maintain service agreements and lead times, for example Bedriftspakker (B2B) Express and Varubrev 1:a klass. These products cannot therefore be Nordic Swan Ecolabelled.

Despite this basic rule, flights may occur in exceptional cases and for special destinations that naturally depend on flights. Svalbard is one such example, where packages < 35 kg are flown, while other goods are primarily transported by boat.

To ensure that air is not normally used within the framework of Nordic Ecolabelled e-commerce transport, the license applicant must sign Appendix 1.

2. *Limitation of flight as a part of the business concept of the e-commerce company.*

One example of e-commerce goods that are transported by air are the small parcels carried in the postal service primarily from China to Europe. These types of transports were previously subsidized which made it possible for light and very cheap products (gadgets) to be flown directly from China to the Nordic countries. Regulations have been changed[17] and the volumes of goods transported in this way have dropped but not disappeared. This type of e-commerce platforms and companies cannot offer Nordic Swan Ecolabel e-commerce logistics in their check-outs.

8.2 Climate and efficiency requirements

Nordic Ecolabelling has developed the STEP (Swan Transport Energy Performance) calculation tool for use in reporting information for requirements O5 and O6. STEP shows the outcome as a percentage of renewable energy and energy efficiency.

[16] Deepened Prestudy Nordic Swan Ecolabel e-commerce logistics. Nordic Swan Ecolabel 2020
[17] https://www.svt.se/nyheter/ekonomi/paket-fran-kina-blir-dyrare.

STEP also shows the climate impact performance, in accordance with requirement O8, based on the data entered. Rules and principles for input of data are described in Appendix 2.

Appendix 3 contain the allocation principles that shall be used by the companies with an integrated transport network where e-commerce and other/traditional goods are transported in an integrated way.

Explanation of the scope of requirements O3 and O4

The requirements apply to the total vehicle fleet and not per haulage company/subcontractor.

All vehicles that can be used for the Nordic Ecolabelled services/products must be included in the calculation of compliance with the requirements. However, the least used subcontractors, which together account for a maximum of 20% of the cost of purchased transport, may be exempted from requirements O3 and O4. However, this does not apply to sub-requirements a) and b) in requirement O3 which cover all vehicles.

O3 Existing vehicle fleet

At the time of application, the vehicle fleet carrying out the licensee's Nordic Swan Ecolabel e-commerce logistics must meet the following conditions.

In this context, "vehicles" refers to all motorized vehicles demanding B- oh C-driver's license. Trucks that have been ordered and partially paid for, but have not yet been delivered, may also be included in the truck fleet.

a) Emissions standard Euro V is the absolute minimum for all vehicles.

b) At least 90% of all vehicles must be Euro VI or be equipped with effective particle filter that fulfils the technical specifications set up by relevant authority.

c) At least 15% of the vehicles ≤ 3.5* tonnes must be powered by CNG/CBG, electricity or hydrogen.

d) At least 5% of vehicles > 3.5 tonnes must be powered by CNG/CBG, electricity, hydrogen or ED95. Plug-in hybrids can also be included. The requirement only applies if the fleet is ≥ 20 vehicles of this type.

e) For Finland, it also applies that at least 8% of lorries and trailers (line-haul) must be HCT (see definitions).

**4,25 tonnes for electrical vehicles.*

The requirement for EURO class applies to the vehicles covered by the classification system.

Electric vehicles within the vehicle categories found in the EURO classification system must always be considered as belonging to the highest EURO class.

✉ Documentation to show that the requirement is fulfilled, e.g. list of vehicles.

✉ Points a) and b) can alternatively be verified with a copy of Fair Transport (SE) approval, value-added level 2.

O4 New vehicles

The requirement applies to new vehicles that are added to the licensee's network of e-commerce logistics annually during the licence's period of validity

after the licence has been obtained, either as purchased, rented or leased. Trucks that have been ordered and partially paid for, but have not yet been delivered, may also be included.

The requirement applies to own vehicles and new vehicles from subcontractors/carriers that carry out e-commerce logistics. The term "new" does not include added capacity from subcontractors' existing vehicle fleet, only newly purchased, new rented or new leased vehicles.

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A. Light goods vehicles

New added light goods vehicles for the Nordic Swan Ecolabel network must be powered by CNG/CBG, electricity or hydrogen. Light goods vehicles mean all motor vehicles ≤ 3.5 tonnes/≤ 4.25 tons for electrical vehicles. In other words, utility vehicles, mopeds and bicycles are also included.

Hybrid technology is not accepted. In order to reward purchases of electric, CNG/CBG and hydrogen vehicles with a greater load capacity, different vehicles are weighted based on their gross weight according to the table below.

Light goods vehicle category	Gross vehicle weight (kg)	Load capacity factor
Panel van	2500–3500	10
Distribution vehicle (delivery vehicle)	1500–2499	7
Other motorised trucks	500–1499	4
Bicycles, mopeds, etc.	0–499	1

The new (added) load capacity from CNG/CBG-, electric- and hydrogen driven vehicles must amount to at least the levels in the table below, depending on how large a part of the country the licensee's network covers.

Company coverage of the country	Proportion of added load capacity from CNG/CBG, electric and hydrogen vehicles
Nationwide*	70%
Not nationwide	80%

***** *Nationwide means that the company offers e-commerce delivery to at least 80% of the country's inhabitants.*

Example calculation: 10 vans, 8 of which are CNG/CBG vehicles, and 50 electric bikes are purchased. Added load capacity from CNG/CBG, electric and hydrogen vehicles = (8 x 10) + (50 x1) / (10 x 10) + (50 x1) = 87%

B. Heavy goods vehicles

- At least 10% of the new added heavy goods vehicles for the Nordic Swan Ecolabel network must be powered by CNG/CBG, LNG/LBG, electricity or hydrogen. If the purchase is less than 10 vehicles, at least 1 vehicle must meet the requirement.
- By 1 January 2025 at the latest, the corresponding share must amount to 20%. If the purchase is less than 5 vehicles, at least 1 vehicle must meet the requirement.
- For Finland, it also applies that by January 1, 2025 at the latest, at least 10% of lorries and trailers (line-haul) must be HCT (see definitions).

The only accepted hybrid technology is range extender (see definitions).

✉ When applying for a licence: Investment plan for own vehicle fleet.

✉ Requirements in agreements with subcontractors/carriers for procured logistics services in the Nordic Swan Ecolabel network.

✉ The year after the licence is issued and all subsequent years: Extract from the vehicle register showing newly purchased and registered vehicles for the previous 12 months, se O19.

✉ The year after the license is issued and all subsequent years: Verification from subcontractors showing newly purchased and registered vehicles for the previous 12 months.

🔑 Check that the licensee has conducted the audit of logistics suppliers in the network.

Background

Reducing the transport sector's climate emissions requires changes to and development of the vehicle fleet towards both more energy-efficient vehicles and a significantly greater proportion of electric road transport. The trend towards electric vehicles is moving fast for passenger cars and light goods/distribution vehicles. Heavy goods vehicles, on the other hand, are not as easy to electrify and for now require other solutions. Requirement levels are therefore differentiated for heavy goods vehicles or light goods vehicles.

Requirement O3 ensures a minimum level that must be achieved for the vehicle fleet in order to obtain a licence. This is supplemented by requirement O4, which ensures that vehicles that are sustainable in the long term are purchased when renewing and expanding the vehicle fleet. The requirement covers both the vehicles owned by the licensee and the vehicles owned by subcontractors/carriers.

However, subcontractors of minor importance, corresponding to a total of up to 20% of the license holder's costs, have been exempted from requirement O3 (points c, d and e) and O4. This is to reduce the administrative burden. Nordic Ecolabelling has assessed that the exception can significantly reduce administration, with only insignificant negative environmental effect.

Trucks that have been ordered and partially paid for, but have not yet been delivered, may also be included in the truck fleet. However, this does not apply to vehicles that have only been booked.

