About Nordic Ecolabelled

Hotels, Restaurants and Conference Facilities

Draft of version 4.0 for consultation

Background to ecolabelling

30 November 2012

Nordic Ecolabelling

Nordic Ecolabelled hotels, restaurants and conference facilities - Background to ecolabelling

072/Draft of version 4.0 for consultation, 30 November 2012

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1 Summary

This document explains the background to the criteria set out in the criteria document "Nordic ecolabelling of hotels, restaurants and conferences v. 4". It also provides justification of the criteria for applicants, users and other interested parties. When setting out criteria at Nordic Ecolabelling, the product's environmental impact is assessed throughout its entire life cycle and in selecting the criteria the RPS (relevance, potential and steerability) of the individual requirements are assessed.

The main criteria for ecolabelling hotels, restaurants and conference facilities are criteria related to energy, chemicals and water consumption, and to minimising waste. The purpose is to reduce environmental impact by setting criteria that encourage:

- Operations with low energy consumption
- Operations with low chemical and water consumption
- Sorting and recycling of waste
- Restaurants with a high proportion of organic food and beverages

The criteria are divided into a common section applicable to all kinds of business. This is followed by a number of sections that are specific to particular types of business (such as the section on "Food" for restaurants and the section on "Guest rooms" for hotels).

The most important changes made in the consultation draft of this version of the criteria are:

- The criteria for hotels and restaurants have been merged into one document.
- The criteria now also include conferences (without accommodation).
- If several of these different elements are part of the same business and are marketed as a unit, all of them must be included in the licence.
- It is now possible to apply for a licence in the Baltic states.
- An energy tool has been developed to calculate business-specific limit values relating to the type of business, plus its heating method, area, number of guests, climate zone, etc.
- The limit values for water and waste have been retained, but are calculated in a different way compared with previous criteria for hotels.
- The business must fulfil the energy limit value and another limit value of the applicant's choice.
- The limit value requirement for chemicals has been deleted, and instead stricter requirements have been set regarding the proportion of ecolabelled chemicals.
- The requirements on the proportion of organic food have been tightened up.
- The requirements on fish that may not be served have been tightened up.

2 Basic facts about the criteria

Products that can be labelled

Hotels, youth hostels, restaurants and conference facilities (see definitions below) can be awarded the Nordic Ecolabel.

If several of these different elements are part of the same business and are marketed as a unit, all of them must be included in the licence.

Hotels and youth hostels:

Establishments that offer accommodation can be Nordic Ecolabelled. In general, this means hotels and youth hostels. The businesses that do not offer breakfast must meet a stricter limit value, see chapter "Limit values for energy"

Restaurants:

The term restaurant includes all businesses that serve prepared food that is to be consumed on the premises. This includes restaurants, institutional kitchens, canteens, street kitchens, and cafés, as well as canteens in schools, hospitals, etc. Catering operations and take away restaurants can also be awarded the Nordic Ecolabel.
The primary function of the operation must be to prepare and serve food.

Conference facilities:

Conference facilities can be awarded the Nordic Ecolabel if the licence includes a Nordic Ecolabelled restaurant, either run by the business itself or under a contract with a sub-contractor. If the conference does not have its own accommodation but instead recommends accommodation to its guests, the accommodation must be Nordic Ecolabelled.

Spas:

If the applicant business includes spa operations, this operation must, as a starting point, be included in the limit value requirements for energy (obligatory) and water (optional). Exceptions may be made if the business through measurement or through an external professional assessment is able to separately account for its consumption of water and energy. Note that it is not possible to market a business as a "Nordic Ecolabelled spa" even if its consumption is included, because the Nordic Ecolabel's criteria do not cover the health treatments that are often associated with a spa.

Limitations:

Only businesses that are located in the Nordic or Baltic countries can be Nordic Ecolabelled as the obligatory energy limit value necessitates a geographical restriction within these climate zones.

Accommodation/restaurants/conferences on cruise ships/ferries/trains cannot be awarded the Nordic Ecolabel within the framework of these criteria.

See further justification for limitations in Section 5, What can carry the Nordic Ecolabel.

Justification for Nordic Ecolabelling

Hotel, restaurant and conference operations are central services in the tourism industry. Tourism has been steadily growing in recent decades and today is one of the most important industries in the global economy.

Hotels, restaurants and conferences are similar operations from an environmental perspective. The most important environmental areas are energy, water, waste, chemicals, purchasing and food. These are shared by all these businesses, however to varying degrees.

As in previous revisions of the criteria, the building is not included due to the length of its lifetime. Environmental criteria regarding the building, e.g. from an energy perspective, are set on the basis of the usage phase.

The criteria thus focus on operation of the business.

The RPS is *high* for the areas of energy for operation and maintenance (heating, cooling, hot water, etc.), consumables, carbon emissions, dishwashing chemicals and food. It is *medium* for energy consumption for kitchens, lighting and machinery, and *medium* for waste water and chemicals. However, the RPS is *low* for transport and certain chemicals (where steerability is low). For more information about RPS and environmental impact from hotels, restaurants and conference facilities, see chapter 4.

The criteria have had an impact on the market and we are seeing continued demand for Nordic Ecolabelled hotels and restaurants. Interest has also been expressed from the conference and meetings industry in being able to Nordic Ecolabel conferences.

Version and validity of the criteria

Criteria for ***hotels*** version 1.0 was adopted on 1 October 1999. The criteria were revised and version 2.0 was adopted on 3 October 2002. The most significant changes in this revision were that the requirements were clarified, the number of requirements cut, and the document generally made more user-friendly. Version 3.0 of the criteria was adopted in June 2007[1]. Certain adjustments were made, including the requirement on chlorine, and a number of editorial changes were made and the current version is version 3.4, which is valid until 31 October 2014.

In 2004 a pilot study was carried out for ***restaurants*** which resulted in completed criteria, version 1.0 in December 2006[2]. The criteria were extended in November 2009 and the current version is version 1.4, which is valid until 31 October 2014.

An RPS study for ***conferences*** was presented to SLM in November 2009 and it was decided to incorporate conferences in the upcoming development of the criteria, provided that ecolabelling also covers serving food or accommodation.

The Nordic Market

Information on the total capacity and the distribution of occupied rooms per target group for hotels in the Nordic market is shown below. Turnover information is also provided for restaurants in the Nordic market.

[1] Background Hotels, http://lli.sis.se/livelink/livelink?func=ll&objId=4852552&objAction=browse&viewType=1
[2] Background 08.02.2007, http://lli.sis.se/livelink/livelink?func=ll&objId=4853084&objAction=browse&viewType=1

Hotels

Table 1 Total capacity[3]

	Sweden		Denmark		Norway		Finland		Iceland[4]	
Total capacity (beds)	No. of beds	No. of establishments	No. of beds	No. of establishments	No. of beds	No. of establishments	No. of beds	No. of establishments	No. of beds	No. of establishments
Total hotels	224,444	1,985	111,488	504*	146,197	1,075	106,413 (hotels only) 137,165 (including cottages and hostels)	632 (hotels only) 1,061 (including cottages and hostels)	19,907	325
Cottage villages	41,528	271	Included above		79,064	168				39
Youth hostels	42,642	782		100	8,859				1,514	37

** only hotels with more than 40 beds are included in the statistics*

Table 2 Distribution of target group, occupied rooms

Distribution of target group, occupied rooms as %, data from 2010	Sweden	Denmark	Norway	Finland	Iceland
Number of nights	18,293,840	14,626,919	968,606	11,101,377 (hotels only)	1,309,691
Corporate market					
Business and professional travellers	51.1%	25.1% (3,664,327)	44.3% (429,200)	-	-
Conference guests	12.1%	11.6% (1,692,878)	10.5% (101,866)	-	-
Private market					
Group guests	8.1%	9.2% (1,340,244)		-	-
Leisure travellers	28.6%	53.0% (7,758,594)	45.2% (437,540)	-	-
Other		1.2% (170,876)			

Restaurants

Table 3 Total turnover restaurants

	Sweden (2010)[5]	Denmark (2009)	Norway (2009)[6]	Finland (2010)[7]	Iceland

[3] Figures refer to 2010

[4] http://hagstofan.is/?PageID=684&src=/temp/Dialog/varval.asp?ma=SAM01200%26ti=Frambo%F0+gistir%FDmis+%E1+h%F3telum+og+gistiheimilum+2000%2D2010%26path=../Database/ferdamal/GiHotGist/%26lang=3%26units=Fj%F6ldi

[5] http://www.scb.se/Pages/PressRelease____309494.aspx

[6] http://www.ssb.no/reiseliv/

[7] Restaurant data is from the sector organisation (http://mara.fi). Their figures (restaurants) include VAT (13%) which data from central statistics offices (hotels) does not. Also the categorisation of restaurants is different in Finland.

Total turnover	SEK 74 billion (excluding VAT)	DKK 28 billion[8]	NOK 0.36 billion	EUR 7.06 billion (including VAT at 13%)	-
Restaurants		43%			
Hotel restaurants	13.4%	13%[9]	72.0% (26,013.6)		-
Cafés	5.0%	16%[10]		EUR 0.67 billion (including fast food) including VAT	-
Fast food	13.1%	22%[11]			-
Lunch and local restaurants	43.0%	Included in other figures			-
Roadside restaurants	7.9%	Included in other figures			-
Entertainment	12.0%	6%[12]	5.3% (1,916.8)		-
Staff	5.7%	-	22.7% (8,192.4)	EUR 1.01 billion (including catering) including VAT	-

The impact of the Nordic Ecolabel in the market

The Nordic Ecolabel's criteria for hotels have had a major impact in the markets in all of the Nordic countries, with the greatest impact in the Swedish market. The number of licences has more than doubled in several years and the trend is set to continue. The evaluation from 2009 found a significant environmental benefit from the measures that the hotels have carried out to meet the criteria.

The table below shows the number of hotels and restaurants respectively in the different Nordic countries.

Table 4 No. of licences

Country	No.	
	Hotels (November 2011)	Restaurants (February 2011)
Denmark	27	0
Finland	29	8
Iceland	3	1
Norway	62	5
Sweden	291	36
The Nordic countries	412	50

A report by the Swedish Environmental Management Council estimated that in early 2010 the number of ecolabelled hotels and conference services would amount to a market share of 20%[13] in Sweden, calculated as number of hotel nights.

[8] www.horesta.dk/Oekonomi-Statistik/Tal-Statistik/Restaurantmarkedet
[9] Other restaurant businesses
[10] Cafes, inns, discos, etc.
[11] Pizzerias, grill bars, ice bars, etc.
[12] "Event catering"
[13] http://www.msr.se/Documents/rapporter/MSR_2008_13.pdf

This proportion is less than the 30% that is the Nordic Ecolabel's general target for the number of hotels that comply with the criteria. The number of licences is also considerably lower in the other Nordic countries, which further considerably reduces the Nordic Ecolabelled proportion of the total Nordic market.

We currently have no available data to evaluate whether the remaining hotels would be able to meet the criteria although they have not applied. However, on the basis of the difficulties and changes which have been necessary in conjunction with renewal of the licences from version 2 to version 3, the assessment is that many hotels are not capable of complying with our criteria.

The criteria for restaurants have only a few licences, here too with the emphasis in Sweden. In the Nordic countries there are only 50 Nordic Ecolabelled restaurants, but there are thousands of restaurant businesses in every country; in Sweden alone there were approximately 19,000 restaurants in 2009[14]. There are no Nordic Ecolabelled conferences as there have not been any criteria for these.

Other labels

There are some other labels for hotels, restaurants and conferences/events and these are described briefly below.

Official type 1 labels

EU Ecolabel is a type 1 ecolabel and has had criteria for hotels since 2003, it is now in version 2. There are also criteria for campsites (the Nordic Ecolabel's criteria do not cover camping).

The hotel criteria contain a total of 90 requirements, 29 of which are obligatory. There are no obligatory requirements on energy consumption, partly due to a lack of data. In general the EU Ecolabel can be seen as a weaker criteria document than the Nordic Ecolabel.

In 2011 there were 446 hotels and 84 campsites in Europe with an EU Ecolabel licence[15].

Management systems

A number of management systems with a bearing on environmental work and with a special focus on events have been drawn up or are in the process of being drawn up.

EMAS or **ISO 14001** are general environmental management systems that can also be implemented at hotels and youth hostels and they can also serve as guidance and documentation for the Nordic Ecolabel.

What is characteristic of environmental management systems is that no exact criteria levels are set but the business is obliged to analyse its operations and then constantly improve. Only a few hotels have chosen to use these certification systems.

Since 2007 there has also been the **British standard BS 8901**, "Sustainability Management Systems for Events". This is largely based on the principles of ISO 14001 and ISO 9001

[14] SHR's website:
http://sogetitest4.episerverhosting.com/stat.asp?lan=Riket&kommun=noKommun&verksamheter=Restaurang
[15] According to a search on http://www.eco-label.com and Tourist accommodation 09.09.2011.

(quality management systems), and businesses are able to certify their event processes[16] against this standard[17]. This standard is geared towards temporary activities/events and meeting types which largely have a bearing on our criteria that also apply to meeting businesses but also include the business' buildings.

Currently work is in progress to draw up a global standard for sustainability at events, **ISO 20121**. It will be possible to certify the organisation against the standard to show customers and the outside world that the business is working systematically to make the event more sustainable. ISO 20121 is planned to be ready during 2012[18].

Private/industry labels

Den Gröna Nyckeln (the Green Key) was developed in Denmark in 1994 and was developed by the industry itself through HORESTA, DANHOSTEL and Campingrådet.

After the EU's hotel criteria were adopted in 2003 the European hotel industry decided to expand Den Gröna Nyckeln to the rest of Europe under the name the Green Key. Since then the label has been established in over 20 countries.

Den Gröna Nyckeln has criteria in the same areas as the Nordic Ecolabel, grouped as follows: Environmental management, staff involvement, guest information, water, washing and cleaning, waste, energy, food and beverage, indoor environment, parks and parking areas, green activities, administration. In addition to imperative criteria with a limit, there are a number of voluntary requirements without limits.

As a starting point the same things are required in all countries but a few requirements can also be added formulated specifically for the country in question.

In the geographically closest countries there are the following number of licences[19] (2011):

- Sweden: 6 mountain stations, 30 youth hostels, 20 hotels/conference facilities, 8 campsites, 0 restaurants.
- In Denmark there are 9 campsites, 8 youth hostels, 94 hotels and a large number of sports facilities.

Green Globe is an international ecolabel for travel and tourism operations owned by Green Globe Ltd., a company based in the UK. From their website it is not immediately obvious what the criteria involve[20]. It is necessary to log in and become a member in order to see the criteria.

There are approximately 160 labelled businesses globally. There are approximately 60 businesses in Europe with the label (as at April 2011) the majority of which are in Germany. There are no licences in the Nordic countries.

[16] Michael Luehrs, Sustainability Services Manager, MCI group, orally 19.10.2011
[17] http://www.bsigroup.co.uk/en/Assessment-and-Certification-services/Management-systems/Standards-and-Schemes/BS-8901 (05.05.2011)
[18] http://www.iso.org/iso/pressrelease.htm?refid=Ref1281 (05.05.2011)
[19] According to a search at http://www.green-key.org/ and country.
[20] www.greenglobe.org

The Eco-Lighthouse Foundation (Miljøfyrtårnet) is a Nordic label geared towards businesses in the private and public sector with a special emphasis on small and medium-sized businesses.

The aim is for the businesses to gain help in producing environmental and climate measures that are concrete, measurable and profitable. Together with an approved consultant the business carries out an environmental analysis and then draws up an action plan to meet the industry criteria of the Eco-Lighthouse Foundation. When the business has met the industry criteria, they are approved by a public certifier and allocated a logo and a certificate. The label is valid for three years.

The hotel criteria are divided into obligatory criteria and specialist criteria where at least half of all specialist criteria must be introduced before approval. This system can be compared with the Nordic Ecolabel's division into obligatory and points score requirements. There are also requirements that the business is obliged to meet to comply with the law and regulations.

Many of the hotels that are awarded the Nordic Ecolabel have previously been Eco-Lighthouse Foundation businesses. In Norway the label is considered to be a first step on the way to becoming a greener business, while the Nordic Ecolabel is considered to be harder to achieve. The basis for this is that the requirements of the Eco-Lighthouse are more focused towards environmental management, by, for example, recording energy consumption and carrying out energy economy analyses. However, there is no limit value for energy.

Today there are different national and international web-based calculation systems adapted for hotels, which set out environmental statistics for energy consumption and key ratios, and which calculate **CO_2 emissions per hotel night**. In Sweden, Norway, Denmark and Finland there are different but similar calculation systems geared towards the hotel and meetings sector and it is likely that in the future we will see many more labelling systems of varying quality which in various ways evaluate and advocate limits on CO_2 emissions.

There is both a demand and scepticism from the Nordic Ecolabelled hotels about *whether* and *how* they are to communicate the CO_2 issue to customers, but there are licensees who choose to report CO_2 emissions. Several of these communicate actively on their websites how they work to make the environmental impact of their hotel operation carbon neutral and on selected meetings/events that they organise themselves.

VISITA, formerly SHR (the Swedish Hotel and Restaurant Association), has an environmental guide tool (miljöguiden) for its members which helps hotels with their environmental work and reporting their energy consumption. They can obtain environment statistics and comparative key figures.

HORESTA (the Danish sectoral organisation for hotels, restaurants and tourism) also sees a lasting green trend in the conference and meeting industry. The facilities must report the measures they are applying to limit their CO_2 emissions, in order to be selected for procurement.

In Finland the industry organisation for the hotel and restaurant sector, MARA, has encouraged the drawing up of voluntary energy saving agreements. Approximately 50 hotels and restaurants, including entire chains, have signed up (2011)[21].

Today there is a greater focus on and awareness of climate considerations and CO_2 emissions among companies when purchasing accommodation and conferences. CO_2 is required as a parameter in environmental reports and in procurement suppliers have to set out the measures that are being taken to minimise emissions.

Organic labelling of restaurants

KRAV is the Swedish organic label which only exists in Sweden. Today **restaurants and caterers can be KRAV-labelled**. The criteria are only set for ingredients, i.e. there are no requirements in other areas such as food preparation. Restaurants and caterers can choose between several different KRAV memberships but these are basically divided into two sections: those who have registered KRAV-approved food and those with KRAV-labelled menus.

KRAV's restaurant rules involve a grading system for the amount of KRAV-approved products the restaurants use. KRAV also approves the inclusion of MCS-labelled goods in these percentages. They also approve the inclusion of KRAV-certified goods that are not bought in (which the business has access to by other means) based on an estimated market price[22]. According to their website they have approximately 600 member restaurants/catering enterprises[23]. Around half of these are schools and preschools[24].

In Finland there is a voluntary programme **"Steps to Organic", Portaat luomuun,** whose purpose is to provide professional kitchens with guidance in increasing their use of organic products The programme is run by EkoCentria and funded by the Ministry of Agriculture and Forestry. Approximately 140 businesses are members of the programme.

3 About the criteria revision

Purpose of the criteria revision

Main aim

- To produce a revised criteria document for hotels and restaurants, including requirements that make it possible to award the Nordic Ecolabel to conference premises that serve food and/or provide accommodation. The criteria must be harmonised with each other and include an "application key" that describes which criteria apply to which facilities and how the different businesses within the enterprise are to be weighted. The revised criteria are to have considerably fewer but clearly formulated requirements with the documentation required clearly set out.
- More stringent energy limit value requirements. Also more stringent climate impact criteria, with an emphasis on the areas where the business has good steerability. In the

[21] http://www.mara.fi/?file=582 (20.10.2011)
[22] http://www.krav.se/KravsRegler/9/2/ (05.05.2011)
[23] http://www.krav.se/For-foretag/Anslutna-foretag/Restauranger-och-Storhushall/ (05.05.2011)
[24] http://www.krav.se/Om-KRAV/Helenas-svar/Dates/2011/4/Finns-det-nagon-sida-pa-natet-med-ekologiska-restauranger/ (05.05.2011)

evaluation the aim is formulated as "Focus on energy with more stringent limit value requirements and criteria that reward low CO_2 emissions – which are not technology steering and with a clearer designation of what must be included and what can be discounted".

Sub-objectives

- Increase the visibility of the environmental benefit given by the criteria. This means revising the requirements for disposable items (in the dining room/rooms/conference suite) and other issues that the guests can see as "environmentally disruptive". The Nordic Ecolabel's criteria regarding energy and climate impact must be sufficiently clear as to meet the information requirement on climate issues (the licensee feels that there is no need for additional climate labelling).
- Revise the criteria for food, including requirements on organic, locally produced and Fairtrade.
- Revise the chemicals requirements to make them clearer, easier to work with and comprehensible to licence applicants.
- Revise the laundry criteria.
- Revise the transport criteria.
- Climate zones in the area near the Nordic region must be incorporated into the criteria to enable hotels from these regions to apply for a licence.
- Otherwise revise the requirements specifically pointed out in the evaluations.
- Draw up a clear, RPS-based background document.

Message

Nordic Ecolabelled hotels, conferences and restaurants have stringent environmental requirements that lead to major environmental benefit.

About this criteria review/revision

The project has been conducted as an internal project within Nordic Ecolabelling. ÅF-Industry has provided consultancy services for the development of the energy tool (which is used to establish energy limit values and points score requirements for energy and carbon dioxide and to show the extent to which these limits are complied with). Konsultfirma Marie Fahlin has also been used for other consultancy work.

In conjunction with the work of developing the new criteria structure, the energy tool and the requirements and requirement levels, we have maintained a dialogue with several licensees, particularly in the context of testing requirement levels and points levels.

During the review we plan to conduct a close dialogue with a number of pilot operations.

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4 RPS

This chapter justifies Nordic Ecolabelling of hotels, restaurants and conference facilities on the basis of a life cycle perspective and the largest areas for which Nordic Ecolabelling sets criteria on the basis of an assessment of relevance, potential and steerability.

Hotels, restaurants and conferences are similar operations from an environmental perspective. The most important environmental areas are energy, water, waste, chemicals, purchasing and food. These are shared by all these businesses, however to varying degrees. It is also these areas which are named in the studies and programmes scanned to update environmental impact from the accommodation, restaurant and tourism industry (here are references to some of them) [25] [26] [27] [28] [29].

Regarding conferences, in late 2009 Nordic Ecolabelling carried out a minor study (light-RPS)[30]. It concludes that there are environmental benefits to be gained in all the areas for which the ecolabel sets criteria in its hotel/restaurant criteria today[31]. The conclusions of the light RPS are that the greatest potential for environmental benefits can be obtained through savings in the property's use of energy, water and chemicals. In addition to this, environmental benefits can also be obtained by using green conference technology. Opportunities to set requirements for transport are, however, limited.

As many aspects of conference businesses are run by external partners, it is particularly important that requirements are also made of subcontractors to these businesses (catering, restaurants, cleaning, laundry, etc.). This does not only apply to conferences. A new focus in version 4 of the criteria is therefore to ensure that contracts with subcontractors are in place.