Nordic Ecolabelling's requirement for powertrains with long-term sustainability refers primarily to electricity, but Natural Gas or Biogas (CNG/CBG/LNG/LBG) and hydrogen are also considered to be good alternatives. The percentages are relatively high, as the requirement only applies to new purchases of light goods vehicles, where emission-free alternatives are available, and they are economically viable.

For the fleet, it would have been better to set the requirement expressed as a percentage of kilometres driven. However, producing this data would probably be a considerable burden. Therefore, the requirement is expressed as a percentage of the number of added vehicles, weighted on the basis of their load capacity.

In the table above, the vehicles are categorised into different gross weights (found in the vehicle register) and the weighting is based on the load capacity for each category expressed as payload. The weighting is relatively simple and is based on the following logic. The bicycles and mopeds category ranges from simple bikes that can take a load of approx. 60 kg to cargo bikes that can carry 150–170 kg. The average payload for this category is approx. 100 kg. The upper category is electric panel vans (e.g., VW Crafter) with a payload of approx. 900–1000 kg. This means that an electric van carries about 10 times as much as an average bicycle. For this reason, it is weighted at 10, and then there is a descending scale for each step down in the gross weight of the vehicles.

High-Capacity Transports (HCT) means that the length and/or gross weight of the vehicle is allowed to increase, which means that a larger load can be transported. This leads to reduced climate impact but also lower transport costs and reduced road wear. Using HCT vehicles for road freight transport can reduce fuel consumption by up to 40% for individual vehicles[18].

In O3 and O4 there are certain special requirements that only apply to Finland. The reason is that Finnish companies do not need to demonstrate compliance with requirements O5 Renewable energy. HVO100, which is free of PFAD, cannot be demanded on the Finnish market. Nordic Ecolabelled e-commerce transports must not lead to an increased demand for PFAD.

O5 Renewable energy

The proportion of renewable energy used for the overall transport work in the Nordic Swan Ecolabel e-commerce network must amount to the levels below, as a bare minimum. Energy from both own vehicles and those of any subcontractors must be included.

Country	Proportion of renewable energy from the start date of the criteria until 31 Dec 2024	Proportion of renewable energy from 1 January 2025 until the end date of the criteria
Sweden	60%	75%
Norway and Denmark	40%	55%
Finland	Not applicable*	
If the licence applicant achieves an energy efficiency that is at least 30% better than the limit set in requirement O6, the proportion of renewable energy can be reduced by 10 percentage points, since energy efficiency has a major impact on the climate footprint.		

Definition of share of renewable energy:

$$\%\ renewable\ energy\ = \frac{Renewable\ fuels\ +\ 2.5\ x\ electric}{Total\ energy\ for\ transport}$$

Energy for the operation of terminals, sorting machines and the like is not included.

The initial limit value for Sweden has been harmonised with Fair Transport's value-added level 2.

[18] HCT - längre och tyngre fordon bidrar till smart logistik och minskad klimatpåverkan - Bransch (trafikverket.se) Trafikverkets hemsida https://bransch.trafikverket.se/

Appendix 2 sets out the specifics of the STEP calculation tool and rules for reporting.

Appendix 3 specifies the allocation and accounting principles that may be used.

In the event of significant external changes (regulations on act on reduction etc.) that may affect the availability of renewable fuels, the limit values may need to be adjusted. This will take place after a national consultation.

**Finland is exempt from the requirement as Nordic Swan Ecolabel e-commerce logistics must not lead to an increased demand for palm/PFAD.*

✉ Reporting of fuel components/volumes in STEP.

✉ A description of how reported data has been produced, including allocation methods, assumptions and supporting verification in the form of reports from fuel suppliers.

Background

Carrying the Nordic Swan Ecolabel for e-commerce logistics means that the transport and logistics companies involved have reduced their carbon footprint by, among other things, limiting or even phasing out fossil fuels, through an increase in the proportion of renewable energy in the transport system and electrification. Depending on the supply of renewable fuels in the Nordic countries, transport companies have different opportunities to quickly switch to renewable fuels. In all countries, however, it is possible to replace vehicles powered by fossil fuels and make the logistics system more efficient.

Nordic Ecolabelling expects all renewable fuels used by the transport/logistics company to meet the requirement, including those covered by national legislation on the admixture of renewable fuels through a reduction obligation and a quota obligation. Nordic Ecolabelling believes that it is important for major fuel users to lead the way, drive the development of more sustainable fuels, and signal that the market is ready to raise its ambition level, thereby creating a clear and rapid demand for renewable fuels. The requirement is also designed to work in all Nordic countries, regardless of variations in national legislation. The fact that all renewable fuels may be included, regardless of whether they are part of a statutory duty or not, also prevents vehicles from being refuelled in countries with lower statutory requirements for renewable admixture.

Renewable energy must also be produced from sustainable raw materials (see requirement O9). In order for Nordic Swan Ecolabel e-commerce logistics not to lead to an increased demand for PFAD in Finland, Finnish companies need not show fulfilment of the requirement. This is compensated by more pressing demands for Finland in other areas, see O3 and O4.

The requirement level is set on the basis of dialogue with logistics companies and analysis of opportunities for renewable energy in the transport sector in the Nordic countries. The higher requirement level for Sweden is partly due to the high statutory level of renewable fuels in petrol and diesel (reduction obligation), and to a developed market for completely renewable fuels for use in conventional vehicles. The limit value is the same as Fair Transport Sweden's criteria at value-added level 2.

The limit value for renewable energy will be raised for all countries during the licence's period of validity as a result of both the rapid development of renewable

liquid fuels and the expected rapid increase in electric vehicles in the companies' vehicle fleet. In order to benefit the companies that have a very high energy efficiency in the transport network, a slightly lower (10 percentage points) requirement limit regarding renewable energy is allowed.

In the calculator, Nordic Ecolabelling has chosen to give electricity a higher weighting in the calculation of the renewable share. Fuel Quality Directive (2015/652/EU) specifies an efficiency factor of 0.4 for battery-powered electric drive systems and a factor of 1 for internal combustion engines. Therefore, a factor of 2.5 (1/0.4) has been used to take into account the higher efficiency of the electric motor.

It is optional to include the energy use from e-commerce goods on trains. For those players who send a lot of e-commerce goods on trains, it can be advantageous to include the train's energy use. Please note that the volumes of packages transported by train must always be taken into account.

Energy use for ship transport shall not be included.

O6 Energy efficiency

The total energy (E) used for the overall transport work in the e-commerce network must not exceed:

$$E(kWh/consignment) \leq F\ x \left(\frac{company's\ average\ volumetric\ weight\ per\ consignment\ (kg)}{3.0\ (kg)} \right)$$

The formula is designed to handle differences in weight and volume of the goods and weights the licensee's average volumetric weight (kg) using the Nordic average volumetric weight (3.0 kg).

The calculation shall be performed in STEP where E is calculated automatically and displays fulfilment of the requirement.

F is a national adjusted factor (kWh/consignment):

For Norway, Sweden and Finland: F = 2.0

For Denmark: F = 1.8

Exception: If the license applicant's average volumetric weight per consignment is less than 1,5 kg, a maximum limit of 1 kWh per consignment will apply (E≤1).

If the license applicant achieves an energy efficiency that is at least 30% better than the limit, the proportion of renewable energy can be reduced by 10 percentage points in requirement O5.

A consignment is defined as the total amount of freight purchased by the e-commerce consumer in a single transaction.

✉ Annual reporting of fuel components/volumes, number of consignments and average volume per shipment in STEP.

✉ A description of how reported data has been produced, including allocation methods, assumptions and supporting verification in the form of reports from fuel suppliers (usually the same description and verification as for requirement O5).

Background

The purpose of this requirement is to exclude those logistics companies that do not work with:

- a high load factor
- efficient packaging solutions
- rail freight
- electrification
- an efficient logistics network and route planning
- co-loading with other carriers.

A key factor in creating sustainable transport is transport efficiency, i.e. reducing the unutilised energy within the logistics network in the form of low load factor, fragmentation of volumes between smaller vehicles, empty running, etc. It is therefore important that this area is covered by the Nordic Swan Ecolabel.

In order to set requirements concerning efficiency, energy consumption needs to be related to the benefits of the transport. In this case, the requirement will be set for the key figure (kWh/consignment) for the network. This is equivalent to the energy required to complete an average shipment.

During the dialogues that Nordic Ecolabelling has had with logistics operators, it has emerged that energy consumption will differ greatly depending on the type of goods being transported but also depending on other factors such as geography, demography and size of the country. The requirement limit will therefore be adapted in two ways:

Firstly, an adaption is made to the company's average size and weight of goods. If a company transports heavy and bulky goods, the limit for the key figure (kWh/consignment) will be raised for this particular company. In other words, this particular company can use more energy per consignment and still fulfil the requirement.

Secondly, an adjustment is made of the factor F for energy use per average consignment. The factor F is set to 2.0 kWh/average consignment for Norway, Sweden and Finland. Whereas the factor F 1.8 shall be used for Denmark,

However, for companies delivering very small packages, the formula cannot be applied, as it would result in an almost zero energy requirement per package. This is why an exception has been made: if the average volumetric weight of consignments is less than 1.5 kg, a maximum limit of 1 kWh per consignment will apply instead of the formula.

Based on the companies involved in the development process, a Nordic standard value has been calculated as an average volumetric weight of 3 kg. The license holders' average volumetric weight is related to this standard value to adjust the limit of energy efficiency that shall be obtained by the company.

During the development work, other functional units such as **tonne-kilometres**, parcels and km have been investigated, but in consultation with the industry the unit consignment has been deemed most relevant within e-commerce. In many cases, a consignment is the same as a parcel, but there may be consignments that

contain several parcels. The term consignment has been chosen as it can be linked to a single e-commerce transaction. In communication with the e-commerce consumer, however, consignment will be equated with parcel, since parcels are a simpler concept for a consumer to understand.

O7 Home delivery

Requirements a) and b) below must be met for the transport/logistics companies that offer home delivery. Home delivery cover the distance to transport/deliver the parcel from the final distribution spot and to the end consumers home address. Deliveries to parcel agents, physical stores or parcel lockers are not included.

a) At the time of application, home delivery must be conducted in accordance with the table below:

	Share of home delivery vehicles that always run on eletricity or renewable fuels*	
Company's coverage (share of postal numbers in the country)	**Sweden:**	**Denmark, Norway and Finland:**
> 80% (nationwide)	60%	50%
60–80%	80%	70%
< 60%	100%	100%

b) For home deliveries that require physical reciept notifications must always be issued in advance to the recipient. This does not apply to packages that are delivered in the mail/postal service.

A margin of error of 2% is permitted in the limit values for the proportion of vehicles that perform these deliveries. The margin of error includes for example incorrect refuelling.

** Defined as vehicles that run on electricity (regardless of energy production), pure (100%) biofuels, biogas (according to the green gas principle, see definitions), hydrogen and muscle power. Vehicles with dual powertrains, i.e. vehicles with hybrid technology, cannot be counted regardless of the fuel used.*

*** For Finland, HVO shall not be included in the calculation.*

✉ Information on the percentage of postal numbers covered by the licensee in the country where Nordic Swan Ecolabel e-commerce delivery is offered.

✉ Calculation and other verification showing compliance with the requirement level in the country in question. The verification must show that the vehicles have run on electricity or on renewable fuels.

✉ Description of system/procedure for notification of home delivery.

Background

Various last-mile options might be offered at check-out (see definitions). Home delivery is generally less energy efficient than delivery to parcel agents or parcel lockers. Home delivery entails a lower overall load factor, as the vehicle gradually empties as the delivery route continues, not to mention the numerous stops and starts with relatively higher emissions, more transport using smaller vehicles and a lack of coordination between the last-mile companies in the market.

At the same time, home delivery can be efficient, low-carbon and highly sustainable if private shopping trips or ownership of a car can be avoided.

In order to balance the differences in the effectiveness, a specific requirement has been set that applies solely to home delivery, and not to delivery to a parcel locker, agent or in-store pick-up point. Home delivery is defined as the distance from the final distribution spot and to the end consumers home address.

It is easier for a transport company that specialises in delivering goods to densely populated areas to establish electrified or renewable home deliveries, compared to those who offer home delivery throughout the country. Home deliveries in rural or sparsely populated areas mean longer distances which complicates for electrified vehicles, while access to renewable liquid and gaseous fuel alternatives are more limited. The requirement therefore involves three different levels, based on postal number coverage in each country.

This requirement makes it more likely that home delivery with the Nordic Swan Ecolabel will actually be performed by an electrified vehicle or a vehicle running on renewable fuel.

For home delivery, it is highly relevant to minimise repeat delivery attempts, which is why home delivery notifications must be sent.

O8 Climate performance

Licensees must, on an annual basis, improve the climate performance of the Nordic Swan Ecolabel e-commerce logistics, in absolute measures (not related to the number of consignments).

The licensee's climate performance per is calculated by STEP based on data reported in requirements O5 and O6.

By default, average emission coefficients are used in STEP. The licensee may use other emission coefficients for liquid and gaseous fuels, provided that they are verified via documentation from the fuel company. The emission coefficient for electricity must not be changed.

In the event of acquisitions, sales or consolidation between transport logistics companies that have a major impact on the transport network's climate emissions, the base year shall be calculated on the basis of a methodology accepted by Nordic Ecolabelling.

✉ Accounted climate performance according to STEP.

✉ If other emission coefficients are used: documentation, for example an environmental report from the fuel company.

Background

Climate/CO_2 performance is often highlighted as perhaps the most important factor for which to set requirements. Many of the Nordic Swan Ecolabel requirements drive a reduction in climate emissions, such as requirements concerning renewable energy, fossil-free home deliveries, the vehicle fleet and purchasing. In the dialogue conducted with stakeholders during the development of the criteria, Nordic Ecolabelling has concluded that it is difficult to set a steering requirement limit for e.g. CO_{2e}/consignment, since both the calculation methodology and the conditions for different companies differ greatly.

It is vital that the emission of greenhouse gases decreases rapidly and that this decrease starts immediately. In order to ensure that the Nordic Swan Ecolabelling leads to reduced CO_2 emissions, the climate performance in absolute measures will be followed up (not related to the number of consignments). This metric must be continuously improved year on year, although how great improvement is not regulated in the requirement. The climate performance generated in STEP is likely to differ from the climate key figure that the licensee communicates to its stakeholders, on the website and in customer reports. This is due to the lack of a common calculation methodology.

As stated in section 6.2, a great deal of work is under way on standardisation of climate calculations in the transport industry. There are thus hopes that the next generation of the criteria will be able to set steering requirements concerning climate performance when, in contrast to now, there may be an established and standardised CO_{2e} calculation in place for the industry.

The STEP calculation tool uses emission coefficients for fuels obtained from the Swedish Energy Agency, since the Swedish biofuel market is more developed than in the rest of the Nordic region and the statistics are comprehensive. However, the licence applicant may specify their own emission coefficients if they can be verified by the fuel company.

For electricity, an emission coefficient is used which is the same for everyone and which cannot be changed by the license applicant. The calculation tool STEP uses the so-called location-based electricity mix where the emission factor is determined based on the relevant electricity mix for a certain geography. In this case, Nordic electricity mix is used as the emission coefficient for electricity in the CO_{2e} calculation[19]. The reasons for this are that the Nordic electricity system is interconnected, and that the requirement involves reporting CO_{2e} emissions, rather than setting an absolute requirement limit. Nordic Ecolabelling also wishes to place the climate impact of electrification in each country on an equal footing as well as avoiding the risk that only the purchase of originally branded electricity contributes to a reduced climate impact.

In the next generation of criteria, the goal is to be able to set a climate requirement with a specific limit value.

O9 Sustainable raw materials/fuels

Fuel containing raw materials with a high ILUC risk in accordance with the EU's Renewable Energy Directive (RED II)[20] must not be used. The requirement covers both the licensee's own vehicles and those of the subcontractors/carriers included in the Nordic Swan Ecolabel logistics network.*

A calculation bases on mass balance in accordance with Article 30 of the Renewable Energy Directive can be used to verify that raw materials with a high ILUC risk have not been used.