Limitations – what isn't included?

As in previous revisions of the criteria, environmental impact from the building is not included due to the length of its lifetime. In other words, no environmental evaluation of the material of the windows and similar in the building has been carried out. Environmental criteria regarding the building, e.g. from an energy perspective, are set on the basis of the usage phase. The criteria thus focus on operation of the business.. This is in accordance with the references in this chapter.

LCA

Hotel, restaurant and conference operations are central services in the tourism industry. Tourism has been steadily growing in recent decades and today is one of the most important industries in the global economy. This is reflected in a rising need to assess the environmental impact of the tourist industry. So far only a small number of life cycle analyses (LCA) have been carried out for hotels/restaurants. The reason why so few LCAs have been carried out is

[25] Business Hotel Utility Consumption and Saving Opportunities, Paul Bannister BSc (Hons) PhD, From the Proceedings of the World Conference SB08 - ISBN 978-0-646-50372-1, 21-25th September 2008 in Melbourne, Australia
[26] International Tourism Partnership (ITP), former International Hotels and Environment Initiative (IHEI) http://www.tourismpartnership.org 2011
[27] The Green Key Kriterier og ansøgningsskema Hoteller, Danhostels, Konference- og Feriecentre Gældende fra januar 2012; http://www.green-key.dk/
[28] Sustainable Business Associates, Switzerland, Best Environmental Practices for the Hotel Industry, 2011
[29] The Green Key Kriterier og ansøgningsskema Restauranter, Gældende fra januar 2010; http://www.green-key.dk/
[30] For an explanation of the concepts Relevance, Potential and Steerability, see Nordic Ecolabelling's Environmental Philosophy.
[31] Light-RPS for conferences, Internal report to SLM 06.11.09

probably the complexity of tourist systems, the lack of specific LCA databases for the tourism sector and the fact that the tourism industry only takes into account environmental impact from the areas normally included in LCA methodology to a limited extent.

During this revision project, an RPS analysis has been carried out, as well as an introductory MECO analysis. MECO analysis is a structured way of carrying out a simplified LCA. MECO stands for Material, Energy, Chemicals and Other. The MECO analysis was carried out such that accommodation, restaurants and conferences were examined simultaneously and divided into 4 sub-groups:

- Operation of the business, general part
- Consumables
- Durable goods
- Food

In the MECO analysis each parameter is then analysed separately and evaluated in comparison with the others. As the number of parameters quickly grew, the evaluation was only carried out on the basis of the divisions above and on the basis of previous experiences. The following tendencies could be confirmed:

Operation of the business – Highest relevance. Operation has a continuous impact through energy consumption, water, waste and use of chemicals. It is reasonable that the majority of the environmental requirements concern operation.

Consumables – High relevance for the products used to a major extent, e.g. tissue. The products' production phase and waste phase are significant, as is the usage phase.

Durable goods – Not equally high relevance as the products are used for a longer period. More important parameters are the product's energy consumption and impact on the environment during the usage phase.

Food – High relevance because consumption is considerable in the majority of businesses. For hotels that only serve breakfast, food is of lower relevance (and without breakfast being served, it will naturally be zero). Reducing the environmental impact of food is important to the environmental impact of the entire business, particularly in restaurants.

These conclusions match the conclusions of the RPS analysis (see Table 5 below for a summary of the RPS analysis). More detailed information on the RPS is provided in the individual sections that follow.

Table 5 Summary of the RPS analysis

Accommodation, restaurants and conference facilities		
Overall priority	**Area**	**Comments**
High	**Energy** for operation and maintenance. High R, medium P, medium S	Operation and maintenance includes heating, cooling, hot water, air conditioning, etc. High relevance but difficult steerability as another party often owns the building.
	Consumables High R, medium P, medium S	E.g. tissue paper (toilet paper and kitchen paper). Large quantities give high R, scope for influence if ecolabelled options exist.
	Carbon dioxide High R, medium P, medium S	Follows the reasoning for energy: high relevance but difficult steerability as another party often owns the building. Emissions of carbon dioxide can be reduced through energy savings and to a certain extent through choice of energy sources.
	Dishwashing chemicals High R, medium P, medium S	Dishwashing chemicals account for the single greatest chemical consumption in hotels with restaurants. The impact can be reduced through ecolabelled alternatives and correct dosing.
	Food High (to medium) R and P, medium to low S	High priority if restaurant activity exists, medium if only breakfast is served. Environmental impact from growing or rearing, distribution, etc. Vegetarian food makes less of an impact than meat and fish. Organic products reduce environmental impact.
Medium	**Energy** for kitchens, lighting, machinery and appliances. Medium R, medium to low P and S	Energy consumption from the kitchen (if food is served) is considerable, as is consumption from lighting, machinery and appliances such as washing machines and dishwashers. Possible to set requirements for energy efficient light sources and appliances, if alternatives are available.
	Waste Medium R and P, medium to low S	Significant quantities of waste; environmental impact can be reduced by reducing amounts of waste (with return packaging depending on suppliers' systems) and by sorting and then recycling waste. Opportunities for recycling depend to a large extent on the municipality in which the business is run.
	Electronics Medium R and P, low S	Substances of a complex environmental nature are used in the production of electronic goods, and these goods also contain many substances of very high concern. The scope to reduce environmental impact is quite low, but it is possible to use ecolabelled alternatives and to sort waste correctly at source.
	Water Medium R, medium P and S	Water consumption for laundry and dishwashing, plus shower and toilet use by guests. Higher relevance with regard to hot water. The relevance is also higher in areas with less access to water.
	Chemicals for washing and cleaning and from overnight guests. Medium R, medium P and medium to low S	For example detergent, cleaning chemicals, shampoo and soap. Come from many different activities. The impact can be reduced through ecolabelled chemicals and laundries and correct dosing. Guests' usage is more difficult to affect.
Low		
	Transport Transport of goods and guests to and from the business. Medium R, low P and low S	A business has very little control over goods transport and the transport used by guests. However, larger businesses and chains can exert some influence over goods transport.
	Chemicals other Low R and P, medium to low S	For example, rinsing aids, drying aids, descaling products, WC cleaners, polishes. Low steerability, since ecolabelled alternatives are not available in all categories.
	Fittings and furniture Medium to low R, low P and S	The useful life of these items is relatively long and the environmental impact from the production phase and waste phase is not particularly high. Ecolabelled alternatives reduce environmental impact.

Some of the facts in this section come from drawing parallels with an LCA of the activities of one family[32] and analyses of restaurants' environmental impact[33].

[32] "Danske husholdningers miljøbelastning" Report from the Danish Environmental Protection Agency No. 13, 2002, Copenhagen 2002; and the Swedish Environmental Protection Agency, Biff och Bil? 1997:27 (concentrates on recommendations for action)
[33] TTS et al 2001, Seppänen et al 2006

Energy use

Operation and maintenance
Energy for operation and maintenance, for example heating, cooling, lighting, ventilation and hot water, accounts for a great deal of energy consumption in all types of business. The importance of saving energy is mentioned in all the reference works examined[34]. The relevance is very high, and many studies highlight the good impact of various measures.

Hotels generally consume more energy per guest than simpler lodgings, since hotels have more energy intensive spaces such as restaurants, bars and pools, plus the rooms are often large. Nordic Ecolabelling's own experience also shows that energy consumption varies.

An Australian survey[35] of 15 business hotels in Australia in 2008 looked at their environmental impact, primarily in terms of energy and water. The survey showed that the greatest energy consumption came from heating, ventilation and air conditioning (50%), followed by lighting (14%), hot water (13%), kitchens and food preparation (11%) and laundry (5%). An average of 22% electricity and 7% gas could be saved by focusing on heating, ventilation and air conditioning, hot water, the pool and laundry. All measures paid for themselves within no more than three years. The considerable variation in energy consumption and the scope to reduce energy consumption show that it is relevant to set requirements regarding energy, and that there is potential for businesses to improve.

Energy optimisation is probably the most important environmental effect of giving a hotel a Nordic Ecolabel licence. In contrast to other systems, Nordic Ecolabelling's limit values mean that the building may need to be optimised for energy consumption (and refurbished) in order to qualify for the Nordic Ecolabel.

Kitchens, lighting, machinery and appliances
Energy use in the kitchen can be roughly divided into three main functions:
1) refrigeration
2) preparation
3) dishwashing

Distribution between these different areas varies depending on the type of restaurant business.

According to a US survey, energy use in restaurants breaks down as follows: 35% comes from preparing food, followed by heating and ventilation (28%), dishwashing (18%), lighting (13%) and cooling (6%)[36]. According to an older Finnish survey, in a restaurant food preparation takes up the most energy (49%), followed by refrigeration (37%) and dishwashing (14%). In a **school kitchen** that heats up food, refrigeration takes the most energy (56%), followed by dishwashing (29%) and preparation (15%). In a **hospital kitchen** dishwashing consumes the most energy (47%). Refrigeration accounted for a larger proportion in **small kitchens** than in

[34] International Tourism Partnership (ITP), former International Hotels and Environment Initiative (IHEI) http://www.tourismpartnership.org 2011
[35] Business Hotel Utility Consumption and Saving Opportunities, Paul Bannister BSc (Hons) PhD, From the Proceedings of the World Conference SB08 - ISBN 978-0-646-50372-1, 21-25th September 2008 in Melbourne, Australia
[36] Baldwin C, Wilberforce N & Kapur A (2010) Restaurant and food service life cycle assessment and development of a sustainability standard, The International Journal of Life Cycle Assessment, Vol 16 No. 1 40-49

larger kitchens.[37] Training staff to use kitchen appliances correctly can reduce kitchen energy consumption by 10-60%.

This is a relevant area to work on, and total energy consumption can be reduced considerably by optimising energy use in the kitchen. However, the total energy consumption depends to a great extent on the type of restaurant; is it an à la carte restaurant or a lunch canteen with one heated dish on the menu?

Energy consumption from lighting can be reduced through planning and by switching to low energy lighting sources.

It is more difficult to save energy from the machinery and appliances (e.g. dishwashers and washing machines) used. Planning (dishwashing and laundering with full machines, for example) and switching to energy efficient appliances can reduce consumption.

Greenhouse gases
A highly topical environmental problem is emissions of greenhouse gases. Many of the measures in society are aimed at cutting emissions of greenhouse gases, particularly carbon dioxide. A major reason for saving energy is to reduce carbon emissions. Just as with energy, it can be difficult for businesses to control reductions, since many businesses do not own the building. Carbon emissions are governed by the points score requirement for carbon dioxide.

Water
There are many different reasons why it is important to save water, even if water is not usually in short supply in the Nordic countries. After use, water is normally treated in a traditional water treatment plant – which also requires energy and chemicals. Saving hot water is extra important as energy has also been used to heat up the water (apart possibly from Iceland, or other places with access to geothermal heat).

There are many measures that cut consumption, for example, water-saving showers and installing energy-saving taps and dishwashers. The Nordic Ecolabel sets a number of requirements for measures, but the most important is a limit value for water.

Chemicals
Reducing the environmental impact of chemicals has high relevance, particularly the type of chemicals used in large amounts, dishwashing chemicals, for example. Using ecolabelled alternatives, not using chemicals with problematic content and using the right dosage reduces the environmental impact. Some basic requirements are also set for the non-ecolabelled chemicals used in the business.

Waste
Hotels, restaurants and conferences produce large amounts of waste. The restaurant is a particularly major source of waste. It produces large amounts of packaging as well as organic waste, glass and metal. The more waste that is sorted and recycled, the better it is for the environment. It is even better if the waste does not arise in the first place or is reduced through using reusable materials.

[37] TTS, 1998

Purchasing

The purchases the business makes are important for the business' environmental impact. The environmental impacts may vary considerably depending on the choice of goods. Requiring ecolabelled alternatives can reduce the environmental impact of purchasing.

The environmental impact of durable goods (such as furniture, fixtures and fittings, etc.) is most important during the usage phase, seen from a life cycle perspective. Generally, therefore, the environmental impacts during the production and waste phases are of lower priority than impact during the usage phase. Exceptions to this are electronics and, to a certain extent, furniture, where the environmental impact of certain chemicals and raw materials recycling can be so large that it is relevant to also follow up the environmental impact of the production and waste phase.

It is important to monitor the use of consumables that are used to a large extent with environmental requirements that cover the product's entire life cycle and this can be achieved by choosing ecolabelled products wherever possible.

Guest rooms

The environmental impact from guest rooms comes from the use of disposable items, and TVs and minibars. The hotel has an opportunity to influence this by focusing on reduced use of disposable articles and by purchasing TVs and minibars with low energy, or by not having a minibar in guest rooms at all. Use of ecolabelled furniture, textiles and fittings also reduces environmental impact.

Food and drink

Food has a major environmental impact. Many measures can also be carried out to reduce environmental impact. There are also environmental impacts in the kitchen during cooking. Furthermore, large amounts of waste often arise in conjunction with restaurant operations. Here the Nordic Ecolabel works to reduce the use of disposable items.

A fifth of all the food consumed in Sweden is served in public sector catering. This is 1.2 billion meals a year[38]. In Finland almost 700 million portions are cooked in just over 20,000 catering kitchens. Energy consumption from this cooking amounts to 600 GWh per year[39].

An LCA analysis of restaurants that has been used as a basis for the Green Seal's environmental labelling criteria in the USA[40] [41] showed that food had the highest environmental impact in a restaurant. Food production uses energy, and artificial fertiliser and herbicides are often used. In Finland, about 50% of emissions of nutrients and 9% of emissions of greenhouse gases come from agriculture[42]. Energy consumption, for example, from fridges and in food preparation had a comparatively insignificant impact on the restaurant's total life cycle impact.

One of the most important measures for reducing the environmental impact of food is reducing the amount of waste from restaurants. The largest amount of waste arises due to the fact that it is hard to predict the number of bookings. In gourmet restaurants it can be difficult

[38] Gustavsson & Kretschmann 2001
[39] TTS et al 2001
[40] Baldwin C, Wilberforce N, Kapur A (2010) Restaurant and food service life cycle assessment and development of a sustainability standard. The International Journal of Life Cycle Assessment, Vol 16 No. 1 40-49
[41] www.greenseal.org
[42] Seppänen et al 2006

to maintain a large menu without a certain amount of waste as a large number of different ingredients are required. Storing ingredients can also be a problem. Buffets may result in a particularly large amount of waste as the food may only be laid out for a limited period for hygiene reasons and as diners tend to take larger portions than they manage to eat[43].

Table 6 Summary of information on amount of waste in restaurants and catering kitchens.

Type of kitchen and type of food	Amount of waste	Comments	Source
Total amount of food purchased	15 – 22%	Weight, including unavoidable waste such as peelings.	Karlsson Rebecka (2002): "Svinn in storhushåll", Stockholm University.
Plate waste	9 – 11%	Weight	Same as above
Plate waste	0.01 – 0.5 kg per portion	Weight	Nordic Council of Ministers (2012)[44]
School kitchens, Plate waste	0 – 18%	Weight	Carlsson-Kanyama (2003) on a 2002 study by Tyresö municipality
Catering, e.g. County Council, total waste	Reduced from 47% to 20% after measures to combat waste	Weight, including unavoidable waste such as peelings, bones.	Carlsson-Kanyama (2003) on a 1983 study
Hospital catering	Approximately 1/3 of hot meals and 1/6 of desserts	Weight	Kujala (2009) "Biojäte Tampereen yliopistollisen sairaalan keskussairaalan potilasruokailussa"
Different types: Restaurant with 1-3 sittings, catering, fast food	3-10% waste before the food reaches the dining room. The diners leave on average 17% of their portion uneaten	Weight	Baldwin, Wilberforce & Kapur (2010)

Choice of ingredients also considerably reduces the environmental impact of restaurants. Vegetarian food takes far less energy to produce than meat. It takes approximately ten times the energy to produce one kg of protein from meat than to produce the same amount of energy from vegetables such as beans.[45]

By focusing on the use of organic and vegetarian food, and on food, particularly fish and shellfish, which is threatened with extinction or represents an extremely high burden on the environment from an international perspective, the environmental impact of serving food can be reduced. See the description in the chapter on "Food".

Transport

Transport is a difficult area to work on from the point of view of ecolabelling. The businesses that are Nordic ecolabelled have, in principle, no steerability when it comes to the way in which guests travel to and from the hotel, conference or restaurant. Large businesses may have a certain impact on their goods transport.

43 Swedish Environmental Protection Agency (2008) Svinn i livsmedelskedjan, Möjligheter till minskade mängder, SNV Rapport 5885

44 Marthinsen et al. 2012. Prevention of food waste in restaurants, hotels, canteens and catering. TemaNord 2012:537. Nordic Council of Ministers.

45 Nordic Ecolabelling (2006) Nordic Ecolabelled Restaurants, Background to Version 1

Businesses are able to influence the environmental impact of their own vehicles although they tend not to own very many vehicles. This is an area which has medium relevance but low potential and very little steerability. Nevertheless, businesses can reduce the environmental impact from transport by focusing on vehicles with low fuel consumption, eco-driving and by using Nordic Ecolabelled fuel.

5 Justification of the requirements

"What can carry the Nordic Ecolabel"

The criteria document states that hotels, youth hostels, restaurants and conference facilities in various combinations (see definitions below) can be awarded the Nordic Ecolabel.

It has been important to find a clear way of limiting what is to be included in the licence. The main focus has been on the perception of guests. If there are several businesses in the same building, all of them must meet the relevant requirements set by the Nordic Ecolabel i.e. *if several of these different sub-businesses are included within the same business and marketed as a unit, they must all be included in the licence.*

In this criteria document, as in previous such documents, we have set geographical limits on where applicant businesses are to be located. What has been added is that (in addition to the Nordic countries) businesses in the Baltic states can now also be awarded the Nordic Ecolabel (the obligatory energy limit value requirement necessitates a geographical restriction within these climate zones).

Accommodation/restaurants/conferences on cruise ships/ferries/trains cannot be awarded the Nordic Ecolabel within the framework of these criteria as we do not consider that we have sufficient documentation in order to assess how the criteria operate in these cases, and as it would be extremely complicated to set limits on what is to be included and what is not to be included in terms of energy consumption in these types of businesses.

Hotels and youth hostels:

Establishments that offer accommodation can be Nordic Ecolabelled. In general, this means hotels and youth hostels.
If the hotel:

1. has its own restaurant, this must be covered by the licence.
2. has its own conference facility, this must be covered by the licence.
3. has both its own restaurant and its own conference facility, these must be covered by the licence.
4. does not serve breakfast, it must meet a more stringent energy limit value.
5. has an external breakfast supplier which serves breakfast in the hotel's own premises, these must meet the requirements regarding serving food and drink, see the section "Suppliers O3" below.

Restaurants:

The term restaurant includes all businesses that serve prepared food that is to be consumed on the premises. This includes restaurants, institutional kitchens, canteens, street kitchens and cafés, as well as canteens in schools, hospitals and similar. Catering operations and take away restaurants can also be awarded the Nordic Ecolabel. The primary function of the operation must be to prepare and serve food.

If the restaurant has:

1. conference facilities, these must be covered by the licence.

Conference facilities:

The ability to Nordic Ecolabel a conference is new to this version of the criteria. It is only possible to apply for a Nordic Ecolabelled conference in combination with a restaurant, which excludes separate fairs, exhibition premises, theatres, concert premises and similar.

Conference facilities can be awarded the Nordic Ecolabel if the licence includes a Nordic Ecolabelled restaurant (or catering restaurant), either run by the business itself or through agreements with sub-contractors. The motivation for this is firstly the major environmental impact that food has in conjunction with running conferences. Secondly, as the requirements are set out today, labelling a conference on its own would mean that the requirements only covered general operation, which Nordic Ecolabelling does not consider to be relevant in the situation as it stands today.

If the conference does not have its own accommodation but instead recommends accommodation to its guests, the accommodation must be Nordic Ecolabelled. For further information on what applies when hiring an external supplier of food and/or referring customers to Nordic Ecolabelled accommodation, see the heading "*Suppliers*".

A conference facility often has large open spaces and is designed to be able to receive large numbers of guests. Important spaces in a conference facility are the lobby, auditoriums, lecture theatres, meeting rooms and exhibition spaces. There are also usually restaurant spaces, group rooms, areas for the press and changing rooms, as well as registration and information areas. The technical equipment plays an important role, including computers and other audiovisual equipment.

In this revision, Nordic Ecolabelling has evaluated whether special requirements should be set for conferences, and if so which. During this process it has become evident that conferences should not be included under a separate heading but should be covered by the general requirements that apply to all types of business. The requirements previously found under "extra requirements for conferences" in the criteria for hotels and youth hostels version 3.2 have therefore been included at relevant points in the new criteria document.

Hotels, restaurants and conference facilities often also include activities such as stage performances, exhibitions, nightclubs and similar which affect the establishment's ability to gain Nordic Ecolabel licence approval. The energy tool does not specifically take these activities into account in relation to operation and the number of guests.

In certain circumstances, Nordic Ecolabelling may grant permission for a hotel, restaurant or conference facility to ignore a particular activity. In order to do this, it must be possible to separately account for the energy consumption of that activity.

Stage performances, exhibitions and nightclubs

Stage performances are often extremely energy intensive. There is a need for stage lighting, sound equipment and other technology that can result in high energy consumption. It is the customers of the venue who rent it for various events and it is they who order what is to be arranged, e.g. on stage. This may thus have the result that the electricity consumption for certain events is so high that over the course of the year the venue is unable to meet the Nordic Ecolabel's limit value for energy and thus is not eligible for a licence. When an

operation hosts major events as above, this can be seen as energy consumption that is separate from the energy required to run the venue in general. Electricity consumption for events (such as stage lighting, sound systems and other technology that can result in high energy consumption, e.g. not heating, ventilation or permanent lighting) can thus be discounted from other operating electricity as there is low steerability. In order for it not to be counted, the electricity use for the event must be metered separately.

Exhibition operations can be seen as similar to stage performances and deductions from energy consumption for exhibition events can follow the same principles.

Nightclubs attached to a restaurant and hotel may also have major stage activities with music events, etc. According to the same model for theatre performances, high electricity consumption can be discounted from other operating electricity provided that the business has separate metering of consumption for its events.

Baths and spas

Where baths and spas are run, the starting point is that their consumption of energy and water must be included in the limit value requirements. Despite this, it is not permitted to market the business as a Nordic Ecolabelled spa as our criteria do not cover the different functions traditionally covered by spa operations, such as various treatments, health cures, gyms, water slides, etc. It may give consumers a misleading picture if the business markets its spa as being ecolabelled.

Merging the criteria documents

Attention should be drawn to the fact that this revision merges two different criteria documents (Nordic Ecolabelling of hotels and youth hostels version 3.3 and Nordic Ecolabelling of restaurants version 1.3) to create a joint criteria document which also covers the Nordic Ecolabelling of conference facilities. In this process certain requirements from the previous restaurant criteria have been transferred to hotel and conference businesses and certain requirements from the former hotel criteria have been transferred to restaurant and conference businesses. This is partly because we are seeking a set of basic requirements that apply to everyone and partly because we will now be requiring that businesses owned or marketed jointly are licensed as a single unit. This transfer of requirements, for example, means tightening up the requirements for those hotels and restaurants which previously had less stringent requirements for their restaurant business. Correspondingly, this means that the requirements are more stringent for restaurants, which did not previously have any limit value requirements on energy, water or waste.

O1 General description of the business

Under this requirement, a number of details need to be provided, including pure identity information, and information that describes to the case officer what business is conducted and provides data for calculations later in the document. These details differ somewhat, depending on the type of business that applies, but are obligatory.

All the limit values are based on calculations "per guest", making this a core concept. The different concepts of the guest are described below:

- A **hotel guest** is a guest who stays at the hotel overnight.
- A **restaurant guest** is a guest who eats or drinks in the restaurant, or the bar, which includes breakfast, lunch and dinner guests. The number of breakfast guests is assumed to be the same as the number of hotel guests. It also includes bar guests, concert guest

and nightclub guests, etc. who visit the restaurant. For hotels that also have their own restaurant, this means that guests who use the restaurant are to be reported separately. The number of guests per year may be estimated based on the number of guests counted for at least two weeks during a representative period.

- A **conference guest** is a guest who takes part in activities on the premises of the conference facility (which may also include stage performances). If a conference guest stays overnight within the business, they will be counted twice in the total guest numbers for the business, once as a conference guest and once as a hotel guest.
- A **pool and spa guest** is, in this context, the same as a hotel guest. i.e. a guest who stays at the hotel overnight. If the hotel does not have any external pool/spa guests, pool/spa guests do not need to be counted separately. Pool/spa guests are counted in the limit value for water, but should not be entered in the energy model, as this calculates energy consumption per m^2 of pool area.
- An **external spa guest** is a guest who only uses the pool and spa facilities and does not spend the night at the hotel. They are counted in the limit value for water, but should not be entered in the energy model, as this calculates energy consumption per m^2 of pool area.
- The guest number is to be stated to the nearest 1,000 if the total guest number is 100,000 or higher. If the guest number is lower than 100,000, it is to be stated to the nearest 100. As documentation, we can accept summaries based on overviews from data systems or summaries based on total sales and average spend.

O2 Conference facilities: External suppliers of restaurant services and O3 Conference facilities: Referring guests to accommodation

As stated above, conferences can be Nordic Ecolabelled provided that they have a Nordic Ecolabelled restaurant, either under their own operation or run under contract by a Nordic Ecolabelled supplier. If a conference facility does not have its own accommodation but refers customers to/recommends accommodation, the facility must refer customers to a Nordic Ecolabelled supplier of this service. This requirement applies to conference facilities that do not have their own restaurant or hotel business.

The following usually applies to conference facilities that do not have their own hotels or restaurants. A day conference does not normally focus on arranging conferences that include overnight accommodation. According to the conference premises themselves, such major conferences, congresses or other types of events spanning several days tend to be arranged by a third party, an "events organiser" who tailors the event to the customer's need for conference facilities, accommodation, meals and other elements such as entertainment and similar. In these cases the conference facility has little or no influence and it can be stated that steerability for conference facilities is low in terms of choice of accommodation. However, it is only in exceptional cases that day conferences are organised without any form of food being served. The choice of an external restaurant supplier is often regulated in a partnership agreement.

Some conditions that apply in order for different types of conferences without their own accommodation or restaurant to be awarded the Nordic Ecolabel are set out below:

1. Conferences adjoining an existing hotel which are not under joint ownership, but which are marketed as a single unit. The hotel in turn has a restaurant. Each of the individual businesses must be included in the application for Nordic Ecolabelling for the conference to be eligible to apply.

2. The conference has a restaurant in the same building, which is not under joint ownership but which is marketed as a single unit. The restaurant must be Nordic Ecolabelled.
3. The conference has neither a hotel nor restaurant in the same building, only meeting rooms. We are unable to control the choice of accommodation, if there is a need for accommodation, but they must primarily refer guests to a Nordic Ecolabelled hotel if one exists within a reasonable distance. The conference business must have a Nordic Ecolabelled supplier for the food that is served.
4. The conference facility has neither a hotel nor a restaurant in the same building, only meeting rooms, but uses a nearby restaurant to which they refer their guests, or subcontracts caterers. The restaurant must then also be Nordic Ecolabelled for the conference to be able to apply for a licence. Many conference facilities have a contract in place for this type of cooperation and to establish credibility it should be required that a partnership agreement is drawn up.

Requirement O2 is worded such that it is essential for a conference facility without its own restaurant to enter into a contract with a supplier which in turn must be Nordic Ecolabelled. This means that both businesses must meet the Nordic Ecolabel's requirements for the respective business and that they must have a contract between them that applies throughout the period of validity of the version of the criteria. Note that if the contract is terminated and the partnership dissolved, the consequence may be that the conference facility loses its licence. For this reason, a conference facility must incorporate a notice period in its contract with the restaurant which gives the conference facility time to enter into a new contract with a new partner such that the licence remains valid. A partnership agreement in conjunction with Nordic Ecolabelling should have the same period of validity as the period of validity of the criteria document. If the conference facility has a cooperation agreement with several restaurants, all of them must be Nordic Ecolabelled.

In Sweden it is common in the industry[46] for contracts to be entered into with restaurateurs in existing buildings. The contract usually runs for 2-3 years. The notice period is usually 6-12 months.

It is also important that the contract states that the restaurant must provide a fixed proportion of the conference's need for food to be served to their conference guests. The Nordic Ecolabel requires that at least 95% of all food served to conference guests (based on turnover or number of guests) is to be provided by a Nordic Ecolabelled restaurant. In some cases there is a need for special arrangements for flexibility in the event of unforeseen occurrences where conferences need to bring in additional resources and procure additional suppliers. This justifies not setting a requirement for 5% of the requirement for food served to conference guests.

Requirement O3 states that if the conference facility does not have its own accommodation, it must refer its guests to Nordic Ecolabelled accommodation. The documentation specified for this requirement is a list of the accommodation service(s) to which guests are referred and material showing how guests are referred.

[46] SHR, http://www.shr.se/Branschfragor/branschfragor1/Hyresfragor/ and Interview with Christian Giertta, Svenska Möten.

O4 Hotels with external suppliers of breakfast in the hotel premises
For hotels that *offer their guests breakfast in their own premises but contract an external supplier to provide it*, the supplier of breakfast must fulfil all the requirements as if the breakfast were served by the hotel itself, i.e. all the requirements in the section "Serving food and drink".

Hotels that do not serve breakfast
If the hotel *does not serve breakfast* but instead refers the customer to an external breakfast provider off the hotel premises, this is not included in the Nordic Ecolabel licence, since the environmental benefit of setting requirements for external breakfast is minimal and is compensated for by the fact that hotels that do not serve breakfast have to meet the stricter limit value of 1.7 for energy.

5.1.1 Limit values in general

It is obligatory for all businesses to meet the limit value for energy plus one of the two optional limit values for water and for waste.

Hotels:
In the previous version of the criteria for hotels, it was obligatory to meet the energy limit value plus another limit value relating either to water, chemicals or waste. Under these criteria, hotels were divided into different classes (A, B or C) depending on the hotel's occupancy, whether the hotel had high restaurant sales and whether the hotel had a pool.
According to its classification, the hotel would then be given a specific limit value for each area (energy, water, waste and chemicals).

For this revision, we have decided the following:

- To retain the **obligatory limit value** for **energy**, but this is calculated specifically for each business. In order to calculate and document this requirement, the applicant must use the Nordic Ecolabelling energy tool, read more in sections 5.1.2 "Limit values for energy" and 5.1.3 "Energy tool".
- The businesses must still meet one other limit value in addition to energy. They can choose between waste and water.
- The **limit values** for **water** and **waste** remain (cf. the previous version of the hotel criteria), but these are also calculated in a different way than before, see information on and the justification for this in sections 5.1.4 "Limit values for water" and 5.1.5 "Limit values for waste".
- We no longer set a limit value requirement for chemicals – for more information on and justification of this, see 5.1.21 "Summary of changes compared with previous versions of the criteria".

For all the limit values, in this version of the criteria it is possible to score points for performing better than the limit value. The better you are compared with the limit value, the higher the points.

Restaurants:
The restaurants must meet the same limit value requirement as described above (energy plus one optional requirement of either waste or water) for hotels, which can be seen as a major tightening of the requirement level, as there was previously no limit value requirement for restaurants. There was only a requirement to measure the electricity consumption of the

activity. Note that restaurants have their own factors when it comes to water and waste, see below, and that account is also taken of this type of activity in the energy tool.

Conference facilities:
Conference facilities must also meet the same limit values, as these are included in the obligatory section that applies to all types of business. Note that, as with restaurants, conference facilities have their own factors when it comes to water and waste, and specific account is taken in the energy tool.

5.1.2 Limit values for energy

O5 Limit values for energy, P1 Energy

As in the previous criteria, an obligatory **limit value for energy consumption** is retained for hotels, as this is one of the areas with the greatest environmental impact. Restaurants face a major tightening of the requirement, since the energy limit value is now also obligatory for them. Conference facilities are also covered by this obligatory energy limit value requirement. The ambition behind the new requirement level is to weed out the worst hotels in terms of energy (an estimated 10% to 20% percent of establishments) that currently have a license today and that do not intend to make improvements in order to meet the requirement. In addition to the obligatory limit value, the business can also score points (max 5 points) for doing better than the limit value. Since energy carries a great deal of weight in life cycle terms, a business with low energy use will score a relatively high number of points.

In this version of the criteria, the business must report its annual consumption of purchased energy in an energy tool. The purchased energy consumption is then compared with a target value for an equivalent business under optimum conditions. The target value is calculated in the energy tool based on a number of parameters (e.g. floor area, number of buildings, number of guests and amount of laundry washed). If the business produces its own energy, this does not need to be counted in the energy model. The reason for this is that the quantities are often small (usually relates to solar panels) and it is often difficult to document an exact amount. Purchased energy (ordinary electricity) used in the production of self-generated energy must be included.

The limit value for energy is set such that the ratio between consumption of purchased energy and the target value must not exceed 1.8. Hotel operations that do not offer breakfast must meet a stricter limit value of 1.7, since energy use from the serving of breakfast does not apply.

5.1.3 Energy tool

To make the necessary calculations to document requirements O5 and P1, the business must use a specific energy tool (which also calculates carbon emissions, which are reported in requirement P4) developed by Nordic Ecolabelling. It can be found at http://evaluation.svanen.nu/EnergyToolHRC/.

Brief description

Nordic Ecolabelling has chosen to move away from the previous rather rough division of hotels into classes. Instead we now want to set a more relevant limit value for permitted energy consumption for a particular type of business and combinations of different activities.

In line with this wish, we have developed our own energy tool, in partnership with ÅF Energi.

The energy tool calculates the specific annual consumption of purchased energy for the business and it calculates a specific target value for the business with regard to energy (electricity and heating), which is calculated based on the type of activity and the climate zone.

The target value states energy consumption for the business (and its subsidiary activities) under optimum conditions and using the best technology, making it an ideal value. The target value assumes that the business has low electricity use and that the building is relatively well insulated.

Target value energy: *A target value for energy that Nordic Ecolabelling's energy tool produces. The target value states a specific, guiding value for energy use for a very well run establishment of a certain size, located in a known climate zone and with a known number of guests.*

Limit value energy: *A limit value that determines how much more energy a business may have, compared with the business-specific target value.*

Based on the target value, Nordic Ecolabelling then sets a limit value for energy, which the business needs to meet in order to receive a licence. This limit value is set at a slightly more generous level than the ideal target value for the business. The reason for this is that it is relatively rare for the businesses to have entirely ideal conditions, or for it to be possible to run the businesses entirely optimally.

Based on the energy consumption, corresponding specific annual emissions of carbon dioxide are calculated, as well as specific target values for carbon dioxide. The target value for carbon dioxide assumes that the heating method is district heating.

It should also be borne in mind that, although energy consumption is an extremely important environmental parameter, the business also has other environmental impacts that are significant from a life cycle perspective. Energy consumption must therefore not be the only decisive parameter that determines whether the business receives a licence.

In order to use the energy tool, the applicant business must state the following:

The energy use of the business

- The amount of purchased energy used over a full year (electricity, fuel, district heating and district cooling if applicable).

Description of the building and the extent of the business:

- Which **zone** the business is in (governs assumptions about outdoor temperature for a normal year). For a zone map, see Appendix 1. This version of the criteria opens the way for businesses in the Baltic states to apply. To make applying easier, the number of zones has been reduced. It is also possible, if the business wishes, to use specific climate data, see below under "Non-standard climate calculations".
- Which **country** the business is in.
- **The area** for the various operational activities (i.e. the floor area of the hotel, restaurant and conference spaces). The model assumes that restaurant spaces have higher energy needs than hotel spaces, which in turn have higher energy needs than conference spaces. Catering businesses only need to state the area of the kitchen, since they have no dining room, but they are instead weighted with a model value for quantity of servings delivered (see below).

- **Building type** must also be given – standalone building, gable building (one wall shared with other buildings) or block building (several walls shared with other buildings), as well as the **area for each building** and the **number of floors**. The building type affects how much energy the business is permitted to consume (several external walls require more heating).
- **The number of guests** at the **hotel,** in the **restaurant** and/or at the **conference facility** and whether these vary over the year (i.e. are seasonally dependent). Catering businesses are required to state how many **servings are delivered** from the establishment, i.e. the servings that are prepared in the building but not consumed there (the model calculates 2 kWh electricity per catering serving). A limit value for keeping unused rooms heated has been incorporated into the energy tool. The limit value represents "at least one person per fifty square metres during a period corresponding to a tenth of the heating season". Fewer guests than that suggests that part of the building occupied by the business should not be kept fully heated.
- If there is a pool or spa facility, only the **area of the pool(s)** that are heated is to be stated (square metres of water surface, heated outdoor pools must also be included). The model assumes energy consumption for the pool and surrounding spaces based on the Swedish Energy Agency's statistics on energy use in sports halls[47]. The heat loss surface has the most impact on energy consumption, but also how much the surface is disturbed. The area of the associated pool and spa areas must also be stated (e.g. pool rooms, saunas, showers and changing rooms).
- **The amount of laundry** in kg must be stated. Also whether the laundry is cleaned **in house** or at an **external laundry**. This does not apply to daily laundering of items such as mops, dusters and the like, but does apply to large quantities of laundry, such as bed linen, towels and tablecloths, items that are commonly sent to an external laundry.
- If the laundry is sent to an external laundry firm, the applicant must state whether or not this laundry firm carries the **Nordic Ecolabel**. Based on this, a certain quantity of energy and CO_2 emissions is added to the applicant business' values. Energy consumption for a non-Nordic Ecolabelled laundry is estimated to be 1.5 times higher than that of a Nordic Ecolabelled laundry. If the applicant business sends its laundry to a laundry firm that is not Nordic Ecolabelled, it will be more difficult to achieve the target value.

Non-standard climate calculations:

- If the business wishes, the calculations may be corrected for a normal year. This means that, in the application, account may be taken of an unusually cold or warm year and this can be corrected for. Otherwise, the energy tool will base its figures on what it takes to be a normal year. If this correction is to be made, the average monthly temperatures must be entered for the period to which the energy figures relate. This type of temperature data can be found at the respective country's meteorological institute[48]. Where normal correction of the temperature is carried out, the business must save the data and information about the source of that data, so that Nordic Ecolabelling can check this.
- If, instead of the climate zone map, the business wishes to use more precise data that is specific for the location of the business, the normal average temperature per month is to be stated for the period in question. This is so that actual energy use can be

[47] STIL2, Swedish Energy Agency, 2008.
[48] For example: http://met.no/Forskning/Publikasjoner/metno_info/2010/

corrected for a normal year. This type of data can be found at the respective country's meteorological institute (the business must save the data and information about the source of that data, so that Nordic Ecolabelling can check this).

Non-standard occupancy:

- If the business' occupancy is particularly high or low during different months, this is to be corrected for. If the business has different trading seasons, e.g. accommodation only in winter, or only in summer, this will be reflected in the target value. A shorter trading season gives a lower limit for annual energy consumption. Time of year is also taken into account, such that more energy is permitted to be used by a winter business than a summer business. It is also possible to correct for the level of occupancy that the business experiences in different months.

The energy tool is designed so that specific energy use per square metre of area and year is the main measure of energy performance for the business. In the previous version of the hotel criteria, applicants were able to state their energy consumption per guest night. In this update, this option has been deleted, since energy use per square metre of area is judged to be the most relevant parameter.

In order for the energy tool to be the same for all applicants, it is important that the area is defined in the same way for all businesses. It has not been possible to find a single concept of area for businesses in those countries that will be using the model. It must therefore be very clearly defined which concept of area the data on area relates to (is it indoor area, the building's outdoor area, etc.). The model values used in the energy tool are based on "A_{temp}", a concept used by the Swedish National Board of Housing, Building and Planning (Boverket) that briefly means the area within the external walls that is intended to be heated to over 10ºC. Areas taken up by inner walls, stairwells, shafts and so on are to be included[49]. A garage should, however, never be counted[50]. If the concept of area on which the business has data and which is used in other contexts differs greatly from $A_{temp,}$ it may be worth the business converting its area data into A_{temp} before the area values for the business are entered into the model. In Norway, the floor area concept of "bruksareal" (BRA) is closest to A_{temp}. Bruksareal is the total area in a building that lies within the external walls. Internal dividing walls are included in the bruksareal figure, but deductions are made for dividing walls between units/residences and channels/chimneys with a cross-section of over 0.5 m^2. There must be a ceiling height of at least 1.9 m.

In restaurants it is generally the case that energy use is strongly linked to the kitchen. According to a US study, on average around 60% of total energy use derives from the kitchen (preparation, dishwashing, refrigeration)[51]. This figure is incorporated into the energy tool. It should, however, be noted that the same study gives food as the greatest overall source of environmental impact from restaurants, not energy use.

[49] http://www.boverket.se/Kontakta-oss/Fragor-och-svar/Boverkets-byggregler-BBR/Om-avsnitt-9-i-BBR/Atemp/
[50] http://www.boverket.se/Kontakta-oss/Fragor-och-svar/Boverkets-byggregler-BBR/Om-avsnitt-9-i-BBR/Atemp/Varfor-har-areabegreppet-Atemp-inforts/
[51] Baldwin C, Wilberforce N & Kapur A (2010) Restaurant and food service life cycle assessment and development of a sustainability standard, The International Journal of Life Cycle Assessment, Vol 16 No. 1 40-49

Model values in the energy tool

It is important to make clear that the model values used in the model determine the outcome. These model values have a major impact on the calculation of the target value for each individual applicant.

The target value that the model calculates is based in part on the actual conditions of the business, such as floor area, number of floors, number of detached external walls, number of guests and so, i.e. the data that the business enters about itself.

The calculations are also based on a number of model values. These model values may relate to factors such as what area of wall is assumed to be windows – which in turn affects assumptions on heat loss. Another model value is energy use for ventilation, which is assumed to depend on the number of guests that the business has. For more in-depth information about the model values used by the model (and their sources), see Appendix 2.

The model values used in the model are based on data published as part of the Swedish Energy Agency's project STIL2 2010 Hotels, restaurants and public venues.

STIL2 is a project by the Swedish Energy Agency that describes energy use in premises, and in particular breaks down electricity use for different purposes. Detailed energy inventories were carried out for a total of over 1,000 buildings selected by statistically sound methods. The project began in 2005 with an inventory of offices. Then came schools (2006), health facilities (2007), sports facilities (2008), retail spaces (2009) and hotels and restaurants (2010). STIL2 studied the entire energy use of the buildings, but with a primary focus on electricity consumption. The electricity consumption figures include electricity for the building and for the activity conducted in the building, and divide the electricity consumption into different categories such as lighting, fans and other electricity use specific to the activity in question.

The values presented in statistical reports such as STIL 1990 and STIL2 describe the actual situation in Swedish hotels, restaurants and conference facilities. They relate to an average geographical Swedish zone, a building with average occupancy and an average number of prepared servings per year. These values are thus not extremely good or extremely poor, but average.

The values taken from the STIL surveys have been used for guidance, with the values in the model falling below the averages in STIL. In developing the model, ÅF started with the Swedish Energy Agency's averages from 1990 and 2010, and then made them more stringent by around 15%.

According to the STIL2 statistics, the average electricity consumption, excluding electric heating, per square metre is 117 kWh/m² for hotels and 360 kWh/m² for restaurants.

The model value of 100 kWh/m² has been used in the model for hotel areas. Around 30% of the hotels surveyed as part of STIL2 come in at less than 100 kWh/m².

The model value of 260 kWh/m² has been used in the model for restaurant areas. This value is somewhat more stringent than the figure for hotels (but entirely achievable), since around 25% of the restaurants in the STIL2 statistics fall below 260 kWh/m².

The model value of 75 kWh/m² has been used in the model for conference facilities. STIL2 does not report conference facilities separately, but it is reasonable to assume that the energy

use in these activities is slightly lower than in hotels, since they do not offer functions such as showers and minibars.

The key figure for energy use on pools is based on data from STIL 2008 sports facilities. This value includes the energy use specifically related to the pool, as well as energy use in surrounding areas such as changing rooms.

Facilities that use a Nordic Ecolabelled laundry firm are weighted with 1.35 kWh/kg (and 310 g CO_2e/kg) for hotel laundry (bed linen and towels, usually only lightly soiled) and 2.45 kWh/kg (and 540 g CO_2e/kg) for restaurant laundry (tablecloths, napkins and so on from restaurants and catering kitchens; these textiles are often medium soiled but they may have stains that require relaundering). Where the laundry firm is not Nordic Ecolabelled, there is no guarantee that the laundry would have such low energy use. Non-Nordic Ecolabelled laundry is therefore weighted with 1.5 times these factors.

In developing the energy model, ÅF has used Swedish statistical data, while also having access to data from licensed hotels in the Nordic countries. The optimum situation would have been to gather statistics from all the Nordic countries and the Baltic states in order to check for any major differences. It is, however, assumed that the Swedish statistics are representative of hotels, restaurants and conference facilities in the Nordic countries and the Baltic states, and that this does not have a significant impact on the outcome in the model.