Nordic Ecolabelling harmonize with the Nordic countries own definitions of the raw material Palm Fatty Acid Distillate (PFAD.) For Sweden, Norway and Denmark, this means that PFAD is classified as a by-/co-product from palm oil

[19] https://naturvardsverket.diva-portal.org/smash/get/diva2:1540012/FULLTEXT01.pdf
[20] Regulation (EU) 2019/807 of 13 March 2019 https://eur-lex.europa.EU/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0807&from=EN

production and PFAD is therefore considered a raw material with a high ILUC risk. Finland classifies PFAD as a residual product without a high ILUC risk.

** Limit: At least 95% of the volumes of biodiesel (HVO and FAME) in the transport network must be documented 100% free from raw materials with a high risk of iLUC*

Own fuels:

✉ Copy of agreement with the fuel supplier enclosed with application.

✉ Annual third party verified verification from fuel supplier(s) showing that purchased quantities of fuel do not contain raw materials with a high ILUC risk. Mass balance assessment/calculation can be used. The annual verification shall be submitted according to requirement O 19 Annual reporting.

Subcontractors' fuels:

✉ Copy of agreement, or other documentation, confirming that the licensee requires subcontractors to not use fuel based on raw materials with a high ILUC risk.

✉ Results of annual spot checks of subcontractors' fuel purchases.

Background

Renewable raw materials in fuels can have a negative impact on the climate, biodiversity and soil conditions in the countries where the raw material is produced. The EU's revised Renewable Energy Directive (REDII) has introduced new and ambitious requirements that will gradually phase out raw materials with a high ILUC risk (ILUC = Indirect Land Use Change). According to the directive, no raw materials with a high ILUC risk will count as renewable in fuel by 2030, unless they are certified as biofuel with a low ILUC risk. Currently, the EU only assesses primary palm oil as a commodity with a high ILUC risk. If any other raw material becomes high risk under the EU's assessment criteria, this raw material will also be automatically covered by the requirement. By already prohibiting raw materials with a high ILUC risk, Nordic Ecolabelling is setting stricter requirements than the legislation.

PFAD, a by-product from palm oil production, is handled in slightly different ways in the legislation of the different Nordic countries. This is largely due to the way PFAD is classified in the legislation – either as a by-product/co-product or as a residual/waste product in palm oil production. Sweden, Norway and Denmark consider PFAD to be a by-product/co-product, while Finland considers it a residual product.

In these criteria Nordic Ecolabelling harmonize with national classifications of PFAD, which means that requirement O9 prohibits PFAD in biofuels in Sweden, Denmark and Norway, but not in biofuels at the Finnish market. This is compensated by more ambitious requirements for Finland in other parts of the criteria.

The requirement is to be met at a "mass balance level".

The mass balance as outlined in the Renewable Energy Directive applies to biofuels – whether they are blended with fossil fuels or not. It enables batches of

biofuels with different sustainability characteristics to be physically mixed, while "administratively" being separate. The licence holder shall ensure that the fuel suppliers will deliver fuel that is free from palm oil and PFAD based on the suppliers' mass balance systems. Each year the license holder shall obtain a proof from the fuel supplier (third-party verified) to ensure fulfilment of the requirement and submit this to the Nordic Swan Ecolabel in accordance with requirement O19.

Compliance must be documented for at least 95% of the quantities of biodiesel used in the transport network. This means that very small amounts of palm oil or PFAD could be present in biodiesel in the Nordic Ecolabelled transport network. In Sweden, the average share of PFAD was 11% in the biodiesel quality HVO100

in 2022 (decreasing trend). This means that there can be a maximum of 0.05*0.11=0.6% PFAD in the pure biodiesel used in a Swan-labelled transport network.

O10 Driving behaviour

The requirement applies to both the licensee's employed drivers and drivers of subcontractors/contracted carriers used for Nordic Swan Ecolabel e-commerce logistics.

All motor vehicle drivers (driving licence category B or higher) must be trained in economical driving (see definitions). Drivers who have not already completed training must have done so within 12 months of the licence being received. New drivers must be trained within 12 months of starting their job.

The training in economical driving can be separate, integrated, for example in drivers training or introduction training. The training can be IRL or web-based or as elements included in category B driving licence training (completed since 2014).

A supplementary paragraph on measuring and feedback on actual fuel consumption can be found in O12 Optional requirements.

Requirements for follow-up of speed violations are found in O15 Safety point 5.

✉ For own employed drivers: Training plan that includes driver and date of completed or planned training in economical driving.

✉ For subcontractors: Requirements on training in agreements.

✉ The licence applicant's procedures and program on and follow-up of subcontractors' compliance with the terms of the agreement.

✉ The licence applicants result from the most recent year's review/follow up of subcontractors' compliance.

✉ The license applicant's action plan for any deviations discovered during the follow-up and control.

✉ For drivers with a class C1, C1+E, C or C+E driving licence, a Certificate of Professional Competence (CPC) is sufficient to verify the requirement.

Background

Fuel consumption can vary greatly between different driving styles. Practising economical driving is an effective method of reducing emissions in the short term. Another added benefit of economical driving is increased road safety. There are

indications that initiatives for economical driving can reduce fuel consumption by up to 15%, but reductions of around 7% are likely to be more common. The potential is greatest in urban traffic.[21] A mini pilot study conducted in Norway showed a 7–8% reduction in fuel consumption.[22]

Driving Licence Directive (EU) 2018/645[23] applies to drivers of heavy goods vehicles, who require certification. The directive states that drivers must undergo training in order to obtain a Certificate of Professional Competence, which is required to transport heavy goods. The latest amendment to the directive has clarified what the training should contain in terms of optimising fuel consumption. The directive requires further training every five years, and according to the directive the emphasis must be on the environmental impact of driving vehicles. All drivers of heavy goods vehicles can therefore be assumed to have undergone basic training and ongoing training in economical driving which is a way of maintaining the skills. The directive is implemented in the Nordic countries through: Lag (2007:1157) om yrkesförarkompetens (SE), Laki liikenteen palveluista 320/2017 (FI), Forskrift om grunnutdanning og etterutdanning for yrkessjåfører (yrkessjåførforskriften) (FOR-2008-04-16-362) (NO) and Bekendtgørelse nr. 322 af 30. marts 2020 om kvalifikationskrav til visse førere af køretøjer i vejtransport (DK).

National legislation in the Nordic region requires sections on optimum, fuel-efficient driving to be included in both basic and advanced training. Nordic Ecolabelling goes beyond the legislation, including not just truck drivers but all motor vehicle drivers with a category B driving licence or higher in the requirement for economical driving. For drivers with a category C1, C1+E, C or C+E driving licence, a Certificate of Professional Competence is sufficient to meet the requirement.

O11 Route optimisation

The transport/logistics company must employ digital route optimisation that includes at least all regional transport and last-mile transport by motor vehicle, in the Nordic Swan Ecolabel network.

The requirement also covers the subcontractors/carriers included in the licensee's network of Nordic Swan Ecolabel e-commerce logistics.

Digital route optimisation refers to a digital system that is continuously updated and thus ensures optimal routes that, for example, take into account parcel volumes, delivery points, traffic queues and roadworks. It is sufficient for routes to be optimised up to departure.

Regional transport and last-mile transport are the transport carried out from the distributing terminal to the end consumer, via any depots. Line-haul transport and other fixed routes are not covered.

A supplementary paragraph on dynamic route optimisation can be found in O12 Optional requirements.

✉ Description of the route optimisation tool(s) used by the licensee and its subcontractors and how they work to make the logistics more efficient.

🔑 On-site inspection.