Based on energy use, the model similarly calculates an optimum target value for carbon dioxide. The following carbon dioxide factors are used to convert from energy use to carbon dioxide:

Table 7 Carbon dioxide factors

Carbon dioxide factor	
Electricity	0.385[2]
Oil-fired boiler in the building	0.2808[2]
District heating	0.124[3]
Natural gas	0.2044[2]
Town gas	0.28[1]
LPG	0.234[2]
Pellets	0.0
District cooling	0.25[1]

Sources:
[1] *Energi&Miljöfakta, www.energiochmiljo.se.*
[2] *Nordic Ecolabelling's criteria for Textile Services 2.1 Appendix 3, with data from the Danish Energy Agency (2008): Energy Statistics 2007.*
[3] *Nordic Ecolabelling's criteria for Grocery Stores.*

When it comes to calculations for carbon emissions from electricity use, the calculations are based on the EU's energy mix value for carbon dioxide, since the Nordic and Baltic countries are connected to the European electricity grid. A business' own carbon dioxide values cannot be used, even if the electricity is self-generated or from a renewable source ("green energy"). The reason is that the supply of renewable electricity is not based on demand, which means that increased demand will not necessarily lead to increased production of renewable electricity; it is simply a redistribution of the existing supply.

District heating in Sweden has a great deal of bioenergy-based production and so relatively low net emissions of CO_2. A pellet-fired boiler produces even lower CO_2 emissions, while an oil-fired boiler gives higher emissions, which pushes in the direction of converting from oil to pellets in the areas where district heating is not available.

Summary of changes in the energy parameters

Compared with previous ecolabelling criteria for hotels, the following key changes have been introduced:

- The revised criteria use the hotel's area and number of guests as key figures. The hotel's economic turnover is not considered as relevant a parameter when calculating and apportioning energy use. The number of people using the premises has been identified as a more suitable measure, which justifies the choice of number of hotel guests as a parameter. The number of hotel guests also indicates the occupancy rate, which in turn affects energy use. The same reasoning applies for restaurants and conference facilities, in this case expressed as the number of conference and restaurant guests.
- Applicants must know what the establishment's annual energy use is in order to be able to use the energy tool, and also which climate zone the establishment is in (or alternatively the average monthly outdoor temperatures). The values for average monthly outdoor temperature and for energy use must apply to the same period. The business described must also relate to the same period. This is new compared with the previous version of the criteria for restaurants. Producing average monthly values is also new for hotels.
- In order to reduce the complexity in the model, fewer climate zones are used.
- The model takes account of seasonal variations in opening times and occupancy.
- Type of building and number of floors must be stated.

- The model takes account of whether the establishment has a pool, and requires the dimensions of the water surface.
- Laundry can no longer be discounted from energy use. The amount of laundry cleaned at the hotel or by an external laundry firm must be stated.
- The energy limit value is a brand new requirement for restaurants.

Summary of the factors that affect the outcome of the energy calculation
The factors that affect the target value for the business (and the limit value set in the Nordic Ecolabelling criteria) are:

- The geographical location of the building.
- Area of different types of activity (hotels, conference facilities and restaurants). Restaurant activities, for example, are allowed higher energy use than hotel activities, so it is important that the area of the restaurant is entered correctly in a business that includes both activities.
- The layout of the building.
- Whether there is a pool and how big it is.
- The number of guests, with account taken of whether occupancy or food preparation is unusually high or low. Having few guests (low occupancy) makes it more difficult to meet the limit value, while more guests makes it easier.
- Season, i.e. how much business is conducted in the building for each month.
- The amount of laundry and whether this is cleaned by a Nordic Ecolabelled laundry firm. It is easier to meet the requirements if the laundry is sent to a Nordic Ecolabelled laundry firm. If the laundry is sent to a non-Nordic Ecolabelled laundry firm, the business is weighted with 1.5 times more (for energy and carbon dioxide) than if it was a Nordic Ecolabelled laundry firm.
- Whether heat sources with high carbon dioxide factors are used. This will make it more difficult to score points on the carbon dioxide requirement.

Impact analysis for Nordic Ecolabelled hotels and restaurants
For the majority of businesses that currently have a licence, according to preliminary testing[52], the energy tool produces a target value for energy use that is considerably lower than the actual energy use of the business today. This means that the businesses have greater energy use than they should optimally have. On average, the businesses have energy use that is 1.52 times higher than the target value (ideal value). As has already been stated, it is however rare that a business is able to function under optimum circumstances. There may be many reasons for this: The building may have poor insulation, the technology may be older, and the kitchen may be a relatively large consumer of energy.

When determining where the limit value for energy use is to be set, it is important to understand the consequences of the limit value. If the limit value was set at 1.6 (i.e. 1.6 times higher than the optimum target value), 11 of the 36 hotels used as reference objects in the preliminary testing would meet this. If the limit value was set at 1.8, a further 6 establishments would meet it. It should be mentioned that only 3 establishments in the preliminary testing[56] came in below the target value.

There has not previously been an energy limit value for restaurants (and conference facilities). However, Nordic Ecolabelling has received certain information about energy use via

[52] carried out in October 2012

requirements for energy measurement. As with hotels, it has also been possible to draw on data from the STIL statistics for restaurants and conferences. This forms the basis for determining the target value and limit value.

It should also be borne in mind that a restaurant's energy use is of subsidiary importance from a life cycle perspective, compared with the environmental impact of the food. It is also the case that energy use varies greatly across different types of restaurant, depending on the type of kitchen that the restaurant has[53].

The energy tool does, however, take account of the restaurant's size (kitchen and dining room). For catering restaurants (with no dining room), the target value is calculated based on the area of the kitchen and the number of servings produced.

What the energy tool does not take into account

In life cycle analyses, it is common to include energy losses associated with the production and distribution of electricity, heating or fuels used. This is done by multiplying a primary energy factor that takes account of such energy losses. In Europe, for example, it is common to use a primary energy factor of 2.5 for electricity. This means that for every 1 kWh of energy purchased, a business has actually used 2.5 kWh. The losses come from the conversion of energy into electricity and from the distribution to the customers. Similar energy losses have been attributed to district heating and various fuels.

Nordic Ecolabelling has considered the possibility of including energy losses when calculating energy use. In this way, businesses with heating systems that carried major energy losses (such as electricity) would be punished. However, we realise that businesses tend to exert little influence over the choice of heating system. This lack of steerability means that businesses may have economic or technical limitations with regard to heating systems.

It is often also the case that businesses do not own the buildings in which they operate. Last but not least, there are major differences in the Nordic countries when it comes to energy policy and priorities. While the district heating network is well developed in Sweden, there is not the same level of availability in Norway.

In this product group, it is important that the requirements are achievable for businesses across the whole of the Nordic region. A good range of ecolabelled restaurants in Denmark is of little help when the destination is Finland or Norway. Against this background, we have therefore decided that the energy tool for this version of the criteria should not deal with primary energy factors.

Measuring electricity, heating and cooling consumption

As the parameters of electricity, heating and cooling are crucial to establishing whether the business complies with the limit values for energy and carbon dioxide, it is important that these parameters can be satisfactorily documented. They can usually be documented via information from the supplier. However, it is sometimes the case that suppliers of electricity, heating and cooling are unable to provide documentation for the specific business in question. If this is the case, the following applies:

[53] TTS, 1998

Measuring electricity consumption
The business must have an electricity meter for monitoring electricity consumption and must regularly be able to document the consumption of the entire business.

If the business' electricity consumption cannot be documented, electricity meters must be installed. Where a business is unable to account for its electricity consumption separately from other businesses (e.g. a restaurant located in a shopping centre) an additional electricity meter must be installed capable of providing the energy consumption of the entire business.

Nordic Ecolabelling may in exceptional cases allow certain parts/premises of the business which do not include energy-intensive installations or equipment to be exempt from regular measurements. This may, for example, apply to what are known as "satellite kitchens", in other words a small kitchen connected to a conference suite or entertainment suite used only sporadically for heating up food (not preparing food).

For businesses where various events are held such as stage performances or exhibitions, whose energy consumption cannot be considered to be included in the day-to-day energy consumption for operation, that section may in exceptional cases be discounted with the approval of Nordic Ecolabelling, provided that the energy consumption is metered and accounted for separately. This provides an opportunity for businesses to host major events on special occasions, outside their ordinary operations.

Measuring heat, cooling and ventilation
The business' use of heat is normally much more complicated to measure compared with electricity consumption, particularly if the business is a small unit in a larger building containing many other businesses (a common situation for restaurants). Nordic Ecolabelling can therefore accept a calculation based on the energy consumption for heating being correlated with a percentage of the total surface area.

For ventilation in a restaurant, the calculation can be based on the floor area plus 30 kWh[54] for ventilation electricity per restaurant area. For hotels and conference facilities the calculation can be based on surface area plus 5 kWh/m^2 for ventilation electricity. This only applies if the electricity for ventilation is not included in other electricity consumption.

5.1.4 Limit values for water consumption O7, P3

In the same way as in the previous hotel criteria, the limit value for water is optional but is now calculated based on the number of sub-businesses that the applicant business has (e.g. hotel with restaurant or hotel with pool and restaurant). The requirement is calculated as water consumption in litres per guest.

For restaurants this is a more stringent requirement as in version 1 of the restaurant criteria points were scored if the business had a separate water meter. In order for businesses to be able to obtain a licence based on meeting the limit value for water, it is essential that they are able to establish their consumption by measuring the water consumption of the specific business, either using their own meter or by using data from the water supplier. This is also required if points are to be scored for performing better than the limit value requirement.

[54] According to information from Anders Hemmingson, based on STIL statistics

If the business does not need to meet the limit value for water in order to obtain a licence, it is acceptable for water consumption data to be produced by other means, for example on the basis of invoices or a calculation of the proportion of water consumed as part of a larger business. This is accepted as in practice it is often impossible to install a meter for the specific business in question. Subsequently the business can investigate whether consumption is lower than the limit value or choose to comply with another optional limit value and thus not score points for this requirement.

The water limit value is calculated using the following formula:

Limit value for water consumption for the entire business = 200 litres/guest x no. hotel guests + 45 litres/guest x no. restaurant guests + 25 litres/guest x no. conference guests +75 litres/guest x no. external spa guests

If the hotel business has a pool/spa, 275 litres/guest applies.

The limit values for the different sub-businesses are based on water consumption for licensed hotels and restaurants and literature data.

For **hotels** the limit value is set at 200 litres/guest, which corresponds to average consumption in a licensed hotel serving only breakfast. The water consumption of the licensed hotels varies considerably but average figures show that hotels with a restaurant and a pool consume more water (average 275 litres/guest) and hotels with only a restaurant (average 228 litres/guest) and hotels with only breakfast (average 200 litres/guest). Information from Statistics Norway's report "Water consumption in Food Processing and the Service Industry in Norway"[55] gives estimated water consumption in a high standard hotel with a pool as 500 litres/guest, while for a normal standard hotel water consumption is estimated at 275 litres/guest. Here it is not stated whether the values include any restaurant business in the hotel. Our figures, however, show that water consumption of 500 litres/guest seems very high, as few of the hotels (8% of the hotels which have both a pool and a restaurant) have such high water consumption.

For **restaurants** the limit value is set at 45 litres water/guest. Any bar guests are also counted in the number of restaurant guests. The limit value is based on figures from licensed restaurants and values for water consumption in SSB's report. The report states a consumption value for cafeterias of 50 litres/guest. This consumption value agrees with the figures that Nordic Ecolabelling has for restaurants, although these figures do vary considerably. There are also many different types of restaurant (canteens, cafés, take aways, à la carte etc.) with varying water consumption. It must be pointed out that the underlying data is limited and that it is uncertain how the requirement will affect different types of businesses.

For **conference facilities** the limit value is 25 litres/guest. As we do not have any licence data for this type of business, Nordic Ecolabelling has based its figures on values in the literature and calculations based on the water-consuming activities a conference guest carries out during a day. The water consumption of conference guests is mainly associated with use of the toilet. The water consumption of a school pupil/student is given as 20 litres/day in SSB's report and can be considered to be a relevant comparison with a conference guest. Comparisons can also be made with household consumption. Water consumption per person in a household varies.

[55] Svein Erik Stave, "Water consumption in Food Processing and the Service Industries in Norway", SSB 2006

Different sources state consumption ranging from 130-200 litres/person per day[56] [57] [58](2, 3, 4). It is assumed that 23% of water consumption comes from visits to the toilet (2). This data concerned water consumption for 24 hours, while a conference guest would not spend an entire 24 hours in the conference facility. One toilet manufacturer states on their website that approximately 35 litres of water per person per day is used in flushing. Based on the values above, water consumption for a conference guest is set at 25 litres/guest.

For hotels with a **pool and/or a spa** the limit value is 275 litres/guest. As hotels do not record how many of their hotel guests use the pool, it has been difficult to set a value for water consumption per pool and/or spa guest. The limit value of 275 litres/guest is based on data from licensed hotels that shows that water consumption for hotels with a pool/spa is 275 litres on average. Pool refers to a pool where the water is recirculated and disinfected. Jacuzzis do not count as pools as it is not considered correct to have additional water consumption for such a small pool. Water consumption associated with pools is extremely dependent on the number of people who use the pool (as it must be filled with a number of litres of water per user) and the temperature of the water and of the location, due to evaporation[59]. There is also a certain amount of water consumption linked to the fact that guests must shower when they use the pool. Spa facilities which have guests who only visit the spa for the day can add these guests to their limit value calculation for water consumption. In this case, these are calculated as pool guests at 75 litres/guest, equivalent to the extra consumption added per guest for hotels with pools.

In tests carried out prior to the consultation period, results showed that information on 9 businesses was sufficient for calculating the limit value for energy and water consumption. The data includes hotels with and without restaurants, and with and without a spa/pool, but no businesses that were solely restaurants or conference facilities. The result shows that 8 out of 9 businesses met the limit value for water.

The starting point is that all businesses must be included in the water limit value. For spa businesses an exception may be made if the business, through metering or by means of an external professional assessment, is able to separately measure its water consumption. The reason behind this is that hotels are often unable to measure their consumption (of water, electricity or heating) separately for the spa alone[60]. Some are able to measure one of the parameters but rarely all of them.

The water limit value does not take into account whether laundry is carried out internally within the business or whether it is sent out to an external laundry. This means that sending laundry out to an external laundry is encouraged as in many cases it is judged to be better from an environmental perspective overall. Most professional laundries wash hotel and restaurant laundry in equipment systems with much lower water consumption than conventional machines[61]. If businesses also send their laundry to a Nordic Ecolabelled laundry (Textile services), it is even easier to meet the energy requirement as Nordic Ecolabelled laundries have lower values in the energy and carbon dioxide calculations.

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[56] www.regjeringen.no, accessed 08.03.2011: www.regjeringen.no/nb/dep/oed/dok/NOU-er/1994/nou-1994-12/22/2.html?id=333897
[57] Store Norske Leksikon, accessed 08.03.2011:www.snl.no/vannforsyning
[58] Klimaklubben, accessed 08.03.2011: hwww.klimaklubben.no/gh/layout/set/print/Nettsider/Groenn-Hverdag/Tm/Artikler-uten-tema_id/Siste-nyheter/Miljoekonsekvenser-ved-vannforbruk
[59] Truls Krogh, Norwegian Institute of Public Health, oral information, October 2011
[60] Contact with licensed hotels
[61] Oral information, Jeppe Frydendal, internal expert.

The requirements must be documented by providing information on total water consumption from the water bill, for example, and an overview of the number of guests in the respective category (hotel, restaurant or conference guest).

It must be pointed out that the limit values are associated with uncertainty due to the small amount of data and major variation in the data that is available, plus the fact that the previous version used a different way of dividing hotels into classes – consumption in litres per guest.

Nordic Ecolabelling would therefore welcome consultation comments on the limit values in the proposal for consultation.

5.1.5 Limit values for waste O8, P4

Amounts of waste can be reduced by encouraging sorting and recycling/reuse. For a discussion on a separate limit value for organic waste, see requirement P33 "Measuring organic waste" in section 5.1.17 "Food". The requirement concentrates on supporting precisely this through a limit value and a sorting requirement, see the section on waste re. sorting.

In the same way as in the previous hotel criteria, the limit value for waste is optional but is now calculated based on the number of sub-businesses that the applicant business has (e.g. hotel with restaurant or hotel with pool and restaurant). The requirement is calculated as kg unsorted waste per guest. For restaurants, this requirement is more stringent, as there were no limit value requirements for waste in the version 1 criteria for restaurants. Here too, more points are scored the lower the amount of unsorted waste there is compared with the limit value.

The limit value for **hotels** is set at **0.20 kg unsorted waste per hotel guest**. The value is set based on an analysis of the requirement in the previous version (version 3) of the hotel criteria and data from licensing, which, however, only shows the total amount of unsorted waste and not how much waste comes from the various sub-businesses (accommodation, restaurants and conferences). Licence data for businesses with (almost) only accommodation points to a median value of 0.4 kg unsorted waste per guest, including restaurants and conference facilities. The guest concept has now been changed and a hotel guest excludes breakfast, which is instead calculated under restaurants. This change also applies to the waste limits. Licence data also indicates that there are major variations in how waste is recorded in the Nordic countries, as Norway, Denmark and Sweden are on average approximately 30% better than the limit values and Finland approximately 58% better, which may indicate a difference in systems.

The limit value for **restaurants** is set at **0.8 kg unsorted waste per restaurant guest**. This value is a cautious estimate as specific data describing the total amount per restaurant guest is lacking. In the license data for hotels the requirement does not relate to the same number of guests as the number of guests of the restaurant and can therefore not correctly be used in this context.

The limit value per **conference guest** is set at **0.20 kg unsorted waste**. Waste is expected to be material that the conference organiser and guest have produced, e.g. paper, cardboard, fruit and biscuits. Where food is served at a conference, the waste associated with serving food will normally be calculated together with the kitchen and restaurant section of business.

The relationship to the previous requirement levels for hotels, restaurants and conferences is hard to ascertain, partly because previously no distinction was drawn between hotels, conferences and restaurants in terms of waste. During the revision process the required level has been tested in 28 businesses (including hotels, restaurants and conference facilities), 15 of which met the requirement and three of which were unable to provide any information. This is equivalent to 36% of the businesses failing to meet the criteria.

5.1.6 Constant measurements, O8

It is of the utmost importance that the business ensures that they continue (after the licence has been awarded) to remain within the limits set out by the criteria document. For this reason businesses must have procedures in place for measuring and documenting the limit values for energy, carbon dioxide, water and waste. Measurement and documentation are to take place at the following intervals:

- Energy – every month that the facility is open
- Water – every month that the facility is open
- Amount of waste – at least one week per quarter when the facility is open

To document the requirement, procedures describing how measurements and readings taken as above are to be submitted.

5.1.7 Energy

O9 Oil for heating

Oil is a fossil energy source that generates major carbon emissions. Nordic Ecolabelling does not want businesses that rely largely on oil for heating to be able to obtain the Nordic Ecolabel. The requirement is fulfilled if less than 40% of the heating need is met by oil. The heating need is calculated by the energy tool. The requirement will not exclude businesses that use oil-fired boilers to cover the extra heating need that arises during the coldest months.

P4 Carbon dioxide

New for this version of the criteria is a points score requirement for carbon emissions. An applicant can score max 3 points if they have an energy source that produces relatively low carbon emissions.

Carbon dioxide has been weighted as a high priority area within the RPS. The energy tool therefore also takes account of the carbon emissions of the various energy types. In the model, these are weighted with different carbon dioxide factors, see table 7. Based on Nordic Ecolabelling's energy guidelines, in this version of the criteria we will no longer encourage "green electricity", since such a system does not automatically lead to any actual environmental improvements. This means that all electricity used will be weighted with a factor for carbon emissions that equates with the European energy mix. The European energy mix factor has been used, since the European energy market is open, and this will put the businesses on an equal footing in terms of electrical energy. Through the optional carbon dioxide limit value we will still, to some extent, steer applicants away from fossil energy sources, since the use of renewable fuels produces low carbon emissions.

The limit for 1, 2 and 3 points, for example, is set according to the principle that around 40% of the businesses should be able to achieve 3 points and 70% or so 1 point. Based on the preliminary testing, the limit for carbon dioxide was set according to these principles.

P5 Solar panels for heating premises or water

Nordic Ecolabelling wishes to promote the use of heating solutions that reduce energy consumption and carbon emissions. The use of solar energy for heating, hot water or premises is a good environmental measure, where the energy is "free" and emissions of carbon dioxide are practically zero. Points are given if more than 20% of the heating need is met by solar panels. The heating need is calculated by the energy tool. The applicant must document that the installed solar panels have a power output corresponding to 20% of the heating need. Businesses that have installed solar panels are also likely to score well in both P1 and P4, since energy use and carbon emissions are reduced.

P6 Heat pumps for heating premises or water

A heat pump moves heat from cold to warm surroundings based on physical laws regarding pressure and temperature. It converts high value energy (electricity) into low value energy (heat). The output from a heat pump can vary a great deal, but will generally be 3-4 times the input energy. This means that 3-4 kWh heat is produced for each kWh electricity[62]. To score points, the applicant needs to be able to document the fact that the output meets more than 30% of the heating need. The heating need is calculated by the energy tool. Businesses that have installed heat pumps are also likely to score well in both P1 and P4, since energy use and carbon emissions are reduced.

P7 Refrigerant

The obligatory ban on CFCs as refrigerants previously in the hotel and restaurant criteria has been removed as this is now governed by legislation in all the Nordic countries. Instead we have chosen to retain the slightly reworked version of the restaurant criteria's points requirement for refrigerants in fridges and freezers.

The new requirement is a points score where points are awarded if more than 50% of the refrigerants (calculated on fill weight) at the facility have a GWP_{100} value (global warming potential) of less than 5. This seeks to encourage the use of refrigerants with a low climate impact while still being possible to fulfil. Examples of such coolants are carbon dioxide, ammonia, butane, propane, ethylene and propylene.

As in previous versions of the criteria for hotels, the requirement covers all appliances with the exception of free-standing appliances with a refrigerant fill weight less than 3 kg.

P8 Energy analysis

The requirement is retained practically unchanged, since it is still relevant, shows potential and has a certain amount of steerability.

The purpose of setting a requirement for an energy analysis with proposed measures is to clarify the potential for improvement at the establishment in energy terms, and to highlight cost-effective measures that are worth implementing.

Through our criteria (with support of the RPS), we wish to set requirements for energy use that cover both the *property* and the *business* that takes place within the property. In the Nordic countries, there is currently a statutory requirement for energy declarations/certificates[63]. At

[62] http://no.wikipedia.org/wiki/Varmepumpe
[63] *Directive 2002/91/EC* of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings, http://www.buildup.eu/publications/1147

the moment, these only apply to the *property*. In order to address the whole picture, we set a requirement that the establishment's energy analysis must contain a survey both of the *property's* conditions (consumption, including potential for improvement and costs) *and the business'* conditions (consumption, including potential for improvement and costs).

If the applicant so wishes, there is the option of using a specially developed guide to ordering an energy analysis. It is, however, not obligatory to use this guide. The guide explains which areas the energy analysis should cover, and it also gives a rough outline of how it may be structured. It is based on the statutory requirements regarding what a Swedish energy declaration should contain[64], but has naturally been reworked so that it functions in all Nordic countries.

P9 Lighting

The points score requirement for lighting, aimed at promoting low energy use, has been retained (compared with previous versions of the hotel criteria), but has been reworded. For restaurants there is still a possibility of scoring points for lighting with low energy consumption, but here too the requirement has been slightly reworded. Since conditions vary for the different establishments, we have a rising points scale, with higher points for a higher proportion of light sources no lower than class B or LEDs.

In order to be less prescriptive of technology in an area where rapid technical advances are taking place and where relatively stringent statutory requirements have come into force (such as the phasing out of filament bulbs within the EU under the Ecodesign Directive[65]), we have chosen to set requirements that promote light sources with a good energy classification.

The energy classification system is obligatory[66] for non-directional lamps and applies across the EU countries. It has also been incorporated into Norwegian law, which means that it works well in all Nordic countries.

The EU's energy labelling of light sources does not cover reflector lamps, and so does not apply to ordinary "downlight" halogen lamps. Reflector lamps (directional) therefore require energy efficient LEDs (Light Emitting Diodes). The requirement means that downlights, for example, with ordinary halogen lamps do not score points.

The requirement regarding EU energy labelling of light sources also does *not* apply to light sources below 4 Watts. This means in practice that much of the LED lighting available cannot be energy labelled, even though it saves energy[67]. Nordic Ecolabelling accepts LEDs despite the possibility that there may be environmental problems associated with some of the components.

This requirement now applies to the whole business, both indoors and outdoors, and Nordic Ecolabelling has chosen to include all types of lighting, even if it is not permanently installed.

P10 Automated lighting controls

[64] Boverkets föreskrifter och allmänna råd om energideklaration för byggnade rBFS 2007:4 BED 1 (plus ändringar) http://webtjanst.boverket.se/Boverket/RattsinfoWeb/vault/BED/PDF/BFS2007-4BED1.pdf
[65] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:285:0010:0035:SV:PDF
[66] http://energimyndigheten.se/sv/Foretag/Energimarkning---ditt-ansvar/Fragor-och-svar/
[67] According to contact with Peter Bennich, Swedish Energy Agency, May 2011.

Within this requirement, higher points are awarded where a greater proportion of the establishment's lighting is connected to automated lighting controls. In the previous version of the criteria for hotels, outdoor lighting and lighting in guest rooms was covered by a similar requirement. This requirement now covers the whole of the licensed business, and therefore represents a tightening of the criteria for restaurants.

Automatic lighting controls for indoor lighting save energy. In this context, we accept several different solutions: for example daylight sensors, movement sensors, or preferably a combination of the two. Keycards for guest rooms are also an approved form of automated lighting control. The energy consumption in this area is also governed by the energy limit value, but we have chosen to retain the requirement, since it is a measure that in itself can produce savings and acts as a signal for guests of the business.

P11 Ventilation controls

The requirement is considered to still be relevant and has been retained practically unchanged (it was previously merged with the requirement on automated lighting controls in the hotel criteria). Although, in this version of the criteria, we place great emphasis on the limit value, we see it as relevant to continue highlighting an area where energy savings can be made. The previous version of the hotel criteria also contained a requirement regarding how much of the ventilation was connected to a heat recovery system. This requirement has been deleted, since it was difficult to document and the area is now governed by the energy limit value requirement.

5.1.8 What counts as ecolabelled?

Several of the requirements in the criteria document usually state that the business must purchase a certain proportion of ecolabelled products, for example in the requirements for chemicals and purchasing (including consumables, printed matter, durable goods and services). In this revision, products labelled with the Nordic Ecolabel and the EU Ecolabel are counted as ecolabelled. However, "Good Environmental Choice" (Bra Miljöval) is not included in the proportion that is ecolabelled in this revision proposal. During the consultation period, however, this label will be evaluated in order to see whether we can accept it as equivalent to a life cycle-based type 1 label with comparable requirement levels.

5.1.9 Chemicals

O10 Ecolabelled dishwashing chemicals

The requirement means that a high proportion (90%) of the dishwashing products must be ecolabelled. The requirement covers dishwasher detergent, drying agents and hand dishwashing detergent. Soaking agent is not included.
This requirement has changed. Previously the proportion was calculated based on the active substance, but now it is calculated on the basis of the amount of product purchased in kg or litres. For hotels the percentage remains the same, but restaurants were previously subject to a requirement that 70% of the chemicals for dishwashing and cleaning combined must be ecolabelled.

Experiences from hotels show that dishwashing products constitute the largest proportion of total use of chemicals – irrespective of the size of the restaurant element. For businesses with just a restaurant, this proportion will only increase in relation to cleaning and laundry products. By setting a requirement that almost everything used for dishwashing must be ecolabelled, we

ensure that eco-friendly products are used. Access to ecolabelled dishwashing chemicals is good in the Nordic market.

Soaking agents are exempt from the requirement. Soaking agents are included in the criteria for Nordic Ecolabelled dishwasher detergent for professional use but not in the criteria for dishwasher detergent for consumers. As not all the businesses use professional products, particularly small hotels, it is difficult to require the inclusion of soaking agents. This would force small businesses to buy more of these products than they need. Hotels and restaurants largely find it essential to use soaking agents.

The requirement is worded in the same way as in the version 3 criteria for hotels, with the exception that the percentage is now to be based on the amount purchased in kg or litres, not amount of active substance as previously. Hotels, restaurants and conference facilities have an overview of the amounts purchased and what they have paid for the products. The amount of active substance can be obtained from their suppliers but it is not a parameter that they themselves monitor changes in over time or when switching product. There are also some suppliers who do not wish customers to be aware of the content of active substance in the products they sell. Nordic Ecolabelling has therefore chosen to move away from active content and instead set a requirement based on the amount purchased in kg or litres. This will make it easier for the business to relate to and they will be less dependent on information from chemical suppliers.

O11 Ecolabelled laundry chemicals

The requirement means that 90% of the amount of products used for laundering textiles, internally at the hotel, must be ecolabelled (excluding fabric softener).

Studies[68] [69] show that laundering textiles is one of the activities of an ordinary family that places the greatest burden on the environment. It uses water, energy and chemicals. Hotels and restaurants give rise to even larger amounts of textiles per person that need to be washed as hotel guests often stay one night or two. In a restaurant tablecloths and napkins must be washed after use, which means that this is an important area for which requirements must be set.

The requirement is worded in the same way as in version 3 of the criteria for hotels, with the major difference that the percentage is now to be based on the amount purchased in kg or litres, not amount of active substance as previously. For an explanation for the change, see O10. The requirement is therefore new for restaurants, as no corresponding requirement was made previously. Access to ecolabelled laundry chemicals is good in the Nordic market.

By setting a requirement that almost all laundry detergents used must be ecolabelled, we ensure that eco-friendly products are used. Fabric softener is exempt from the requirement. Fabric softener is included in the criteria for Nordic Ecolabelling of laundry detergents for professional use, but not in the criteria for laundry detergents for consumers. As not all facilities use professional products, particularly in small hotels, Nordic Ecolabelling chooses not to include fabric softener in the requirement. We do not wish to force small businesses to

[68] "Danske husholdningers miljøbelastning" report from the Danish Environmental Protection Agency No. 13, 2002, Copenhagen 2002 and
[69] "Miljøbelastningen ved familiens activiteter", Danish Competition and Consumer Authority, report 1996.1¸ Copenhagen 1996.

buy more of these products than they need. The use of fabric softener is often necessary as the hotels and restaurants must wash bed linen, towels and table linen.

Requirement O10 covers only laundry carried out internally within the business, i.e. laundry washed by external laundries is not covered by the requirement. Sending the laundry to a Nordic Ecolabelled laundry ensures that the textiles are washed in the most eco-friendly way possible. Points are scored for this in points score requirement P14.

O12 Ecolabelled cleaning products

This requirement means that 90% of the amount of cleaning products must be ecolabelled (products intended for daily cleaning of areas such as floors, bathrooms, toilets and kitchens; floor care and special cleaning are exempt).

Buying ecolabelled cleaning products ensures that eco-friendly chemicals are used without including substances that are harmful to health or the environment. Access to ecolabelled cleaning products for professional use has increased considerably in recent years and Nordic Ecolabelling therefore wishes to test tightening up the requirements compared with the corresponding requirement in version 3 for hotels. There the limit was 50%, which has now been set at 90%. The requirement applies to products for daily cleaning; special cleaning products are exempt.

Special cleaning products

The background to the exclusion of special cleaning products from the percentage calculation in O12 is that their use is necessary for hotels, restaurants and conference facilities, but they cannot currently be Nordic Ecolabelled.

Special cleaning products refers to products that are only used periodically, i.e. not for daily cleaning. The new element in this version is that we do not define oven and hob cleaner as special cleaning products as these are used frequently.

Special cleaning products are now defined as:

Kitchens: Dishwasher/coffee machine cleaner, descaler, drain cleaner, copper/silver polish, freezer cleaner, stainless steel protector (for kitchens), stainless steel polish, etc.

Cleaning: Stain remover for solid surfaces, chewing gum remover, carpet cleaner, pool chemicals, drain cleaner, etc.

Laundry: Stain remover, washing enhancer and similar.

Oven and hob cleaner are no longer counted as special cleaning products as they are often used daily in hotels and restaurants.

O13 Requirements for non-ecolabelled products

The chemical cleaning, laundry and dishwashing products may not be classified:

Classification	Danger symbol and R-phrase under Directive 67/548/EEC	CLP Regulation 1272/2008
Toxic to the environment	N with R50, R50/53, R51/53	Acute toxicity 1: H400 Chronic toxicity 1, 2: H410, H411
	R52/53, R52, R53	Chronic toxicity 3, 4: H412, H413
Carcinogenic	T with R45 and/or R49 (Carc 1 or Carc 2) or Xn with R40 (Carc 3)	Carc 1A/1B/2 with H350, H350i and/or H351
Mutagenic	T with R46 (Mut 1 or Mut 2) or Xn with R68	Mut 1B/2 with H340 and/or H341

	(Mut 3)	
Toxic to reproduction	T with R60, R61, R64 and/or R33 (Repr1 or Repr2) or Xn with R62, R63, R64 and/or R33 (Repr3)	Repr 1A/1B/2 with H360, H361, H362

The classification applies in relation to the EU's Dangerous Substances Directive 67/548/EEC with subsequent amendments and adaptations and/or the CLP Regulation 1272/2008 with subsequent amendments. For a transitional period, i.e. until 1 June 2015, classification under the Dangerous Substances Directive or the CLP Regulation may be used. After the transitional period, only classification under the CLP Regulation applies.

Nor may the products contain the following substances:

- Alkylphenol ethoxylates (APEO) or alkylphenol derivatives (APD)
- Diallyldimethylammonium chloride (DADMAC)
- Linear alkylbenzene sulphonates (LAS)
- Reactive chlorine compounds
- Silver nanoparticles
- PBT (Persistent, bioaccumulable and toxic) or vPvB (very persistent and very bioaccumulable), under EU Regulation (EC) No 1907/2006, Annex XIII, see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:396:0001:0849:SV:PDF

This requirement also includes disinfectants, soaking agents, special cleaning products, rinsing agents and floor care.

Exceptions:

- Exceptions are made to the prohibition on substances classified as dangerous to the environment where the classification is due to content of quaternary ammonium compounds.
- Exemption from the prohibition on reactive chlorine compounds is made if the authorities require that these are to be used (for example to disinfect shower heads in Norway) and for use in pools.
- In addition a minimal limit is set of 5% special cleaning products (of the total amount of special cleaning products purchased in kg or litres) that does not need to comply with the criteria.

It is the chemicals suppliers who must state that the requirement has been met.

In version 3 of the criteria for hotels no requirements were set for special cleaning products, including floor care products; the amounts were included in the total limit value. They were not to be included when calculating the proportion of ecolabelled products and nor were they to meet the requirement set for non-ecolabelled products. In principle it could therefore be possible to use unlimited volumes of special cleaning products while there were no limits in terms of classification and content.

In version 4 of the criteria the requirement has been tightened up in that the chemicals requirements now include special cleaners. This has been done to ensure that the products which place the least burden on the environment are used. A need for special cleaning may sometimes arise at a hotel, restaurant or conference facility and we therefore approve the

exemption from the requirement of 5% of special cleaning products. The amount is calculated based on the total amount (kilos or litres) of purchased special cleaning products.

Disinfectant is covered by the requirement in version 3 of the criteria for hotels and no change to this requirement is proposed in version 4.

Nor has any other change to the wording of the requirement been made compared with version 3 of the criteria for hotels, apart from the addition of the requirement that the products may not contain silver nanoparticles. Silver nanoparticles are being used to an increased extent in floor care products – a development which Nordic Ecolabelling considers is unfortunate from a precautionary principle. Silver nanoparticles are antibacterial, and concern is expressed that this may lead to increased antibiotic resistance.

For restaurants the requirement was previously that non-ecolabelled dishwashing and cleaning products had to meet the equivalent requirement for products as set in version 3 of the hotel criteria. For restaurants the requirement has therefore been changed with the introduction of a ban on silver nanoparticles. Laundry chemicals are now also included in the requirement.

Consideration has also been given to the implementation of the new CLP Regulation in classifying products.

O14 Chemical-free cleaning methods

In general, vacuuming and the use of damp/dry microfibre cloths is sufficient for a good cleaning result in general cleaning. Having procedures for using vacuum cleaners, microfibre cloths or water for cleaning is seen as an important measure for minimising the use of chemicals. The requirement is therefore set such that chemical-free cleaning methods are used on all surfaces in communal spaces and in any guest rooms and conference premises.

Areas where it is necessary to use chemicals to comply with hygiene requirements are kitchens, dining rooms and baths/toilets, which are therefore not covered by this requirement. In addition, cleaning using chemicals is necessary where special needs arise, e.g. removing stains, floor care, cleaning windows/mirrors and cleaning floors with tough stains from shoes, suitcase wheels, etc. Therefore exceptions are made for using chemicals to clean windows, care for floor and for cleaning the lobby and entrance where necessary as these often contain stains which can be hard to remove without using cleaning chemicals.

O15 Dosage of dishwashing chemicals

Automatic dosing systems ensure that no more chemicals are used than are necessary to ensure hygienic dishwashing. As dishwashing chemicals constitute the highest proportion of total chemicals use in both hotels and restaurants, correct dosing of these chemicals is particularly important and therefore all dishwashers (with the exception of dishwashers intended for private households) must have automatic systems for dosing dishwasher detergent.

Automatic dosing systems for detergent are usually fitted by the chemicals supplier and are usually found in all equipment of the type: pass-through/flight, hood and "under counter" dishwashers[70].

[70] Bernhard Moe, retailer in Norway

A distinction should be made between dosing systems for detergent and for drying agents. The latter tends to be something included with the machine either as standard equipment or as additional equipment when purchased. A dosing system for drying agent alone is not sufficient for compliance with requirement O15. It is required that there is a dosing system for dishwashing. Points are scored for a drying agent dosing system under requirement P13.

O16 Dosage of cleaning chemicals

The requirement that chemicals used for daily cleaning must be dosed either automatically or manually using dosing equipment has been changed for hotels and restaurants. It is now an obligatory requirement. In hotels this was previously a points score requirement and points were only awarded for automatic dosing. The criteria for restaurants awarded points if the chemicals were dosed automatically or using a dosage pump.

Here automatic dosing means a system which mixes the product and water to make a solution ready for use. This ensures that no more chemicals are used than that necessary to ensure a good cleaning result.

The majority of products used for regular cleaning can be bought in units which can be attached to an automatic dosing system that provides a ready-made solution for use. It is essential that there is access to water where the business doses its products. There are systems which dose an equally large amount of concentrate each time they are pressed and then the water is added manually. Other dosage methods are using a dosing measure, measuring vessel or similar. Nordic Ecolabelling wishes to focus on the use of chemicals and the use of dosing systems better ensures that the correct dose is used.

As there are several types of business covered by the criteria, including small hotels and youth hostels, it is also permitted to use manual dosing systems with pumps, measuring vessels and similar. These businesses often use such small amounts of chemicals that an automatic dosing system is irrelevant. Where manual dosing equipment is used, instructions must always be provided and it must be ensured that the chemicals are dosed correctly.

P12 Automatic dosage of cleaning chemicals

To reward the businesses that have automatic pump systems, a points score requirement has been introduced.

Pump systems or the use of other dosing equipment is in itself not a guarantee that the correct concentrate and water ratio will be attained. An automatic dosing system is therefore better to ensure that more chemicals than necessary are not used.

P13 Dosage of dishwasher drying agents

Automatic dosing equipment ensures that no more chemicals are used than are necessary to ensure clean and hygienic dishwashing. As dishwashing chemicals account for the largest proportion of total chemical use in hotels and in restaurants, correct dosage of these chemicals is particularly important. There should be a distinction between dosing equipment for dishwasher chemicals (see O15) and for drying agents. The latter tends to be something included with the machine either as standard equipment or as additional equipment when purchased. An important aspect of the requirement is to ensure the correct dosage, and it is therefore important that the business ensures regular servicing of the dosing equipment.

P14 External textile services/laundries

Within the requirement, there are different point scoring opportunities, depending on the business, and on how it handles its laundry. Whatever the business, a maximum of 4 points is available in total. Accommodation businesses score four points for sending all textiles (with the exception of drying cloths and mops) to a Nordic Ecolabelled textile service/laundry. If the hotel business sends either bed linen or towels to a Nordic Ecolabelled laundry, two points are scored.

Restaurants score three points if a Nordic Ecolabelled laundry is used for all textiles (apart from drying cloths and mops).

Where a business washes all its textiles itself and where all washing machines used for this have automatic dosing equipment checked by an independent third party at least four times a year, one point is scored.

Washing of cleaning mops is not included in the requirement and no points are scored if the business washes its own mops as mops only account for a small amount of the volume to be washed.

Studies[71] [72] show that laundering textiles is one of the activities of an ordinary family that places the greatest burden on the environment. It uses water, energy and laundry chemicals. For hotels and restaurants, which give rise to even larger amounts of textiles which much be washed per person, in evaluating the importance of the activity, it is natural to assume an even greater impact. Nordic Ecolabelled laundries are subject to stringent requirements on laundry chemicals, energy and water use, waste, packaging and laundry quality. Today rewarding the use of Nordic Ecolabelled laundries is the best way of ensuring that textiles from hotels, restaurants and conference facilities are washed in the most optimum manner for the environment. Access to Nordic Ecolabelled laundries is good across much of the Nordic countries (with the exception of Finland). Note also the fact that the laundry is included in the total energy use of the business and the obligatory limit value is thus affected by whether the business does its own laundry or whether the laundry is Nordic Ecolabelled.

O17 Purchasing procedures – chemical products

This requirement is new to version 4 of the criteria and means that the businesses must have a purchasing procedure for their chemical products that shows that they comply with the requirements set for chemicals. The business must also appoint one person per department (e.g. cleaning, restaurant/kitchen and relaxation/pool department) who is responsible for purchasing chemicals. It is the person responsible for purchasing who must ensure that the purchasing procedure is complied with. When the person responsible for purchasing changes, the business must inform Nordic Ecolabelling and must also inform the person within the business who is responsible for the Nordic Ecolabel licence.

The person responsible for purchasing ensures that the business uses the selected chemical products as set out in requirements O10-O13.

Previous experience from hotels shows that it is important to have clear procedures in place for how chemicals purchasing is to be carried out and to have one person responsible for

[71] "Danske husholdningers miljøbelastning" report from the Danish Environmental Protection Agency No. 13, 2002, Copenhagen 2002 and
[72] "Miljøbelastningen ved familiens activiteter", Danish Competition and Consumer Authority, report 1996.1¸ Copenhagen 1996.

purchasing chemicals to ensure that the products purchased meet the requirements set in the criteria document.

O18 Handling of chemical products

To minimise the risk of unnecessary waste and overdosage and to minimise the risk of work-related injuries, there must be clear, easily comprehensible instructions easily accessible to staff such that they can easily ascertain the right dosage and handle the chemical products safely and correctly.

This requirement applies to chemical products for dishwashing, laundry, cleaning, disinfection and floor care.

An up-to-date list of all the chemical products used in the business, including area of use and handling must be documented and be held by every purchasing department manager and person responsible for the Nordic Ecolabel licence. The overview of chemicals in the guide can be used as a template.

5.1.10 Water

P15 Water consumption for dishwashers

The requirement has been tightened up compared with the previous versions for hotels and restaurants and the requirement now includes counter-top dishwashers. The requirement has been easy to comply with and contact with a producer confirms that the level can be made stricter.

In setting new requirement levels for water consumption, information has been obtained from the websites and product catalogues of different producers[73] [74] [75] [76] and we have contacted one producer.

For hood dishwashers, the requirement has been increased from 4.5 litres/cycle to 3.0 litres/cycle. For pass-through/flight dishwashers, the requirement has been increased from 2.5 litres/cycle to 2.0 litres/cycle. A requirement has also been introduced for counter-top machines with a proposed consumption limit of 2.0 litres/cycle. The requirement for counter-top dishwashers has been introduced as small restaurants may have this kind of machine.

The requirement must be documented by sending in technical data on the dishwasher's water consumption per cycle or confirmation from the producer stating the water consumption per cycle. There have been certain difficulties in documenting water consumption/cycle as this is not always stated in the product data sheets, but it is confirmed by both dealers and producers that this is the best and most reliable means of documenting water consumption. It is common for dishwashers to have two speed settings, the choice of which has a bearing on the water consumption per cycle. It should therefore be pointed out that water consumption at both speeds must comply with the requirement.

P16 Water-saving taps

[73] www.kromosrl.com
[74] www.winterhalter.co.uk
[75] www.metos.fi
[76] www.hobart.no

This requirement has been tightened up compared with the previous versions of the hotel and restaurant criteria.

Now 2 points are scored when at least 90% of the number of mixer taps for washbasins have a flow of a maximum of 5 litres/minute and 1 point if the flow is a maximum of 7 litres/minute compared with the previous 8 and 10 litres/minute. This requirement does not cover kitchen taps or bath mixer taps.

The decision to tighten up the criteria is based on information on flow per minute on the websites and in the product catalogues of various producers[77] [78] [79] and the fact that licensing has demonstrated that the previous requirement was easily complied with.

Water consumption varies but for those products stated to be water-saving, the flow is between 2.5 and 7 litres/minute. The tightening up of the requirement is based on this information and will reward businesses that have invested in water-saving taps.

The requirement is documented by information from technical data sheets or similar in which the water flow in litres per minute is stated or through confirmation from the producer stating the water flow in litres per minute. Where it is difficult to obtain this information, the requirement can also be documented by the hotel itself measuring the water flow per minute. In addition to this, an overview is to be sent in of the proportion of mixer taps with a maximum water flow of 5 or 7 litres/minute.