[21] Vägledning för transportköpare Västmanland County Administrative Board, 2021
[22] Økonomisk kjøring gir kostnads- og miljøgevinster, Samferdsel 21-11-2019, https://samferdsel.toi.no/
[23] DIRECTIVE (EU) 2018/645 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

Background

Digital route planning is a method of planning and optimising the company's routes in a more or less advanced way. Route planning makes transport more resource-efficient, as the distance travelled is optimised, the number of vehicles used can be reduced, the number of stops per trip increases and the load factor increases. Up to 20% more efficient routes can be created using a digital tool for route planning, compared with manual (traditional) planning[24]. For companies with a large proportion of fixed routes, route optimisation can be done with some advance planning. Companies with varying routes, on the other hand, need to run the optimisation over the course of the day.

O12 Optional measures

This requirement contains six different measures that contribute to more sustainable e-commerce logistics. At least one (1) of these measures must be established in the operations to obtain a licence.

1. Intermodal transport

The licence applicant musthave a strategy for intermodality (see definitions), agreed by senior management, that aims to increase freight volumes by sea or rail.

Within one year of a licence being granted, the strategy decision must be followed up by a project plan approved and financed by management. The benefit must be realised within the period of validity of the licence.

Scheduled ferry traffic included in the road network is not considered an intermodal solution.

It may be worth linking this sub-requirement to the EU Taxonomy concerning the economic activity Freight rail transport.

✉ An agreed strategy or an approved and funded project plan.

2. Monitoring of actual fuel consumption

An (IT) system that reports more than just the vehicle's fuel consumption/ average consumption should be used and at least 50% of the vehicles deployed in the network must be covered.
The system must measure and deliver detailed driving and consumption data (to the office/control centre or to the driver). The system must give the company the ability to analyse the reason for the consumption.

✉ Description of the system and how large a proportion of the vehicles are connected.

3. Digital dynamic route optimisation

The license applicant must employ dynamic route optimisation that includes at least 20% of the parcel volumes delivered annually.

Dynamic route planning means that routes are optimised on a daily basis in terms of distance/energy efficiency, based on the goods to be delivered, and which vehicles and drivers are available. This requires a digital tool in which all the underlying data is analysed and presented to the planner.

Line-haul transport and other fixed routes are not covered.

[24] Förstudie samordnad varudistribution, Nationellt centrum för kommunal samordnad varudistribution, 2020

Requirement O10 sets an obligatory requirement for digital (static) route optimisation.

✉ Description of dynamic route optimisation system and how it contributes to increased energy efficiency and/or climate performance.

4. Co-loading/co-transport between different transport companies

The license applicant shall routinely coordinate/co-load at least one transport arrangement with one or more other transport/logistics operators (not subcontractors).

The co-loading/co-transport needs to entail an annualreduction of at least 10% in the number of kilometres driven and have a planned duration of at least 2 years.

✉ A description of how the collaboration is set up.

✉ An estimate of the efficiency/benefit of the collaboration.

5. Open charging infrastructure

In order to speed up the conditions for electrification, the license applicant must have a strategy agreed by senior management, to give its subcontractors/carriers access to its own operations' charging stations for light and heavy goods vehicles at at least 25% of its own terminals or depots.

Within one year of a licence being granted, the strategy decision must be followed up by a project plan approved and financed by management. The benefit must be realised within the period of validity of the licence.

✉ A list of the company's terminals and which of them offer open charging stations.

6. More eco-efficient packaging

In collaboration with e-commerce, the license applicant shall carry out ongoing work (not projects) that results in any of the following:

- less air in the packaging
- reduced amount of packaging material
- shipping packaging or shipping carriers returned or otherwise reused in closed systems

The work must comprise at least 20% of the parcel volumes delivered annually.

Requirement O17 sets an obligatory requirement for an agreement on dimensional weight (see definitions).

✉ A description of the work on more environmentally efficient packaging.

Background

1. Intermodal transport

Intermodal transport means that at least two modes of transport are used for freight, with the majority of the route covered by rail or sea. There are great expectations that intermodal transport will increase, thereby contributing to climate goals and increased transport efficiency. There is a strong desire to transfer transport from road to intermodal rail transport, but one of the main

obstacles mentioned is the lack of reliability on the rail network[25]. General obstacles to intermodal transport are the time factor, higher costs, port fees, lack of knowledge and resources, and various technical barriers[26]. Since major barriers to intermodality in the transport of e-commerce goods remain, this is an optional requirement.

2. Monitoring of actual fuel consumption

There are various systems that systematically measure and report vehicles' fuel consumption, and that can also feed this back to the driver. The aim is to provide a basis for decisions that reduce fuel consumption, and that support and consolidate an economical driving style. A survey by the Swedish Transport Administration (Trafikverket),[27] lists three main categories of IT systems (see below), with systems in categories II and III approved for this requirement.

Category	Description
I	Information on fuel consumption is delivered to the office/control centre.
II	Detailed driving and consumption data is measured and delivered to the office/control centre. Allows for cause of consumption to be analysed.
III	Detailed driving and consumption data is measured and displayed to the driver in the cab. Encourages maintenance of economical driving.

3. Digital dynamic route optimisation

Digital dynamic route optimisation creates delivery routes and stop sequences according to customer and order type, based on daily variations in demand. Dynamic route optimisation determines the unique routes based on the goods to be driven for the day, time windows, stop times, load capacity, driver's working hours, returns, etc. Dynamic route optimisation is far from standard in the industry today. Requirement O8 sets an obligatory requirement for digital (static) route optimisation.

Some examples of digital dymanic route optimisaton systems ate Descartes and Route4Me.

4. Co-loading/co-transport

Co-loading/co-transport can take place, for example, through coordinated distribution of goods to certain cities or areas through a carrier-neutral transhipment hub or parcel lockers, or through different logistics companies collaborating on transport to e.g. a logistics centre. Co-loading is primarily used in urban environments to reduce the number of vehicle movements. In rural areas, the driving force is to increase the load factor and achieve economy over long distances. There are many different variations on co-loading and

[25] Hinder för ökad omlastning till intermodala järnvägstransporter. Delredovisning av regeringsuppdrag. Trafikverket. 2019.
[2626] Uppdrag att intensifiera arbetet med att främja intermodala järnvägstransporter. Redovisning av regeringsuppdrag Trafikverket. 2021.
[27] Klimatsmart val av IT-stöd för att öka lönsamheten- kartläggning av uppföljningssystem, och stöd för förare under färd. Trafikverket. 2012.

coordination, but they all reduce the number of journeys and/or create more efficient logistics.

5. Open charging infrastructure

With the electrification of the automotive sector, logistics companies also need to meet the carriers' charging needs[28]. Under this measure, the licensee gives partners/subcontractors/carriers access to its own truck charging stations (semi-public charging points), often located at logistics nodes, terminals and depots.

6. More eco-efficient packaging

The packaging used, packaging materials and how efficiently the goods are packaged are beyond the steerability of the transport/logistics companies, as it is the responsibility of the e-retailers. During the development of the criteria, however, we have seen that carriers, in collaboration with e-commerce, are testing various measures to reduce the environmental impact of packaging. This measure rewards work that is so effective that it is made permanent within the business.

The Norwegian start-up Packoorang AS has for example developed a reusable packaging that replaces traditional corrugated cardboard or paperboard packaging for e-commerce. This measure rewards work on more environmentally efficient packaging that it is so effective, it is made permanent within the business. The Swedish working group "Frakta Luft"[29] (Transporting Air) has drawn up a nine-point list of measures that may offer inspiration.

8.3 Social requirements

The requirements in this section are harmonised with Fair Transport SE, basic level and the new criteria for Good Environmental Choice Local Goods Transport 2022. Approval or licence certificates in accordance with any of these systems automatically verify requirements O13 and O15.

O13 Labour standards for employees

The following requirements apply to both own drivers employed and those drivers who are subcontractors, i.e. employees of carriers and hauliers. The requirement applies to all drivers who carry out transport within the e-commerce network that is to be Nordic Swan Ecolabel.

First comes the requirement, then national references to relevant agreements and finally how the requirement is to be documented by the applicant.

a) The licence applicant must comply with agreements concluded between the social partners (employer's organisation and employee organisation/union organisation), known as collective agreements, see references below.