P17 Water-saving showers

This requirement has been tightened up compared with the previous version. In order to score 2 points, at least 90% of the number of showers must have a flow of a maximum 8 litres/minute, while a flow of a maximum 10 litres/minute scores 1 point. The requirement was previously for 10 and 12 litres/minute respectively. There are major opportunities to save water by switching to new showers or by fitting a shutoff valve to older showers. An old shower can consume as much as 24 litres of water per minute. A water-saving shower uses 6-10 litres of water per minute[80] [81]. Tightening up the requirements so that the showers that are within the current definition of "water-saving" can be used offers great potential for reducing water consumption.

The requirement is documented by information from technical data sheets or similar in which the water flow in litres per minute is stated or through confirmation from the producer stating the water flow in litres per minute. Where it is difficult to obtain this information, the requirement can also be documented by the hotel itself measuring the water flow per minute. In addition to this, an overview is to be sent in of the proportion of mixer taps with a maximum water flow of 5 or 7 litres/minute.

P18 Toilets

The opportunity to score points if a toilet has 2 flush options remains unchanged.

[77] www.grohe.no
[78] www.hansgrohe.no
[79] www.oras.no
[80] Grønn Hverdag, accessed 8 March 2011: www.gronnhverdag.no/nor/Bolig/Energi/Sparedusj/%28language%29/nor-NO
[81] ENØK, accessed 8 March 2011: www.enok.no/enokguiden/07_2.html

Information from producers shows that water consumption varies from 2-6 litres/flush using the two different flush options[82] [83]. Ifö states, for example 2 and 4 litres/flush for the two flush options, while Gustavsberg gives 3 and 6 litres/flush. Toilets with only one flush option generally have a higher water consumption per flush compared with the lowest consumption for toilets with two flush options. This shows that there are excellent opportunities to save water by having toilets with two flush options. This, however, does require that guests use the button that produces the lowest water consumption.

The requirement is documented in a list of the proportion of toilets with two flush options.

5.1.11 Waste

Amounts of waste can be reduced by encouraging sorting and recycling/reuse and by reducing the use of disposable items, for example. The requirement has been concentrated on supporting precisely this through a limit value (see the sections on limit values for water consumption and waste) and a sorting requirement.

O19 Sorting

In previous versions of the criteria for hotels, there has been an obligatory requirement that the business must sort waste into at least four of the following fractions: uncoloured and coloured glass, crockery, food/organic waste, fat/cooking oil, combustible waste, waste paper, corrugated cardboard, cardboard packaging, rigid plastic, soft plastic, metal, textiles and lamps.

In addition, 1 point was awarded for each fraction sorted out in addition to the four obligatory ones. A total of 4 points were available.

In version 4 of the criteria, the requirement has been changed so that it only includes an obligatory requirement to sort out the fractions that occur in large quantities. In its application, the business must report its four large waste fractions. These fractions are to be sorted and documentation must be submitted showing that the waste is sent for material recovery. Garden waste is to be composted in order for the fraction to be approved.

Note: Fractions that are not included in the list above are food waste/organic waste, crockery, batteries, lamps, metals, textiles and combustible waste. The reason for this is either that they are incorporated in other requirements, that the sorting of the fraction is a statutory requirement or that only small amounts occur at hotels, restaurants and conference facilities. Where food waste is sorted and sent for biological treatment/recycling, hotels receive 2 points and restaurants 3 points in P19. It is rare for waste such as crockery, batteries, lamps, metals and textiles to occur in large amounts, and combustible waste is practically the same as general waste that everyone has. Lamps and batteries are considered hazardous waste that the authorities require to be sorted out.
The opportunity to score points by sorting out more fractions has been removed. There are several reasons for this. One reason for removing the previous points score requirement is that there are major national differences in the way that the fractions are sorted. Norway, for example, does not differentiate between coloured and clear glass. Metals also go into the same container as glass. The separation of glass and metal is then carried out by the waste processor. This is a circumstance that the businesses themselves have little control over, and the

[82] www.ifosanitar.no
[83] www.gustavsberg.no

requirements should be adapted so that the geographical location does not affect how many points a business can score. The expansion of the product groups to take in restaurants and conference facilities brings greater variation between the establishments that apply for ecolabelling. This also means major differences in the types of waste that occur; at some establishments the operation generates many different fractions while other, less complex establishments will only be able to sort waste into a few fractions.
Finally, the number of fractions that the waste is sorted into is not, in itself, a measure of how good the establishment is at sorting its waste or how great the environmental benefit is. If the business chooses to sort fractions of modest amounts during normal operation, the environmental benefit is limited.

Nordic Ecolabelling wants its requirements for waste to ensure that as little waste is generated as possible. It is also important that the large fractions are sorted and processed with a focus on material recovery.

For fast food restaurants, it used to be specified that disposable articles were to be sorted but this has now been removed as steerability is low. The previous requirement for restaurants which stated that they should have instructions on sorting is included in requirement O33 on own checks and in requirement O20 on waste sorting for guests.

The previous requirement, for hotels and restaurants, where points are scored if the business has at least three suppliers who use returnable packaging has now been deleted, since it is generally met by all applicants.

O20 Waste sorting for guests

The requirement means that conference and hotel guests must have the opportunity to sort their rubbish into at least 2 fractions (excluding the residual fraction), or alternatively it must be sorted by the staff.

Previously it was obligatory for conference guests to be able to sort paper, while more fractions scored 1 point (0.5 points if the staff sorted the waste), while sorting in guest rooms scored 1.5 points (1 point if staff carried out sorting). It has now been specified how residual fractions are to be calculated and the points do not differ depending on whether it is the guests or the staff who sort the waste. The requirement has now been tightened by making it obligatory.

For restaurants, if customers sort their washing up themselves, there must be clear waste sorting instructions. This requirement remains unchanged but used to be under the sorting requirement. The requirement aims to reduce the amount of unsorted waste and is supported by the sorting requirement.

P19 Processing organic waste

Hotels and conferences score 2 points and restaurants score 3 points if organic waste is sorted out and sent for biological treatment/recycling as compost, for example, or is used to produce biofuel. The requirement scores a maximum of 3 points.

The requirement remains as a separate points score requirement as it covers a fraction of particularly major importance for restaurants, caterers and similar but the points score has been increased from 1 point. The text of the requirement has been modified such that all types of biological treatment/recycling are approved. Combustion of organic waste in incineration plants is not considered as biofuel in this document.

See also P33 for the points score requirement for measuring organic waste for restaurants.

5.1.12 Purchasing

The purchasing of ecolabelled products and services is constantly prioritised, as these are assumed to have a lower environmental impact compared with non-ecolabelled purchasing.

O21 Low energy lamps, fluorescent tubes and LEDs

When purchasing new low energy lamps and fluorescent tubes, the requirement is unchanged but a supplementary requirement has been introduced for LEDs which must have a lifetime of at least 25,000 hours. Alternatively the light sources are to be ecolabelled. The technology for new energy-efficient low energy lamps and LEDs is developing quickly and today there are major variations in testing methods, the quality of light sources and lifetime. When building new buildings or carrying out renovation work, the business can make major savings in choosing light fittings, the location of light sources and smart control systems.

O22 Ecolabelled kitchen roll, paper towel and toilet paper

The requirement is unchanged compared with the previous version of the criteria for hotels and restaurants. At least 90% of the volume of purchased tissue products, i.e. kitchen roll (kitchen towel), paper towel(s) and toilet paper must be ecolabelled.

The Nordic Ecolabel's environmental requirements for this type of paper products covers everything from forestry and the choice of raw materials to low energy consumption and low carbon emissions, cleaning emissions to air and water and control of the use of chemicals and eutrophying and acidifying substances such as sulphur and nitrogen oxides. It is still relevant to increase environmental benefits by setting requirements for a high proportion, by volume, of ecolabelled tissue purchased by the business.

O23 Ecolabelled photocopying paper

Today the requirement means that 90% of the business' purchased photocopying paper must be ecolabelled. The hotel criteria used to include a points score requirement (the same percentage scored 2 points) while the restaurant criteria used to include 1 point for purchasing at least 50% ecolabelled photocopying paper.

Ecolabelled photocopying paper means that the fibre comes from sustainable forestry and/or recycled paper. Labelling only with the PEFC or FSC logo is not sufficient, however, as these labels only cover the raw forest material. Paper labelled with the Nordic Ecolabel or the EU Ecolabel ensures that, as well as the raw forest material, the manufacturing process has low emissions to air and water. It is manufactured with efficient energy use and a limited amount of chemicals.

P20 Ecolabelled consumables

In general the requirement in this version of the criteria remains unchanged regarding percentages for the purchase of ecolabelled consumables compared with the previous version of the criteria. The previous restaurant criteria included a points score requirement on the purchasing of ecolabelled consumables and services amounting to half of the restaurant's requirement. The requirement is now set such that it is either 50% of the restaurant's requirement or 90%. Sometimes both levels are shown for one group of items but here different numbers of points apply (e.g. 1 point is scored if soap and shampoo are purchased amounting to 50% of the requirement and 2 points are scored if soap and shampoo are purchased amounting to 90% of the requirement or more).

A new addition is that points are scored for purchasing ecolabelled items such as toothpaste, shampoo and soap which the business offers for sale, for example in its hotel shop or at

reception. To score points, the purchasing must be equivalent to at least half of the total purchase of products offered for sale.

This requirement also incorporates a requirement on the purchase of ecolabelled soap and shampoo which was previously included as a separate requirement. The same applies to requirements on notepads, flip charts and pens, which were previously under a separate requirement for conferences.

It is not possible to score one point for ecolabelled bed linen and towels and simultaneously score 0.5 points because they are made from organic fibres.

O24 Ecolabelled printed matter

Here an obligatory requirement is now introduced stating that at least 50% of the total purchasing of printed matter ordered by the business must be ecolabelled and printed by an ecolabelled printing firm.

Similar requirements were previously found in both the hotel and restaurant criteria. In the hotel criteria, the requirement was worded such that different numbers of points were scored depending on whether the business purchased a certain proportion of ecolabelled printed matter (here there were two requirement levels) or whether they purchased printed matter from an ecolabelled printing firm without the printed matter itself necessarily having to be ecolabelled. This has now been combined in this version of criteria. For restaurants it was previously the case that they scored points if they purchased ecolabelled printed matter amounting to at least half of their total requirement.

Printed matter refers to, for example, advertising, brochures, writing paper and other stationery carrying the hotel logo, plus all the forms used at the hotel for dry cleaning and room service, etc. The requirement also covers the printed matter that the hotel chain orders centrally.

Note that ecolabelled printed matter must be actively requested when ordering. Even if the printing firm has a Nordic Ecolabel licence, the printed matter is not necessarily automatically ecolabelled. The person responsible for purchasing is responsible for ensuring that the Nordic Ecolabel logo and licence number are shown on proofs before approval and printing. If the logo is not shown, the person responsible for purchasing must contact the printing firm and request that this be changed. The alternative text "Ecolabelled printed matter" and the licence number, can replace the Nordic Ecolabel logo.

P21 Ecolabelled printed matter

In addition to the obligatory requirement on printed matter (see O24 above) a points score requirement has been introduced where points are scored if at least 90% of the total purchasing of printed matter ordered by the business is ecolabelled and printed by an ecolabelled printing firm.

P22 Ecolabelled durables

The requirement on durable goods has been tightened up slightly both in terms of the percentage limits for which points are scored and the number of points scored. The business can score a maximum of 4 points on this requirement.

For example, points are now scored for purchasing of ecolabelled projectors amounting to at least half of the business' requirement. This concerns purchasing special technology primarily

for conference promises, such as ecolabelled audiovisual technology. See the Nordic Ecolabelling criteria for audiovisual equipment.

The points system previously shown in the restaurant criteria remains unchanged.

Our experience shows that there is an increased interest from purchasers at hotels, conference facilities and restaurants in buying more high-quality ecolabelled durable goods with a long lifetime.

P23 Ecolabelled services

The points score requirement remains largely unchanged from the previous versions of the hotel criteria and the restaurant criteria. One difference is that ecolabelled cleaning services now score two points rather than one. The change is justified by the fact that this is a frequently recurring activity which thus has a major environmental impact and should therefore be encouraged. The aim is to increase the proportion of purchasing of ecolabelled services and our experience shows that there is increased demand, for ecolabelled cleaning services in particular. The business can score a maximum of 2 points on this requirement.

5.1.13 Accessibility

P24 Accessibility

The previous criteria document for hotels and youth hostels included a requirement for "rooms adapted for the physically disabled". Nordic Ecolabelling has now expanded this requirement to cover all kinds of establishments. The requirement means that if the business has been adapted for people with impaired mobility or orientation capacity, one point may be scored with the approval of Nordic Ecolabelling.

Where public premises, etc. are being constructed, they must by law be adapted such that they are accessible and usable by people with impaired mobility or orientation capacity. It is the developer who is responsible for ensuring that the law is complied with and a supervisory authority is responsible for checks.

For existing buildings, it is generally the case that premises to which the general public have access (which also covers hotels, restaurants and conference facilities) must by law be adapted to people with impaired mobility or orientation capacity[84]. Action must therefore be taken regarding obstacles which it can be considered reasonable to remove in terms of the benefit of the measure and the situation on site. These are known as "easily eliminated obstacles". The financial consequences must, however, not be unreasonably burdensome. In existing premises, it is the owner of the property who bears the responsibility for compliance. One problem today is the application of the law and the fact that the supervisory authorities have limited resources, with the result that the law is often circumvented.

Legislation in this field and the approach to the guidelines that should apply is fairly homogenous in the Nordic countries. In Norway certain accessibility standards have been drawn up and several organisations have produced action plans and guidelines to help businesses to adapt premises as above[85]. Although it is the property owner who bears the

[84] http://www.boverket.se/Bygga--forvalta/Enkelt-avhjalpta-hinder/Regler/
[85] http://www.handisam.se/e-tjanst/

responsibility for accessibility, the hotel and restaurant industry generally also encourages tenants to take responsibility on these issues[86].

Checklists[87] that can be obtained from authorities and organisations in Sweden recommend first tackling what are termed "easily eliminated obstacles" and drawing up a to-do list of measures planned for the longer term. This may be a good level in assessing the approved points score. Comparable checklists are also available from the authorities and organisations that deal with accessibility issues in each country.

[86] http://www.shr.se/Branschfragor/branschfragor1/Tillganglighet/
[87] http://www.handisam.se/e-tjanst/

5.1.14 Serving food and drink

O25 Disposable items

Compared with the previous version of the hotel criteria, the requirement now covers all areas in hotels, restaurants, including outdoor areas, and conference facilities. Only take away sales are exempt from the total prohibition on disposable items.

It is no longer permitted to use tablecloths which can be used for extended periods, as it has proved difficult to define what an extended period is and we want to focus on requirements which minimise elements that guests may perceive as environmentally problematic.

Because the bar is also included, exceptions are made for straws and cocktail sticks handed out in person.

As was previously the case, exceptions may be made if the dishwasher is out of order or an exceptionally large number of guests are expected. These cases must be justified and approved by Nordic Ecolabelling.

The sale of ready-made products in individual portion packs, such as ice cream and chocolate is permitted.

O26 Disposable items for take away, catering and fast food establishments

It has been judged that the Nordic Ecolabel can do the greatest environmental good by not excluding this type of businesses but instead setting strict environmental requirements on the materials used. The limit for the smallest amount of renewable materials in disposable items has been raised from 67% to 75%. This means that a maximum of 25% can come from fossil oil or other non-renewable materials.

P25 Ecolabelled disposable items

This requirement scores 1 point if 20% or more of the volume of disposable items purchased by take away, catering and fast food outlets are ecolabelled.
The criteria for ecolabelled disposable items have not yet been decided but will be in place when this criteria document enters into force.

O27 Minimum proportion of organic food and drink for hotels serving breakfast (not fish and shellfish)

The purpose of the requirement is to increase the proportion of organic food in the business. The requirement means that where hotels serve breakfast, at least 5% of their annual purchasing volume must be organic, or alternatively at least 10 products served during breakfast must be organic.

For the justification behind this requirement, see requirement O39.

For all hotels, this requirement is more stringent compared with the previous version, in that there is an obligatory limit for the proportion of organic food at the hotel which did not exist previously. As the requirement has been increased quite considerably for certain countries (Finland and Norway, for example, go from having scored points for 3 products to an obligatory requirement of 10 products at breakfast) we will be generous in the way in which the number of products is calculated. Coffee, tea and spices may only be counted as one product each, while milk with different fat contents will be counted as different products.

5.1.15 Transport

Few hotels and restaurants have their own vehicles for transporting staff and goods, but this is more common for restaurants with major catering operations and conference facilities. The establishments normally have established subcontractors who drive for them. For this reason, the requirement covers both the establishment's own vehicles and established subcontractors.

O28 Transport using own vehicles (catering businesses)

This requirement is new and applies to all establishments which own and use their own vehicles and other vehicles for various transport, in other words it is not only intended for facilities that run conferences or restaurants that carry out catering. However, the requirement has been set particularly bearing in mind businesses that cover, for example catering, and which regularly use their own vehicles. The requirement means that the business' drivers must be trained in eco-friendly/economical driving. New employees must have been trained within six months. The business must have procedures in place to ensure that new employees receive training. It is the training organisation/supplier which must document that the drivers have received such training.

The Swedish Transport Administration has drawn up criteria for what they consider training in eco-friendly/economic driving should contain and the results that should be achieved[88]. This states that such training must have documented good effect on fuel consumption (on average a 10% reduction for cars and 8% for heavy vehicles) in densely populated areas. It also states a number of practical and theoretical elements that should be included. These criteria can serve as support for those procuring such training.

The requirement is derived from criteria for textile services where a corresponding requirement is set for the transport of laundry to and from customers, a requirement which has proved to work well.

P26 Other transport using own vehicles

This requirement scores 1 point if 5% or more of the vehicle fuel that the business purchases is Nordic Ecolabelled. This requirement is entirely new and opens up an opportunity for all businesses to score points if they reduce their environmental impact by choosing Nordic Ecolabelled fuel. The requirements must be documented by the business sending in a specification of the total amount of purchased fuel and the proportion of Nordic Ecolabelled fuel showing that the requirement above has been met.

P27 Other transport (not using own vehicles)

In version 1 of the criteria for restaurants a points score requirement was set on whether measures had been introduced to significantly reduce the environmental impact of the establishment's deliveries to and from the business. This now covers all types of business.

Through various measures, emissions can be reduced by reducing the total need for transport, by sharing vehicles and transporting as many deliveries as possible in the same vehicle and by influencing route planning together with suppliers. The type of fuel the vehicle uses is also important, as is how it is driven and how fuel-efficient the vehicle is. Producing a survey of

[88] http://www.trafikverket.se/Foretag/Trafikera-och-transportera/Trafikera-vag/Sparsam-korning/Trafikverkets-kriterier-pa-utbildningar-i-sparsam-korning/

transport can help to produce a lower environmental impact. Points can be approved by Nordic Ecolabelling if the establishment can demonstrate documentation that its need for transport has reduced considerably.

5.1.16 Procedures

O29 Statutory procedures

This requirement retains the same wording as was used in the restaurant criteria. For hotels with restaurants this means that it has been clarified that they must not have any negative comments from authorities that have not been tackled within the deadline issued by that authority.

O30 Information about the Nordic Ecolabel for staff

This requirement has been reworded but generally follows the current requirement in the restaurant criteria. The requirement means that all staff must be given information on the requirements of the Nordic Ecolabel and the environmental improvements that the business is carrying out. As was previously the case in the restaurant criteria, new employees must be informed of this within 14 days. The requirement covers all employees, including temporary staff. For hotels, this requirement is less stringent as the section covering staff training on environmental issues has been removed.

O31 Guest information

This requirement has been reworded compared with previous versions of the criteria both for hotels and restaurants. It is now required that the business clearly provides information that the business is Nordic Ecolabelled, on-site and on websites, e.g. through advertising material. Restaurants were previously to inform customers of the importance of ecolabelling for the restaurant's work to improve the environment. This has been removed as it is hard to assess and hard to document. Previously fast food and take away businesses had to provide visible information on the restaurant's work to improve the environment at the till. This was to particularly highlight measures to reduce the use of disposable items. Catering businesses which used disposable items were also to similarly inform customers.

O32 Purchasing and supplier procedures

Because the business is responsible for ensuring that the Nordic Ecolabel's requirements are met throughout the period of validity of the licence, the business must have procedures in place for purchasing the products subject to these requirements. The procedures must as a minimum cover consumables (requirements O21, O22, O23, O24), organic food and drink (O27 for hotels with breakfast, O39) and change of supplier for printing firms and laundries. For organic food and beverages it is sufficient that regular monitoring of the amount of organic products is carried out.

Regular means monthly monitoring at least 4 times a year during months that are representative of the business. The requirement must be documented through a purchasing and supplier procedure.

O33 Own checks on environmental work

The requirement is completely new and means that the business must gather and process complaints from guests and, at least once a year carry out its own check (audit) on the business with the aim of improving work on the environment. A check plan must be drawn up including at least the following points:

- Complaints.
- Check that information for guests is visible.
- Checks that the waste sorting instructions for guests and staff are clear.
- Checking what energy-demanding equipment is present.
- Check that no prohibited disposable items are used.

O34 Annual follow-up

The businesses must carry out a follow-up of the Nordic Ecolabel's requirements every year. Nordic Ecolabelling may request a written report on environmental requirements or on-site checks.
This requirement need not be documented at the time of application.

O35 Documentation on Nordic Ecolabel requirements

This requirement means that all documents concerning the Nordic Ecolabel licence must be easily available at the business and that the person responsible for the licence in the business is responsible for ensuring that the documentation is kept up to date and easily accessible. The only difference compared with the previous requirements is that the documentation need only be accessible rather than having to be gathered in one place.

5.1.17 Food

The background document to Restaurants Version 1[89] contains detailed descriptions of food's environmental impact. This concerns environmental problems linked to agriculture – e.g. energy consumption, herbicides, eutrophication, greenhouse gas emissions, use of genetically modified organisms (GMOs) – production/processing of food, transport, cooling and freezing, and preparation. Some species are threatened with extinction and/or face an enormous negative environmental impact. Instead of eating vegetables that are seasonally available, we eat others that are imported long distances and/or grown in greenhouses with major energy consumption.

The Nordic Ecolabel works to reduce the environmental impact of food in several different ways. Firstly, the Nordic Ecolabel requires that a certain proportion of the raw ingredients used by the restaurant are organic and additional use of organic food is rewarded. Secondly, the use of fish and shellfish which are either threatened with extinction or whose farming/fishing is extremely harmful to the environment is prohibited and restaurants are rewarded if they do not use other problematic ingredients. In addition to this, the Nordic Ecolabel also works to increase the use of vegetarian ingredients, at the expense of meat and fish. The former points score requirement that gave points for a vegetarian meal has become obligatory and a new points score requirement has been produced. New areas where the Nordic Ecolabel is setting criteria are the use of bottled water and the treatment of organic waste.