Alternatively:

b) Salaries, holidays, working hours and insurance cover, including collective pension provision, must be at least on a par with the terms

[28] Behov av laddinfrastruktur för snabbladdning av tunga fordon längs större vägar. Trafikverket, report 2021:012.
[29] A working group within the framework of the industry initiative Hållbar E-handel (Sustainable E-commerce) www.hallbarehandel.org

and conditions set out in the agreement specified in point a) above. There are national market adaptations, see below.

Sweden

Swedish Transport Workers' Union, and Biltrafiken's Employers' Association Transport Agreement: Arbetsrättsliga villkor för godsförare

(Procurement authority's website, Requirement ID: 11367:3, in accordance with Appendix 1.)

SEKO agreement for Postal Services: Avtal Kommunikation

Denmark:

One of the most common collective agreements according to the Danish Road Traffic Authority:
https://fstyr.dk/da/Erhvervstransport/Godskoersel/Overenskomstforhold

For commercial vehicles, reference is made to the conditions found in the collective agreements for drivers who carry out goods transport, Krav til varebilsvognmænd (fstyr.dk)

Finland:

Any of the following collective agreements within Central Organisation of Finnish Trade Unions SAK member unions:

Transport Workers' Union https://www.akt.fi/in-english/

Finnish Post and Logistics Union, PAU Collective Agreement
https://www.pau.fi/

Norway:

Written labour agreement, the content of which complies with Norwegian legislation, with reference to the minimum requirements in Section 14-6 of the Norwegian Working Environment Act.

As a minimum, drivers must have a salary equivalent to that stated in the "Regulation on general application of wage agreements for goods transport by road" and be covered by the statutory insurance and pension insurance provision. Forskrift om allmenngjøring.

If self-employees are engaged as subcontractors, these must be real independent (reelt selvstendige).

If subcontractors are used for deliveries with vans (B driver's license), the license applicant must ensure that all points in the checklist (see appendix 5) are handled in the business.

If a piecework system is used, it may be converted to hourly wages.

☒ For own employees: Most recently signed collective agreement. If there is no collective agreement, complete Appendix 4 for the country in question instead.

☒ For employees of subcontractors: Written agreement/contract/Code of Conduct between the licensee and subcontractor, showing that the licensee sets requirements for collective agreements or for labour standards on a par with collective agreements with possible national adaptations).

☒ The licence applicant's procedures and program on follow-up of subcontractors' compliance with the terms of the agreement/contract/Code of Conduct

☒ The licence applicants result from the most recent year's review/follow up of subcontractors compliance.

☒ The license applicant's action plan for any deviations discovered during the follow-up and control.

✉ The requirement can also be verified with a copy of an approval from Fair Transport Sweden or licence certificate for Good Environmental Choice Local Goods Transport 2022.

✉ For Norwegian license applicants with self-employed subcontractors: documentation that proves real independence.

✉ For Norwegian license applicants with van deliveries subcontractors: Documentation showing that all points in Appendix 5 are handled in the business.

🔑 Nordic Ecolabelling conducts random checks on implemented reviews of the terms and conditions of the agreement.

🔑 For Norwegian license applicants with subcontractors of van deliveries: Nordic Ecolabelling reserves the right to contact the relevant authority regarding control of compliance with Appendix 5.

Background

A sustainable transport industry requires that the company provides its employees with safe employment and good working conditions, and complies with laws, ordinances and regulations. This shall of course apply regardless of whether the employee is employed by the licensee or by a subcontractor carrying out transport work for the licensee. Although the Nordic Swan Ecolabel is an environmental label, we always set requirements concerning social sustainability areas that are deemed to be of high relevance.

As an agreement between the two social partners in the labour market, a collective agreement governs forms of employment, pay and remuneration, overtime, leave, working hours, pensions and insurance, etc.

Nordic Ecolabelling's requirements for labour standards are based on the basic level of the Swedish transport industry's Fair Transport system. The requirement means that there must be *either* a collective agreement in place *or* an agreement covering labour standards to an equivalent level. Stated per country, reference is then made to the relevant agreements and legislation.

If the licence applicant has a collective agreement, the requirement is easily verified with the latest signed agreement. If there is no collective agreement, the terms must be entered in Appendix 4 for the country in question. A review then takes place to check that these are at an "equivalent level".

Licence applicants who engage subcontractors steer these by setting requirements for labour standards in written agreements/contracts/Codes of Conduct. Nordic Ecolabelling reviews these and the licence applicant's working methods in order to check how agreements/contracts are being complied with in practice.

There are differences between the Nordic countries regarding how regulated the labour market is, therefore, there are relevant national adaptations. For Denmark, reference is made to the special agreement for drivers of vans. For Norway there is an additional requirement on subcontractors without employees (sole proprietorship).

As described in the report "Forebygging av kriminalitet i varebilbransjen[30] problems with crime in working life in this part of the transport industry in Norway have been discovered. The problems include tax evasion, social security fraud, exploitation of employees and illegal wages. The criminals are often organized and given a financial advantage in competition with other businesses that follow laws and regulations. In Norway, freight transport with vans up to 3.5 tonnes is unregulated. This means that the main supplier and client do not have a statutory obligation to check the county and working conditions of hired subcontractors. There are also no requirements for driving and rest times as well as tachographs that are required for heavy vehicles. To minimize the risk of crime in working life, a license applicant in Norway who uses subcontractors for commercial vehicle transport (vehicles ≤ 3.5 tons) must work through the checklist in Appendix 5 and ensure that the business has functioning routines and controls at all points.

O14 Working conditions, platform work

In order to ensure that the transport service is carried out in a socially responsible way, all persons carrying out transport work on behalf of the licence applicant must, as contractors, be:

a) Covered by a collective agreement or terms and conditions at least on a par with such an agreement.

a) Employed by an umbrella company.

b) Paid an hourly wage. Percentage-based pay is not accepted.

There must also be a written agreement between the licence applicant and the umbrella company governing implementation of the assignment and clarifying employer responsibility.

The employment form "contract/platform work" is relatively new to the Nordic labour market and is more common in some Nordic countries than others.

Subcontractors who have an F tax slip are self-employed and are not covered by this requirement.

The umbrella company is to be regarded as a tier 1 supplier.

✉ Signed Appendix 6.

✉ Extract from the agreement between the licence applicant and the umbrella company/companies engaged, demonstrating regulation of the above requirements.

✉ The licence applicant's procedures and follow-up of compliance with the agreement on the part of the umbrella company.

✉ Extract from the agreement between the umbrella company and the individual driver, demonstrating regulation of the above requirements.

Background

The strong growth in e-commerce has prompted higher demand for transport and postal services, which has led to new players entering the market. Some of these are platform companies that use various forms of employment. One of the major challenges of platform work is the different business structures, which are

[30] Forebygging av kriminalitet i varebilbransjen. Råd og tiltak for hovedleverandører og oppdragsgivere, juni 2022.

disrupting current systems. When different employer functions are divided between different players, it is no longer clear who the employer actually is.

Some platform companies employ their staff as usual and become employers, while others use the employment form of contractors[31]. This means that the worker invoices and pays tax (and other social security contributions) via a third party, a so-called umbrella company. This third party in turn charges the worker a fee for his/her services. In other words, the worker performs a service for the platform company, but receives pay from a third party.

Using contractors can be a way of modernising and meeting new demands in the labour market without sacrificing statutory rights and healthy conditions. The main principle should be that social rights should be guaranteed regardless of the type of employment[32,33]. To guarantee this, Nordic Ecolabelling requires drivers to be employed by the umbrella company, and that the agreement between the licensee and the umbrella company (third party) clarifies employer responsibility and establishes working conditions on a par with a collective agreement. In addition, there is a requirement that a percentage-based salary is not accepted. A percentage-based salary is percentage pay based solely on the actual deliveries a person has been given. This remuneration model may result in unreasonably low pay for a worker who remains available for work.

An authorisation system has been established for umbrella companies[34] in Sweden. This could become a requirement in the next generation of the criteria.