Finding ways of reducing the amount of organic waste through ecolabelling has been difficult. Several different alternatives have been discussed. The Nordic Ecolabel has not incorporated the proposal that restaurants should offer "doggy bags" so that guests can take their leftovers home with them, because the environmental benefit is doubtful as it increases the consumption of disposable materials.

[89] About Nordic Ecolabelled Restaurants Version 1, Nordic Ecolabelling, December 2006

Measuring amounts of organic waste and setting a limit value is the most appropriate way of limiting waste. However there is a limited opportunity for the business to measure the amount of organic waste and compare it with the amount of ingredients purchased. See more information in the section RPS, "Food and drink", Limit values for water consumption and waste, the section on Waste and requirement P33 Waste in restaurants.

As previously, the requirement is set to minimise the use of disposable items.

The requirements in this chapter apply to all types of restaurants and cafés but do not cover hotels which only serve breakfast. Some hotels have a very simple kitchen which in principle only heats up ready-made meals. These are not classified as restaurants.

O36 Origin of meat and fish

This requirement is based on the restaurant being able to inform guests of the country of origin for the meat and fish served as main ingredients. The new criteria propose limiting the extent to only apply to meat and fish due to the minimal environmental gains in combination with the major administrative burden involved in fulfilling the requirement (previously the requirement also covered main ingredients in the form of potatoes, pasta and beans, for example).

O37 Non-sustainable ingredients – fish and shellfish

Ingredients from species that are threatened with extinction and/or whose production has a major negative environmental impact must not be used in Nordic Ecolabelled restaurants. In this revision, Nordic Ecolabelling has maintained a special focus on marine ingredients. Nordic Ecolabelling would also have liked to set requirements for meat as an ingredient, since meat production has a considerable environmental impact. However, Nordic Ecolabelling has decided that restaurants currently have little scope to influence the environmental impact of meat. In a future revision, we will reconsider proposals for requirements in other food groups. We do, however, have indirect requirements concerning meat in that we promote vegetarian alternatives, which have no environmental impact, and we promote organic foods with a focus on animal welfare.

The marine ecosystem is exposed to a number of different threats, such as overfishing, eutrophication, pollution and climate change. Over 70% of the marine fishing areas are considered to be overfished or completely exploited.

Nordic Ecolabelling has reviewed the possibility of banning particularly damaging fishing practices that have a major impact on the environment. Such fishing practices include bottom trawling and particularly outrigger trawling, since they have a considerable effect on the seabed and the bycatch is large. The problem is a lack of traceability regarding the fishing practice used, which would mean poor steerability for such a requirement.

Nordic Ecolabelling has therefore produced a list of fish and shellfish that are particularly vulnerable and must not be served in Nordic Ecolabelled restaurants. The purpose of the fish list is to be able to avoid serving non-sustainable fish and shellfish. The list of species is based on an overall assessment of information from various sources, including the IUCN (International Union for the Conservation of Nature), the national red lists of the Nordic

countries and OSPAR's list of endangered and/or vulnerable species[90]. The national red lists are drawn up as commissioned by authorities in respective countries and list the risk of species dying out in an area. This can mean that the same fish species may be listed as being at risk in one country but not in another. Note that Denmark and Iceland do not have any red lists of marine fish and shellfish species.

The fish that are judged to be non-sustainable ingredients are those that are classified as "Endangered" or "Critically Endangered" according to the internationally adopted criteria of the International Union for the Conservation of Nature (IUCN).

The serving of certain species with a low reproductive rate and certain deep sea species (shark, catfish, halibut, redfish, monkfish, witch flounder) is also prohibited in principle, since these species mature late in life, and therefore are less capable of recovery through reproduction.

There is a general lack of information on how sustainable these fish stocks are. The EU started regulating deep sea fish stocks in 2002 through its Total Allowable Catch (TAC) system, but there has yet to be a detailed review of how effective the regulation has been. The regulation of deep sea species through TAC is a challenge, since knowledge of the deep sea fish stocks is limited. In addition, the fishing practices tend to have major environmental effects.[91] [92]

Nordic Ecolabelling's list of fish and shellfish that must not be served is divided into two sections, A and B.

A. The following fish and shellfish species in section A must not, in principle, be served at Nordic Ecolabelled restaurants:
    - Sharks. The ban covers all species of shark, based on the fact that many species are endangered globally. In Nordic terms, the species spurdog, porbeagle and basking shark (Squalus acanthias, Lamna nasus, Cetorhinus maximus) are classified as endangered and critically endangered by the IUCN, Sweden and Norway (basking shark is not included on the Norwegian list) and they are also on OPSAR's list.
    - Redfish (Sebastes mentella, Sebastes marinus). Has low reproductive rate.
    - Skate (Dipturus sp./Raja sp.) The majority of skate species are classified as critically endangered to near threatened by the IUCN, Sweden and Norway and they are included on the OPSAR list.
    - Tuna, both bluefin and southern (Thunnus thynnus and Thynnus maccoyii). Classified as endangered and critically endangered respectively by IUCN. Bluefin tuna is also on the OSPAR list.
    - Eel (Anguilla anguilla). Classified as critically endangered by IUCN, Sweden, Norway and Denmark. Eel is also on the OSPAR list.
    - Tropical prawns i.e. scampi/tiger prawns/king prawns/giant prawns (the penaeid family: Penaeus sp., Metapenaeus sp. and Macrobrachium rosenbergii)[93]. Must not be served because the fishing and farming causes major environmental problems (this ban

[90] OSPAR is an organisation in which fifteen European governments and the European Community work together to protect the marine environment in the north-east Atlantic.
[91] Villasante et al., 2012. Sustainability of deep-sea fish species under the European Union Common Fisheries Policy. Ocean & Coastal Management. In Press, Corrected Proof.
[92] Swedish Society for Nature Conservation. 2012. Fula fiskar i fina diskat – om fiske på djupa vatten.
[93] These are approved if they are labelled with a sustainability label approved by Nordic Ecolabelling.

is in line with the earlier version of the criteria for restaurants – further justification of the requirement can be found in the background to the previous criteria).

B. Fish species in section B may not be served in a Nordic Ecolabelled restaurant, if they appear on the country's official red list of endangered species. If they are not on the endangered list, they may be served as long as they are fished in national waters in accordance with national regulations and quotas, and if the restaurant can show good traceability to the fishing:

- Catfish (Anarhichas lupus)
- Halibut (Hippoglossus hippoglossus/Reinhardtius hippoglossoides)
- Monkfish (Lophius piscatorius)
- Witch flounder: deep sea fish (Glyptocephalus cynoglossus)

The purpose of permitting the serving of fish on list B under controlled forms is that there may be sustainable stocks of these fish locally. Restaurants that can show that they have good traceability back to the fishing and can check that the fishing takes place in line with statutory regulations may therefore serve these species.

Fish and shellfish (both from list A and list B) that is *farmed* or *wild-caught* and labelled as sustainable or organic may be used if the standard and certification system meet Nordic Ecolabelling's guidelines for assessing sustainability labelling of fish and shellfish, see more in requirement P29. Organic means that fish and shellfish are labelled in line with EU Regulation (EC) No 834/2007. This requirement will involve Nordic Ecolabelling comparing a number of fish and shellfish standards (such as KRAV/Debio, MSC, ASC) against its guidelines for sustainable fishing.

The list of fish and shellfish that are prohibited/restricted (sections A and B) may be revised if new information emerges during the period of validity of the criteria, in other words species may be added or removed.

O38 Ban on the use of food containing GMOs

GMO means genetically modified organisms (or plants, animals or microorganism) that have been given one or more external genes added with the help of genetic technology. GMO may be used in areas such as research, pharmaceutical production and agricultural and food production. The GM crops mostly commonly grown in the world are soya, maize, rapeseed and cotton[94] but rice is also in the process of being grown commercially[95]. GM plants are used in agriculture since the use of gene technology in plant cultivation can give crops properties that cannot be achieved using other methods. The most common such properties are to make a plant tolerant to herbicides and to make the plant more resistant to insect attack. The purpose is to reduce the use of biocides and to allow plough-free cultivation.

Gene technology is also used to produce crops with better nutritional content. For example, rapeseed has been developed with better oil yield and rice that contains more vitamin A. Other areas where gene technology and genetically modified microorganisms (GMM) are applied is in the production of vitamins, amino acids and enzymes that are then used in the food industry.

[94] http://www.gmo-compass.org/eng/agri_biotechnology/gmo_planting/144.gmo_cultivation_area_crop.html (08.05.2012)
[95] http://www.gmo-compass.org/eng/database/plants/64.rice.html (04.10.2012)

The EU and Norway are judged to have the strongest legislation on GMO[96]. Under the EU's legislation on GMO products, the European Food Safety Authority (EFSA) is required to conduct a risk assessment of whether a GMO/GMM product is as safe to eat as a conventional product. Similarly, an assessment is made of the negative consequences that growing a specific GMO crop may have on the environment.[97]

Within the EU, a few genetically modified plants are approved for use in food production, including soya, maize, rapeseed and sugarbeet. In total, there are just under one hundred food products that contain ingredients from approved genetically modified plants in the EU.[98] In addition, animal feed may contain GM crops, since soya and maize are major feed crops and the import of maize and soya to the Nordic countries is extensive.

Effects of GM crops

Over a short time horizon, the positive effects of GM crops are increased yield/harvest. Over a slightly longer timeframe, knowledge of the consequences is more uncertain[99]. The main negative environmental consequence related to GM crops is pollution (both chemical and genetic)[100]. This has, for example, led to a steep rise in the development of herbicide resistant weeds[101]. Herbicide resistant weeds can lead to increased use of herbicides. In the longer term, it might also lead to the use of extremely hazardous biocides. Biotechnology companies are also starting to develop new strains with genes that bring resistance to more herbicides[102]. Other negative consequences related to the growing of GM crops are a risk of reduced[103]:

- biodiversity
- local food supply
- knowledge about seeds and seed rights
- conservation of locally adapted species

Labelling GMO products

EU legislation sets strict requirements concerning the labelling of food and feed as containing genetically modified organisms, GMO. All the products that comprise, contain or have been made from GMO are to be labelled (a contaminant level of 0.9% GMO in the product is permitted). Foods that are made from GMO but that through various processes no longer contain any DNA from a GMO must also be labelled, e.g. tomato purée, corn starch and rapeseed oil. However, additives such as enzymes, amino acids and vitamins do not need to be labelled when they are produced in a closed system with the help of GMM (genetically modified microorganisms) and where the specific additive has been stripped out so that the end product does not contain any microorganisms. Meat, milk and eggs from animals that

[96] Catacora-Vargas, 2011. Genetically Modified Organism – A summary of Potential Adverse Effects Relevant to Sustainable Development. Biosafety Report 2011/02. Genok – Centre for Biosafety Tromsø, Norway.
[97] Swedish National Food Agency. 2012. http://www.slv.se/sv/grupp1/Marknin g-av-mat/Genmodifierad-mat-GMO/ (07.05.2012)
[98] Swedish National Food Agency. 2012. http://www.slv.se/sv/grupp1/Marknin g-av-mat/Genmodifierad-mat-GMO/ (07.05.2012)
[99] IAASTD International Assessment of Agricultural Knowledge, Science and Technology for Development. 2009. Agriculture as the Crossroads Synthesis Report. Island Press, Washington DC
[100] IAASTD International Assessment of Agricultural Knowledge, Science and Technology for Development. 2009. Agriculture as the Crossroads Synthesis Report. Island Press, Washington DC.
[101] Heap, I. 2012The International Survey of Herbicide Resistant Weeds. Online. www.weedscience.com (10.05.2012).
[102] Meyer & Cederberg. 2010. Pesticide use and glyphosate resistant weeds – a case study of Brazilian soybean production. SIK-Rapport Nr 809. SIK. Gothenburg.
[103] IAASTD International Assessment of Agricultural Knowledge, Science and Technology for Development. 2009. Agriculture as the Crossroads Synthesis Report. Island Press, Washington DC.

have been raised on genetically modified feed are not genetically modified products and therefore do not need to be labelled[104] [105].

Caterers and restaurants are also covered by the requirement to submit information on demand about the occurrence of GMO in food (Article 12 in (EC) No 1829/2003). If the caterer or restaurant sells prepacked products, they have to be labelled in line with the requirements in the GMO regulations.

Requirement regarding GMO
Nordic Ecolabelling has chosen to tighten the requirement regarding GMO by prohibiting the use of ingredients produced using genetically modified microorganisms (GMM) or made from GM crops. Meat from animals raised on GM crops is not included in the requirement, since there is no steerability for Nordic Ecolabelling's checks. Nordic Ecolabelling would only like to prohibit products made from GM crops and not products produced with the help of GMM. Nordic Ecolabelling believes that it would be too complicated for hotels and restaurants to determine whether there are GM crops in a product or whether GMM have been used in production.

The ban is based on the precautionary principle. GMO is a much debated subject, not least when it comes to food safety and land use. Other important areas in which there is a lack of knowledge are the long-term effects of GM crops on local agricultural/forest environments, the risk of negative environmental and health consequences, and so on.

To ensure that the restaurant has control over potential use of GMO, the restaurant must in the application describe how it is checked whether the ingredients for raw materials contain GMO.

O39 Minimum proportion of organic foodstuffs and beverages (not fish and shellfish) – for restaurants, and
P28 Organic food and beverages (not fish and shellfish)

The purpose of the requirement is to increase the proportion of organic food in the business. Finding the right levels of organic food is not entirely easy but we have taken the development of the organic market as the starting point for this work, see the explanation below. The market has moved forwards in all countries, despite the economic crisis.

For all hotels with restaurants the requirement will be more stringent compared with previous versions, in that there will be a obligatory limit on the proportion of organic food which did not exist previously. Hotels that only serve breakfast will gain a more generous limit value and businesses that work with restaurants; see requirement O26 in the section on "Serving food and drink" for the rules that apply for hotels which only serve breakfast.

The Danish limit value for restaurant businesses is lower compared with the previous version of the restaurant criteria and is now set at the same level as for Swedish restaurants, which is 5% (now for both hotels and separate businesses). Although this is a lowering of the requirement levels for the Danish "separate" restaurants, it is a more stringent criterion for hotels with restaurants.

[104] Swedish National Food Agency. 2012. http://www.slv.se/sv/grupp1/Markning-av-mat/Genmodifierad-mat-GMO/ (07.05.2012)
[105] GMO-compass. 2005. http://www.gmo-compass.org/eng/database/e-numbers/206.citric_acid.html (09.05.2012)

For Sweden the requirement has been tightened up, changing from 3% to 5% of the annual volume purchased. In Finland, Iceland and Norway the limit is tightened from 1 organic food/drink as a main ingredient served regularly to the new requirement that five organic products are served daily. Restaurants can also score many points by increasing their proportion of organic food.

In line with the same argument, the percentage limit for scoring points on the proportion of organic food has been increased for all countries, apart from Denmark where the percentage limit has been lowered also for the points score requirement. Compared with the current criteria for restaurants, the tightening up of the requirements made are quite minor. However, the requirements are a considerable increase compared with the current hotel criteria. It has been very difficult to set exact limits because access to organic products is not particularly highlighted for restaurants.

In this draft for consultation, organic means food and drink (but not fish and shellfish) labelled under the EU's Regulation EC 834/2007 or KRAV, Luomu, Debio, Statskontrollerat ekologiskt (Ø-märket) and Tún-lífrænt.

Fish and shellfish have been removed from this requirement as it is judged to be a food group which should be afforded special attention. Regarding requirements for fish and shellfish, see further details in requirement P29 "Proportion of fish and shellfish labelled as sustainable".

The organic market

The global market for organic food has grown considerably since 2000 and according to the British analysis company Organic Monitor more than tripled up to 2009[106]. However, the economic crisis has had a negative impact on growth, something that was particularly evident in 2009. The Nordic markets have not been affected as negatively as certain other markets. The German organic market, which is the largest in Europe, showed no growth whatsoever during 2009. The organic markets in Sweden and France, on the other hand, grew by over 15%. In total the organic world market grew by approximately 5% in 2009.[107]

The use of organic food reduces the amount of herbicides and artificial fertilisers and the food is produced in a way that is sustainable in the long term. Nordic Ecolabelling also considers that from a credibility point of view, it is important that a Nordic Ecolabelled restaurant always serves a certain proportion of organic food.

Although the market for private consumers has grown considerably, access can be limited for private restaurants, where it remains difficult to find products in suitable pack sizes and semi-finished products.

Denmark

The organic market is largest in Denmark compared with the other Nordic countries. In 2010 approximately 7.5% of the market was organic[108]. The Danes spend the most in the world on organic food, EUR 139 per person per year[109]. Due to the economic crisis, the proportion of

[106] http://www.ekomatcentrum.se/index.htm
[107] The GLOBAL Market for ORGANIC Food & drink:
Business Opportunities & Future Outlook (3rd Edition), December 2010 (http://www.organicmonitor.com/)
[108] Organic Market Memo January 2011, http://www.organicdenmark.dk/
[109] http://www.organicdenmark.dk 2011

organic farming has reduced. Figures from 2009 show that 137,000 hectares, equivalent to 5.2% of the total agricultural area, was organic[110]. Despite this, availability remains good.

The figures above are average figures for many types of food: dairy products, meat, vegetables and grain products, with short and long shelf-life. During the period of validity of the hotel criteria, several hotels with major restaurant kitchens stated during licensing that this average value is not entirely relevant to be used as a basis for determining an organic limit value on the amount of organic products in a restaurant. The reason for this is that it is primarily grain and dairy products that give rise to the high proportion of organic food and that this works well for the requirement criteria for a hotel breakfast but that these are not the ingredients that are used in large quantities when cooking a conference dinner. In addition to availability, price also has an impact, which is naturally most significant for meetings, conferences and similar where it must be included in the quote before the event is booked.

Finland
Of Finland's agricultural area, 7.5% is used for organic production. The organic farms are slightly larger than the average. Only just over 6% of all farms are covered by the monitoring of organic production. Of these just under 4,000 farms, over 500 also have organic animal production. The cultivated area and the number of animals in organic production has increased in recent years.

The availability of organic food has improved in Finland in the past year. Growth in the market was +19% from 2007 to 2008 and the total market was worth EUR 74 million (1%) in 2008. Finnish consumers still purchase relatively small amounts of organic food, 0.8% of purchasing in 2005 and 0.9% in 2009. (Source: Ruokatiedon Luomutiedotus/Nielsen Kuluttajapaneeli[111].)

Although access to organic food has not changed very much over a longer period, we have seen higher availability and demand in recent years and this means that it is justified to tighten up the limit for organic food slightly.

Norway
In 2009 the proportion of organic food was approximately 1% of the total food market in Norway. In previous years the market grew considerably, with several years demonstrating growth over 25%, but in 2009 growth was only 7.6%, according to a report from The Nielsen Company. Major interventions are required to reach the government's target of 15% in 2020[112].

Here too, availability of organic food has increased over a longer period and although this increase has tailed off in recent years, we consider that there are sufficient grounds to tighten up the limit value for organic slightly.

Sweden
In Sweden the organic market represented 3.5% of total food sales in 2011, an increase of 0.4 percentage points on the previous year. In 2009 the proportion of organic food was up 18%,

[110] NYT fra Danmarks Statistik, Nr. 154 • 4 April 2011
[111] Ruokatiedon Luomutiedotus/Nielsen Kuluttajapaneeli 2011
[112] http://www.oikos.no/ 2011

which must be seen in the context of an increase in 4% of the total food market during the same period[113].

The proportion of certified organic farming in 2010 was just under 11% of the total agricultural market. If land in transition to organic production is included, the figure rises to 14% of the total agricultural land[114]. This is considerably more than the Danish area of approximately 137,000 hectares (see the section on Denmark). Despite this, availability of organic food is considered to be higher in Denmark.

On the basis of this, it is proposed that the minimum level for purchasing organic food in the new criteria for Sweden should be raised from today's 3% to 5%.

We no longer approve the Finnish "Steps to Organic" (Portaat Luomuun) label for restaurants as documentation that the criteria have been met. The reason for this is that this system no longer checks that the number of organic products reported is correct.

Exceptions for businesses with a large bar or nightclubs

In the previous version of the criteria for hotels, organic purchasing was an optional points score requirement. A restaurant which had an ancillary business such as a nightclub could exempt this business as it did not fall under the definition of a restaurant. In this version of the criteria it is obligatory to include all purchasing of organic food and drinks in all sub-businesses included under the same business. This now means a drastic change to the conditions for meeting the requirement on the purchasing of organic food for some businesses.

When alcohol purchasing is extremely high in relation to the amount of food purchasing, the consequence may now be that the purchasing of organic food and drink is no longer relevant as it is the purchasing of beer, wine and spirits that is decisive to attaining the level of organic purchasing required. This mainly has to do with the differences in pricing set for food and alcoholic beverages respectively.

With the justification that food purchasing has a high RPS for restaurants and that the new criteria may have consequences as described above, we have decided that sub-businesses with a disproportionately high proportion of alcohol purchasing may exempt their alcohol purchasing from the total annual purchasing volume of food and drink. By "disproportionately high" we here mean that the purchasing of alcohol amounts to 70% of total food and drink purchasing. This is conditional upon this concerning an ancillary business such as a bar or nightclub and that the turnover can be accounted for separately and does not cover beer, wine and spirits bought in and served in the restaurant section in conjunction with serving food.

P29 Proportion of fish and shellfish labelled as sustainable

One point is scored by businesses where, of the total wild-caught fish, shellfish and farmed salmon served, 10% is wild-caught fish or shellfish and/or farmed salmon (Salmon sp) that is labelled as sustainable under standards approved by Nordic Ecolabelling and 2 points are scored if the proportion amounts to 15% or more.

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[113] Ekoweb. 2012. Ekologisk livsmedelsmarknad - Rapport om den ekologiska branschen sammanställd av Ekoweb.nu 26 January 2012.
[114] Swedish Board of Agriculture (2011). Skörd för ekologisk och konventionell odling 2010. Sveriges officiella statistik, Statistiska Meddelanden SJV JO 16 SM 1102.

In recent years environmental problems concerning fish and fish farming (aquaculture) have attracted an increasing amount of attention. Several fish stocks are threatened with extinction as a result of overfishing, the use of bottom trawling destroys the ecosystem on the sea bed and fish farming produces local emissions of antibiotics and nutrients, as well as problems in that the farmed fish escape. Nordic Ecolabelling wishes to contribute towards positive development of the fishing industry and therefore seeks to encourage increased use of fish and shellfish that are certified under standards for sustainable fishing.

Requirement regarding guidelines for assessing sustainability labelling for fish and shellfish

In parallel with this revision of the hotels and restaurant criteria, guidelines for approval of sustainability labelling for fish and shellfish have been drawn up, see Appendix 3.