O15 Safety

Applies to the license holder's own drivers and vehicles:

The applicant must have the following (point 1-5) in place at the time of application.

1. Customised checklists for safety checks on vehicles, drivers and load securing including at least the actions stated in Appendix 7.
2. Procedures for ensuring that safety checks, including tyre pressure checks, are carried out as specified in the checklist/safety check procedure.
3. Procedures and/or system support ensuring that checks, servicing and vehicle inspections are carried out.
4. Procedures and/or system support that describes how driving and rest times, plus National acts on working time in road transportation, are complied with and monitored.
5. Documented procedures for monitoring speeds and any speed limit violations.

Applies to the license holder's subcontractors:

The applicant must have the following procedures (point 6-8) for subcontractors in place at the time of application:

[31] Fri frakt till ett högt pris. En analys av e-handelns utveckling och hållbarhet. Swedish Commercial Employees' Union, SEKO and Transport Workers' Union. 2021.
[32] EU Proposal for a Directive on improving working conditions in platform work – 2021/0414 (COD)
[33] Plattformsarbete i Norden, Cecilia Westerlund on behalf of the Nordic Transport Workers' Federation, 2022.
[34] Egenanställningsföretagens branschorganisation https://www.egenanstallning.org/

6. Procedures and/or system support ensuring that checks, servicing and vehicle inspections are carried out.
7. Procedures and/or system support that describes how driving and rest times, plus National acts on working time in road transportation, are complied with and monitored.
8. Documented procedures for monitoring speeds and any speed limit violations.

There are various aids (templates, checklists, procedures and the like) to support this, see Fair Transport and the associations for employees and employers in transport.

✉ Tje applicants procedures and checklists in accordance with points 1–5 above.

✉ The license applicant's procedures for subcontractors in accordance with points 6–8 above.

✉ Alternatively, the requirement can be verified with a copy of Fair Transport (SE) approval basic level or a licence certificate for Good Environmental Choice Local Goods Transport 2022.

Background

Measures to reduce the number of road traffic accidents and their impacts are targeted at roads, vehicles and use, and responsibility is thus shared by several parties[35]. In these criteria, we set requirements relating to vehicle use, as this is what the licensee primarily has steerability over. The requirement covers areas where legislation exists but compliance is inadequate, and areas not covered by legislation.

The requirement is to a large extent harmonised with the requirements set in the basic level of Fair Transport. This means that a carrier/haulier that is approved in accordance with Fair Transport in Sweden is automatically considered to fulfil this requirement.

8.4 Requirements included in agreements between carrier and e-retailer

O16 Consumer promise on delivery time

Delivery options promising same calendar day delivery in the check-out cannot carry the Nordic Swan Ecolabel.

There is an exception to this basic rule which means:

Delivery options that promise delivery on the same calendar day may also carry the Nordic Swan Ecolabel if all last-mile transport in the network takes place using only electric or muscle power.

✉ Agreement between the licensee and e-commerce company showing compliance with the requirement and requiring that this is clearly stated in the check-out solution.

🔑 Nordic Ecolabelling carries out random checks of e-retailers' check-out solutions.

[35] Djupstudieanalys av olyckor med tunga lastbilar, Effekter av åtgärder för en säker tung trafik. Trafikverket, Report 2008:136.

✉ Only for the exception: List of motor vehicles and bicycles used in last-mile deliveries, with specification of their powertrain.

🔑 Only for the exception: Nordic Ecolabelling carries out random checks of the vehicle fleet.

Background

The development of ever-faster deliveries can make it more difficult to create sustainable e-commerce logistics from a broader perspective. Swedish analysis agency Trafikanalys reports that fast deliveries with narrow time windows can lead to inefficient routes, a lower load factor and increased delivery vehicle traffic, compared with deliveries with slightly longer delivery times and wider time windows. Narrow time windows also mean deliveries to the same area at different times of the day, instead of all deliveries to a specific area being delivered on the same round.

Allowing the delivery to take a little more time makes the transport and logistics companies better able to optimise routes and co-load. A longer time window provides opportunities to balance volumes, as not everything needs to go through the network at the same pace. It is also a prerequisite for transferring goods to rail, as transshipment and transport to and from combi terminals takes time, plus larger amounts of goods are required to make rail transport financially viable. In addition, longer time windows can alleviate the pressure, as well as creating benefits for the social sustainability of drivers and for road safety.

Today, there is also a trend driving even faster deliveries – same day delivery, which many agree is not a sustainable development. This is despite many studies[36] showing that it is more important for the e-commerce consumer to decide where (flexiblity) and to know when a delivery will arrive (punctuality) rather than that it will arrive quickly. One purpose of the Nordic Swan Ecolabel is thus to act as a counterweight to increasingly faster deliveries.

In summary, there is a requirement for a consumer promise in the checkout solution, i.e. for the delivery time shown when the consumer chooses shipping, which prevents the promise of same day delivery. In this way, Swan-labelled e-commerce transport can create new standards for consumers and be a counter force against very fast deliveries and increase the conditions for increased environmental and social sustainability as the logistics system can be made more efficient and optimized.

It is possible to create fast, efficient and at the same time sustainable/climate-smart transport arrangements. However, this requires one or more conditions to be met, such as the use of existing networks/journeys, for example parcels delivered with the post or morning newspapers, electric vehicles and/or city terminals/distribution hubs that provide short home deliveries. A high/good load factor can be achieved in specific systems, but often with more fragmented transport, smaller and less energy-efficient vehicles and more vehicles than necessary, which means more frequent departures. Therefore, the requirement

[36] Among other, the E-barometer for the second quarter of 2021 and the behavioral study that Nordic Ecolabelling had HUI carry out in the spring of 2022.

also contains an opportunity to Ecolabel same-day delivery deliveries if the conditions specified in the requirement are met.

O17 Incentives to minimise air in packaging

In agreements between licence applicant and e-commerce company concerning Nordic Swan Ecolabel e-commerce logistics, the pricing model must be based on volume (i.e. dimensional weight or volumetric weight, see definitions) according to the formula below.

$$Dimensional\ weight\ =\ height\ (m)\ x\ width\ (m)\ x\ length\ (m)\ x\ conversion\ factor.$$

Conversion factor = 280 kg/m^3.

The requirement does not apply to e-commerce goods > 20 kg or e-commerce goods transported as part of the regular postal service.

The requirement must be met no later than 12 months after the license has been granted.

The pricing model must not be based on weight or unit.

Nordic Ecolabelling may accept other pricing models if they are considered to provide an equivalent reduction of air in packaging or demonstrate comparable efficiency

✉ Copies of anonymised agreements with e-commerce companies.

🔑 Nordic Ecolabelling carries out random checks of invoices.

Background

E-commerce differs from traditional commerce, as goods are transported directly from warehouse to end consumer and not via a store, which means that consumers often receive both secondary and primary packaging, increasing resource consumption and volumes of waste. The indirect impact of air in packaging has a greater negative effect in terms of energy use during transport and risk of scrapping than the direct impact of energy in the manufacture of packaging materials and waste management.[37]

Efficient packaging of an e-commerce product is therefore a prerequisite for a good overall load factor. Although the e-commerce company makes all the decisions on the packaging, there is a risk that the end customer will see it as part of the transport solution. Despite a lack of steerability, it is important that Nordic Ecolabelling attempts to set requirements for packaging.

An effective way to reduce packaging volumes is for the carrier to price logistics services so that they are cheaper, the more efficiently the e-retailer packages its goods. A pricing model that favours efficient packaging is one whereby carriers charge on the basis of dimensional weight[38], or volumetric weight as it is also known. The volumetric weight is calculated using a standardised formula and then compared with the actual weight, with the higher weight determining the

[37] Packaging logistics. Henrik Pålsson, 2018

[38] This is calculated by multiplying the volume of the packaging in m^3 by 280 (conversion factor to weight, i.e. kg per 1 m^3). 1 consignment weighing 10 kg with dimensions of 0.5 x 0.5 x 0.5 m, i.e. actual weight 10 kg, has a volumetric weight of 0.5 x 0.5 x 0.5 = 0.125 x 280 kg = 35 kg. The dimensional weight is thus 35 kg, which is the basis on which the e-commerce company is charged.

transport cost. The formula uses the industry-agreed factor of 280[39] kg/m^3 for domestic transport.

The model of pricing by weight or so-called flat rates where you pay per parcel sent, regardless of the volume of the goods, are not accepted.

A certain type of goods is not suitable for a pricing model based on volumetric weight. For example, white goods, building materials and other e-sold goods that are delivered on pallets. These are exempt from the requirement through the weight limit of 20 kg. The same applies to e-commerce items in the mail stream which are priced with the postage determined by the responsible government authorities. Nordic Ecolabelling may accept other pricing models if they are considered to provide an equivalent reduction of air in packaging or demonstrate comparable efficiency.

8.5 Information requirements

O18 Consumer information

The requirement consists of two parts, both of which must be met:

A. Information in check-out

At check-out, the Nordic Swan Ecolabel mark must be visible together with the following text:

"Nordic Swan Ecolabel delivery in XX" //And the equivalent in the respective Nordic language// XX is replaced by the country where the licensee offers Nordic Swan Ecolabelled delivery.

The mark with associated text must be positioned so that it is clearly understood that it is the delivery option that is certified with the Nordic Swan Ecolabel and not the entire logistics/transport company nor the e-commerce company.

The Nordic Swan Ecolabel must not be combined with other unverified claims such as "Climate-smart delivery". Verified claims such as Fair Transport and "Fossil-free delivery" which are based on compliance with the industry agreement for fossil-free deliveries (www.svenskhandel.se) can be combined with the Nordic Swan Ecolabel.

In addition to the text "Nordic Swan Ecolabel delivery in XX" it is recommended (but not required) that the meaning of certification is explained in the check-out. In that case, it should be done with the sentence:

"Nordic Swan Ecolabel delivery in XX* strong requirements on climate performance and high energy efficiency". //And the equivalent in the respective Nordic language//

*XX is replaced by the country where the licensee offers Nordic Swan Ecolabelled delivery

More information can be found in "Guidelines and recommendations for communicating Nordic Swan Ecolabel deliveries" which are published on the respective ecolabelling organization's website. For addresses see page 3.

B. Post Purchase communication

In addition, in its direct communication to the consumer (e.g. in delivery notices), the licensee must include a brief explanation of what the Nordic

[39] Vikt och volymberäkning för Transport | ColliCare Logistics

Ecolabel means, see " Rules and recommendations for licence holders' communication" in appendix 8.

✉ The license holders' routines for implementing the requirement and the routines for follow up and random checks that the customers have implemented the requirement in their check-outs.

✉ List of companies that have signed agreements for Nordic Swan Ecolabel e-commerce logistics including web page addresses must be available on request.

🔑 Nordic Ecolabelling carries out random checks of the company's check-out solutions.

Background

There are often different green claims in the check-out, with varying clarity and appropriateness to consumers. In order to clarify what the Nordic Swan Ecolabel means, there must be a definition directly connected to the label/mark so that it is clearly understood that it is the delivery option that is certified with the Nordic Swan Ecolabel and not the entire transport/logistics company and not the e-commerce company either.

The text should read "Nordic Swan Ecolabel delivery in XX" where XX is replaced by the country where the licensee offers Nordic Swan Ecolabelled delivery.The space in a check-out solution is very limited and there are technical limitations because it must be possible to shop online both on computer and mobile. Therefore, the sentence is very concise.

In addition, Nordic Ecolabelling recommends (but does not require) a short explanatory text in the check-out that describes for the consumer the most important thing about what the label means and implies. The text that should be used in that case is in " Nordic Swan Ecolabel delivery in XX with better climate performance and high energy efficiency".

To confirm the consumer's feeling of having made a good choice, the licensee must follow up the delivery choice made at checkout with information in the order confirmation, delivery confirmations and/or notifications. Appendix 7 to the criteria document contains more information about what must or can be written.

8.6 Licence maintenance

O19 Annual reporting

To ensure compliance with the requirements over the validity period of the criteria, the license applicant must have a written routine for informing Nordic Ecolabelling in the event of significant changes that affect the licence.

In addition, the following requirements must be reported annually to Nordic Ecolabelling:

O1: Decision based on recent investigation of possibilities for intermodal solutions.

O4: New vehicles

O5: Renewable fuel in the STEP calculation tool

O6: Energy efficiency in STEP

O7: Home delivery

O8: Climate performance in STEP

O9: Sustainable raw materials/fuels

O18: Consumer Information. List of companies that have signed agreements for Nordic Swan Ecolabel e-commerce logistics including web page addresses may be available on request

It is desirable to bring the reporting systems in line with the requirements of the Corporate Sustainability Reporting Directive (CSRD) in order to facilitate automated input.

✉ Annual report demonstrating compliance with the above requirements, submitted to Nordic Ecolabelling no later than 1 April of the following year for review. For details, see the respective documentation requirements.

Background

It is important to check a number of the requirements in the criteria document over time to establish compliance throughout the licence period, i.e., the validity period of the criteria. These relate to the annual investigation on using train as means of transport, the new acquisition of vehicles, renewable fuels (the limit value for which is also set to be tightened in the middle of the validity period), the limit value for energy efficiency, climate performance and sustainable fuels.

The licensee must report the outcomes relating to these requirements annually, as specified alongside the envelope icon in the respective requirements. Requirement O19 on information at check-out must also be checked annually to ensure that new customers/e-commerce companies display correct information in their check-out solution.

O20 Feedback from clients and consumers

The licensee must guarantee that the quality of the Nordic Swan Ecolabel e-commerce logistics is maintained during the period of validity of the criteria. The license applicant must, therefore, have a procedure in place for receiving feedback from the end consumer and e-commerce companies.

As a minimum, the procedure needs to cover feedback about products damaged in transit, too much air in packaging, non-eco-friendly packaging or inadequate attention to road safety during delivery or different types of improvement proposals within sustainability and transport.

✉ Company procedure for receiving and handling feedback.

🔑 Compliance check during on-site audit.

Background

The licensee must have a set procedure in place for receiving feedback from clients and end-consumers covering the aspects described in the requirement.

Appendix 1 UN Sustainable Development Goals

The Sustainable Development Goals (SDGs) or Global Goals are a universal call for action to fight poverty and inequalities, protect the planet and tackle climate change by 2030.

On an overall level Nordic Swan Ecolabel e-commerce logistics contribute to *Goal 12:* Ensure sustainable consumption and production patterns.

This is done through requirements that promote sustainable management and efficient use of natural resources in transport, for example:

- Requirements for energy efficiency in the transport system.
- Reduce the climate impact from the logistics network by gradually increasing requirements for renewable fuel.
- Renewable fuels must not have a high risk of causing land use change.
- Economic incentives to minimize air in packaging for transport.

More specifically Nordic Swan Ecolabel also contributes to the following UN Sustainable Development Goals:

Goal 7: Promotes renewable energy and energy efficiency:

- A certain proportion of the energy used for the transport must be renewable.
- New vehicles must a large extent be electric.

Goal 8: Protects labour rights:

- Requires good basic working conditions for drivers, beyond legislation.
- Requires basic safety for drivers, vehicles, and cargo, beyond legislation.

Goal 11: Promotes sustainable transport systems:

- A certain proportion of energy used for the transport must be renewable.
- Requirements for energy efficiency in the transport system.
- A large proportion of the vehicles must meet certain European emission standards.

Goal 13: Requires efficient energy use and reduces climate gas emissions:

- Requirements for energy efficiency in the transport system.
- Reduce the climate impact from the logistics network by gradually increasing requirements for renewable fuel.
- Requirements that accelerate the transition to electrified vehicles.
- Drivers must be trained in economic driving.

Goal 15: Promotes biodiversity and sustainable use of terrestrial ecosystems:

- Renewable fuels must not have a high risk of causing land use change, such as for example palm oil and PFAD.