The Nordic Ecolabel's requirement regarding wild-caught fish and shellfish seeks to ensure that the raw materials come from sustainable production systems. Nordic Ecolabelling places particular emphasis on standards for wild-caught fish having efficient criteria that protect against illegal fishing and depletion of natural biodiversity.

The guidelines for wild-caught fish are largely based on the FAO guidelines for ecolabelling of fish and fishery products from marine capture fisheries 2009[115]. The standard shall comply with the following conventions and guidelines:

- The 1982 UN Convention on the Law of the Sea
- The 1995 UN Fish Stocks Agreement
- The 2001 Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem
- FAO Guidelines for the ecolabelling of fish and fishery products from marine capture fisheries
- FAO Code of Conduct for Responsible Fisheries
- Respect the sovereign rights of countries and comply with all relevant laws and agreements

The guidelines for *farmed fish and shellfish* are based on the FAO's Technical Guidelines on Aquaculture Certification[116]. Regarding farmed fish, particular emphasis is placed on the standard having efficient criteria that minimise environmental impact and protect against depletion of natural biodiversity. There should also be a requirement that fishing for feed purposes is sustainable in the long term. It is important to include this point, as the way that such fishing is conducted has a major impact on the environment. Some of the standards currently in place for farming fish include requirements concerning the fish for feed, while others do not. For Nordic Ecolabelling's guidelines on approval of sustainability labelling for fish and shellfish, see Appendix 3.

On the basis of these guidelines, Nordic Ecolabelling will examine which labels can be approved as evidence that fish and shellfish come from sustainable fishing or sustainable production. Each individual standard and certification system is examined by Nordic Ecolabelling to ensure that all the requirements are met. Appendix 3 contains a checklist for the assessment.

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[115] http://www.fao.org/docrep/013/i1948e/i1948e08.pdf (Accessed 30.11.2011)

[116] ftp://ftp.fao.org/FI/DOCUMENT/aquaculture/TGAC/guidelines/Aquaculture%20Certification%20GuidelinesAfterCOFI4-03-11_E.pdf (Accessed 30.11.2011)

No sustainability labels for fish are currently approved, but Nordic Ecolabelling expects to shortly begin assessing the most commonly appearing labels in the Nordic market:

- MSC: MSC has developed standards for sustainable fishing and traceability of fish and shellfish. Both the standards are based on evaluations being carried out by an accredited independent third party certification body. Wild-caught fish can be labelled with the MSC logo.
- KRAV: The Swedish organic label has developed standards for sustainable fishing.
- Debio: The Norwegian organic label works with Swedish KRAV and uses their standards as the basis for certification.

A new standard for farmed fish has also been launched. ASC (Aquaculture Stewardship Council) was started as a collaboration between WWF and IDH (Dutch Sustainable Trade Initiative) and is expected to be the fish farming industry's version of MSC[117].

In addition, there are standards for organic fish farming – including EU Organic, KRAV and Statskontrolleret Økologisk.

Requirement P29 awards points for farmed salmon that complies with a standard that meets Nordic Ecolabelling's guidelines for farmed fish and shellfish. The reason for this is that farmed salmon makes up the majority of all salmon and of all farmed fish served in restaurants. In this first revision of the criteria, the focus is therefore on the most significant fish by volume. Organic salmon is available and ASC is in the process of developing a standard for salmon.

In this criteria document we judge that it is too early to set an obligatory requirement that a certain portion of fish must be labelled as sustainable (organically farmed plus fish that meets Nordic Ecolabelling's guidelines on approval of sustainability labelling for fish and shellfish) as the range of products for restaurants is still limited, particularly regarding fresh fish.

Access to fish labelled as sustainable and organic fish, for example MSC or KRAV, has however increased markedly in recent years. As table 10 shows, the increase in MSC-labelled fish has been greatest in Sweden. Unfortunately there is no documentation on access to KRAV-labelled fish on the Nordic market but MSC is judged to be the dominant player.

In the Swedish and Danish markets MSC-labelled fish accounts for 11% and 10% percent respectively of total consumption. The corresponding figure for Norway and Finland is 1 percent. According to WWF, the proportion of wild-caught fish sold in Norway that was MSC-certified when caught is in reality considerably higher than 1%, as approximately 75% of all Norwegian fisheries are MSC-certified[118]. However, because players further on in the production chain (dealers and wholesalers) do not have chain of custody certification, they cannot sell the fish as certified. The lack of chain of custody in the industry is the result of little demand from the consumer.

Purchasing of MSC-labelled fish in the restaurant sector divided by the total fish consumption in the respective country produces estimated availability of MSC-labelled fish in restaurants of 3.9 % in Sweden, 1.4% in Denmark, 0.14% in Norway and 0.35% in Finland (see Table 8)[119].

[117] ASC's website: http://www.asc-aqua.org/23,11,.2012
[118] http://www.wwf.no/bibliotek/nyheter_fakta/?31021 (09.09.2010)
[119] http://www.wwf.no/bibliotek/nyheter_fakta/?31021 (09.09.2010)

Table 8. Availability of MSC-labelled products in the Nordic market and total consumption of fish and shellfish.

	Amounts of MSC-labelled fish sold (tonnes)[120]		Total MSC-labelled to food service (tonnes)	Total consumption (tonnes)[121]	Proportion of MSC-labelled to food service of total consumption 2010
Year	2009/2010	2010/2011	2010/2011	2009	2010
Denmark	3,235	4,316	616	44,322[122]	1.4%
Finland	746	876	118	83,482[123]	0.14%
Norway	705	1,054	311	87,800[124]	0.35%
Sweden	10,410	15,913	5,684	144,800[125i]	3.9%

Of the MSC-labelled fish, approximately 14% went to the food service/restaurant sector in Denmark and Finland and the remainder was consumer products in 2010/2011. The equivalent figures for Norway and Sweden are 29% and 36% respectively. MSC-labelled fish is usually sold as frozen or prepared, i.e. not as fresh fish[126].

Major differences between the Nordic countries in terms of the availability of certified fish make it difficult for Nordic Ecolabelling to set a reasonable limit for the amount of certified fish a restaurant must serve to score points. In this consultation version it is proposed that 1 point be scored by businesses that serve 10% fish that is labelled as sustainable and 2 points if the proportion is 15% or more. We welcome comments from the consultation bodies on the proposed limits.

O40 Vegetarian dishes

The points score requirement in previous versions of the criteria for hotels and restaurants has been made obligatory.

Vegetarian food has a lower environmental impact and requires less energy and less space to produce the same amount of protein and energy as meat-based ingredients[127]. Nordic Ecolabelling therefore wishes to increase the focus on serving vegetarian food. Several different types of restaurant are covered by the criteria and not all the restaurants in the Nordic countries, such as canteens and staff dining rooms, serve hot meals. These restaurants often have a simpler range, including baguettes and a salad buffet. In order that simpler types of restaurant that do not serve hot food are able to meet the requirements, it has now been added

[120] Statistics from MSC on access to MSC products in the Nordic market. The statistics come from Minna Epps, Manager Baltic, Marine Stewardship Council.
[121] As consumption is not judged to have changed considerably, consumption figurines from 2009 are compared with MSC statistics for 2010/2011.
[122] Calculated figure based on fish consumption of 154 g per week per person in 2008. http://www.eurofishmagazine.com/news/118-denmark-consumption-of-fish-increases
[123] Calculated figure based on fish consumption of 16 kg per person per year and population statistics. Reference for fish consumption: Game and fisheries research, 2011. (http://www.rktl.fi/svenska/statistik/ekonomi_och_marknad/fiskkonsumtionen/fiskkonsumtionen.html) (Accessed 09.12.2011)
[124] Norwegian Directorate of Health, 2010. UTVIKLINGEN I NORSK KOSTHOLD. Matforsyningsstatistikk og Forbruksundersøkelser.
[125] Swedish Board of Agriculture (2011). Livsmedelskonsumtion och näringsinnehåll t.o.m. år 2009. Statistikrapport 2011:2
[126] Minna Epps, MSC Manager Baltic (personal communication)
[127] Lagerberg-Fogelberg. 2008. På väg mot miljöanpassade kostråd- vetenskapligt underlag inför miljökonsekvensanalysen av Livsmedelsverkets kostråd. Report 2008:9. Swedish National Food Agency, plus Röös. 2012. Köttguiden 2012 – kloka val för miljö och djurvälfärd Utkast 2012-10-10. Swedish University of Agricultural Sciences (SLU).

that a salad buffet that contains protein-rich ingredients such as beans and lentils, pasta, rice, couscous, tofu and similar can be approved as a vegetarian dish.

Baguettes/bread with a vegetarian topping can also be approved. It is pointed out that this only applies in businesses which only serve cold food. Where hot food is served, there must always be a hot vegetarian option. This means that a restaurant that serves hot food one day a week cannot have the salad buffet or baguette/sandwiches approved as a vegetarian dish on that day. They must instead serve a hot vegetarian dish. The requirement is documented by a copy of the menu. For restaurants that only serve cold food, a description must be sent in and a list of the ingredients included in the salad buffet and as toppings.

P30 Vegetarian restaurants, vegetarian and/or meat-free day

In this requirement, points are scored by restaurants that have one vegetarian day a week and/or one meat-free day a week. A vegetarian day scores 2 points and a meat-free day scores 1 point. A vegetarian day is better in environmental terms than only a meat-free day and earns a higher score. A vegetarian day cannot simultaneously be counted as a meat-free day, but if the business has one vegetarian and one meat-free day a week, it can score 3 points. Restaurants that are entirely vegetarian score 3 points.

This is a new requirement to increase the use of vegetables as ingredients and which at the same time is easy to check. Vegetarian food has a lower environmental impact and requires less energy and less space to produce the same amount of protein and energy as meat-based ingredients[128]. Vegetarian food is also better for the environment than fish. The idea of one meat-free day a week in restaurants arose in the early 2000s in the USA and the concept "Meat Free Mondays" was launched in the UK in 2009.

The requirement has been inspired by some businesses in Sweden where only a vegetarian lunch buffet is served on Fridays or others that have started "Meatless Fridays". Some have decided not to serve meat for one day a week, while others have introduced a completely vegetarian day.

The restaurant must be able to show menus and any other information that they provide for guests. The requirement must also be able to be checked on site.

P31 Locally produced food and beverages

The Nordic Ecolabel approves food as locally produced if the origin of the product (farm) is known and if all growing, processing and storage has taken place within a radius of 250 km of the place of final use (the restaurant, the hotel). For fish the distance which applies is from the fishing port. Locally produced food can also be game or farmed or wild-caught fish. For businesses in sparsely populated areas (north of the Arctic Circle) Nordic Ecolabelling may grant an exception and allow use of the old limit of 500 km.

The requirement gives the business up to 1 point if more than 15% of the volume of food or drink purchased is locally produced.

[128] Lagerberg-Fogelberg. 2008. På väg mot miljöanpassade kostråd- vetenskapligt underlag inför miljökonsekvensanalysen av Livsmedelsverkets kostråd. Report 2008:9. Swedish National Food Agency, plus Röös. 2012. Köttguiden 2012 – kloka val för miljö och djurvälfärd Utkast 2012-10-10. Swedish University of Agricultural Sciences (SLU).

The main purpose of the requirement is to ensure clear traceability in the supply chain from the restaurant back to the local point of production (the farm or fishing port). In future versions of the criteria, clear environmental requirements may thus be set with regard to ingredient production.

This requirement has been changed since previous versions of the hotel and the restaurant criteria. As previously, there is a limit for locally produced but this limit has been reduced from 500 to 250 km. The limit with a 500 km radius tended to be criticised for being too generous and for production taking place too far from the place of final use.

A discussion is currently underway in the Swedish food industry to agree what should be defined as locally produced food. The distance that most bodies use is 250 km (e.g. Bondens Marknad) which is the same as that proposed by the Nordic Ecolabel.

The reduction of the limit means that restaurants in the Stockholm area can no longer count fish from the port of Gothenburg as locally produced, which is a desired effect. For Danish businesses, the limit is still generous, but Nordic Ecolabelling has chosen not to divide the Nordic countries into different zones because this would require greater administration.

The foremost argument for locally produced food is that production contributes towards increased biodiversity both at species level and at habitat level. High biodiversity is also important for maintaining ecosystem services that are important for the development of more sustainable agricultural production. The increased consumption of locally produced food also produces a change in the organic production units as these are also geared towards local markets. These farms look different in that production is broader with several sorts of crops and an increase in different sorts of products. The consequence is a larger range of products and this is in demand. Biodiversity is also higher on these farms[129].

It is also possible, in more general terms, to draw the conclusion that more locally produced food may be more beneficial from an environmental perspective. In 2008, the Swedish National Food Agency assessed the environmental impact of food production, with a view to environmentally adapting Swedish dietary advice. The general conclusions were that more seasonal consumption of fruit and vegetables would be good for the environment, since Swedish production of apples and root vegetables was shown to be better in environmental terms (climate, biodiversity and toxin free environment) than imported fruit and vegetables. Organic products are better environmentally than conventionally grown products, since they do not involve the use of chemicals and preserve greater biodiversity. It was also concluded that the environmental impact of Swedish food consumption could be cut by reducing the consumption of meat. However, Swedish meat production did well environmentally compared with imported alternatives, in terms of climate impact, use of chemicals and biodiversity. This is due primarily to the fact that the intensity of animal production in Sweden is low. The benefits of more locally produced meat are that it can cause animal production to be spread more widely across Sweden, and pasture land can be preserved. The study also concluded that protein from legumes is preferable to meat from an environmental point of view, whether grown domestically or imported. However, the seasonal adaptation of legumes is preferable, since the import of fresh legumes gives a disproportionately large environmental impact[130].

[129] Milestad, R. et al. Local selling as a driving force for increased on-farm biodiversity.
[130] Lagerberg-Fogelberg. 2008. På väg mot miljöanpassade kostråd- vetenskapligt underlag inför miljökonsekvensanalysen av Livsmedelsverkets kostråd. Swedish National Food Agency.

It is not possible to take the conclusions of the Swedish National Food Agency's synthesis report on Swedish food consumption and transfer them wholesale to the Nordic region, but certain parallels can be drawn according to Nordic Ecolabelling. The most important points in terms of locally produced food are:

1. The majority of food imported into the Nordic region (does not apply to all environmental aspects in all Nordic countries) comes from more intensive farming systems with a greater total environmental impact, compared with agricultural systems in the Nordic countries.
2. For unrefined and relatively unrefined vegetable matter (fruit and vegetables, including root vegetables) transport is a significant element of the climate impact during the life cycle and particularly in cases of refrigerated distribution[131]. This applies in particular to products of high density such as root vegetables (including potatoes).
3. Nordic vegetables grown in open fields, such as carrots, parsnips, potatoes and onions, generally have a lower environmental impact than lettuce, cucumber, tomatoes and peppers. These field grown vegetables can be produced and stored in an environmentally effective way in all the Nordic countries, which favours locally produced vegetables.
4. Waste can be cut if the time between harvest and consumption is reduced, which favours products from the local area.
5. The consuming of fruit and vegetables should be seasonally adapted in order to minimise the import of fruit and vegetables that are transported long distances or grown in greenhouses heated using fossil energy.

Another more general fact that supports locally produced food is that less than 7-8% of the land in Sweden and Finland is agricultural. In Norway the figure is less than 4%, which is the lowest in Europe. In Denmark, agricultural land accounts for 62%[132]. Iceland probably has even less than Norway. Although certain parts of Finland, Norway and Sweden have a greater proportion of agricultural land, such land is actually in short supply in these countries. Much of the biodiversity in the Nordic region can be found in the agricultural landscape and this is threatened by the restructuring of agriculture, with more and more land not being farmed. In these countries, farming is good for biodiversity, while it can be negative in countries with large-scale monoculture production for a large export market.

Variety in the landscape is an important basis for biodiversity. This means that it is important to retain fields and natural pasture in these countries. Increased production of fruit and vegetables would help to ensure a varied landscape in all the Nordic countries, since at the moment cereals or grazing dominate.

The spread of agricultural land at the cost of natural ecosystems is the biggest threat to biodiversity globally. Food imported to the Nordic countries usually comes from countries and areas where agriculture is often conducted over large spaces in monocultures, which has an important impact on the environment. In areas where agricultural land is in short supply, the farmer often compensates for this with a greater proportion of external inputs (such as fertiliser, biocides and more intensive farming), which also increases the environmental impact.

131 This is also shown in Röös (2012) Mat-klimat-listan Version 1.0, where Nordic fruit and salad is generally judged to have a lower environmental impact than imported alternatives.
132 Europe in figures – Eurostat yearbook 2011: Agriculture, forestry and fisheries
http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/CH_08_2011/EN/CH_08_2011-EN.PDF

This is exemplified, for example, by the use of chemical biocides in the Nordic region being low from an international perspective. In the report from the Swedish National Food Agency, statistics on the use of biocides in some European countries have been collated for fruit and vegetables, potatoes and cereals. The statistics show that in all these systems the use of biocides is lower in the Nordic countries. The reason is the relatively colder climate and the sparser farming system, which causes lower disease pressure and thus a lower demand for chemical assistance.

The environmental impact of meat production is in part related to intensity in the production system. In Northern Europe the intensity is relatively low, whereas large parts of Europe have much more intensive farming and thus a higher general environmental effect. Naturally grazed meat[133] from the Nordic region (organic and conventional) is the production form that contributes most to greater biodiversity[134]. Natural grazing helps to keep pasture, which reduces the threat to species that are dependent on such land. Naturally grazed meat from South America has a much greater impact, since that form of farming contributes indirectly to forests and bush being converted into agricultural land. Transport usually plays an insignificant role in this context since the overall environmental impact of meat production is so extensive.

In summary, the general conclusion is that all locally produced products are better in all environmental respects. However, agricultural land is in short supply across large parts of the Nordic region. Agriculture is generally less intensive in the Nordic region than equivalent farming in the countries from which imported foods come. The use of biocides is generally lower in the Nordic region than in much of Europe. This suggests that locally produced Nordic food as a category can generally be considered to have a lower environmental impact than corresponding imported alternatives. Nordic Ecolabelling therefore wishes to promote locally produced food.

Nordic Ecolabelling realises that the important thing about locally grown food is that the production chain from producer to end consumer is short, in other words the end consumer knows who produced the product, and that production of the foodstuffs, any refining and the consumption takes place within a limited area. Nordic Ecolabelling believes that direct contact between restaurant/hotel and producer is of value. In future, Nordic Ecolabelling may decide that it is possible to aim requirements at the individual producer of locally produced farm products.

P32 Drinking water

This is a new requirement as we see an environmental benefit from the requirement in that it causes less packaging waste from bottles and cans and less need for energy from the transport and production of bottled water.

The alternative, offering only tap water or having own mineral water production, considerably reduces emissions from transport. Bottled water causes much greater carbon emissions compared with the same amount of tap water. Bottled water means water bottled at a brewery.

The requirement is checked by the business sending in a description of what the business offers instead of bottled water. The requirement must also be checked on site.

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[133] Meat from animals that during the grazing season largely graze in fields and pastureland.
[134] Röös. 2012. Köttguiden 2012 – kloka val för miljö och djurvälfärd Utkast 2012-10-10. Swedish University of Agricultural Sciences (SLU).

P33 Measuring organic waste

Organic waste is a considerable environmental issue for restaurant businesses and the purpose of this requirement is to reduce the amounts of unnecessary organic waste from restaurant kitchens. Organic waste can be divided into food waste and avoidable wastage, where food waste cannot be avoided (egg shells, bones, coffee grounds), while avoidable wastage could have been consumed if handled differently. As food is the greatest environmental burden from restaurants, it is naturally important to ensure that food is used efficiently and does not go to waste. It is therefore crucial that the restaurant monitors the amount of organic waste to reduce this amount of waste in the future.

The restaurant scores 1 point if it regularly measures the amount of organic waste by weight or volume and relates this to the number of guests served during the period in question.

Measurement and monitoring can take place either by the restaurant carrying out its own measurements or using information from the waste company on the amounts of organic waste collected. Drinks are not to be included in the measurement. The result of measurements must be reported at least once a year.

The restaurant can reduce the amount of food waste through good planning and purchasing of food. A summary of the amount of organic waste thrown away every day in different types of restaurant can be found in the RPS section on "Food and drink". According to a synthesis study published by the Nordic Council of Ministers in 2012, restaurants and caterers in the Nordic region are estimated to generate 680,000 tonnes of food waste (27 kg/inhabitant), of which 456,000 tonnes is judged to be avoidable wastage (18 kg/inhabitant)[135]. This means that 67% of food waste may be avoidable. Different types of organic waste arise depending on the type of restaurant, for example, whether it is an à la carte restaurant, a lunch or staff canteen or a catering restaurant, according to a Swedish survey of catering waste[136]. The survey divides food waste into stock waste, food preparation waste, serving waste, serving surplus, plate waste and liquid waste. According to another survey on food waste from restaurants and catering businesses[137] between 0.2 and 0.5 kg (typical value 0.3 kg) of solid food waste arises per person. However, this survey is extremely limited in scope and does not give a picture of different types of restaurant, which is an important factor. According to the study published by the Nordic Council of Ministers in 2012, different studies show extremely varied results when it comes to food waste. This is due in part to a lack of clarity about the definition of what is to be counted as unavoidable food waste and avoidable wastage. There is thus a need for better methods of measurement, better definitions and improved statistics on food waste. Poor statistics make it impossible to set targets for reducing waste in restaurants[138].

It would have been desirable to produce a limit value for the amount of organic waste a restaurant may produce in this revision of the criteria. Unfortunately it is not currently possible to set general limit values for restaurants that are fair for the broad spectrum of different restaurant businesses covered by the criteria, since knowledge in this area is poor. Nor has it

[135] Marthinsen et al. 2012. Prevention of food waste in restaurants, hotels, canteens and catering. TemaNord 2012:537. Nordic Council of Ministers.
[136] 2011. Livsmedelssvinn i hushåll och skolor – en kunskapssammanställning. Swedish National Food Agency Report 4:2011.
[137] RVF Utveckling 2006. Matavfall från restauranger, storkök och butiker – Nyckeltal med användarhandledning. RVF Report 2006:07. p. 28. RVF is Svenska Renhållningsverksföreningen (Swedish Waste Management).
[138] Marthinsen et al. 2012. Prevention of food waste in restaurants, hotels, canteens and catering. TemaNord 2012:537. Nordic Council of Ministers.

been possible to find a good way of documenting the requirement, which would involve an unreasonable amount of work for the businesses.

5.1.18 Guest rooms

O41 Disposable toiletries

This is a new obligatory requirement that means that no disposable toiletries (not refillable) are permitted, e.g. shampoo/soap and other products (not reusable), e.g. shower caps, brushes, nail files, etc. unless required by legislation.

In the previous version of the hotel criteria, version 3, this was a points score requirement which scored points if no disposable items were found in bathrooms/guest rooms.

The requirement does not concern disposable items that guests can request at reception, e.g. disposable toothbrushes, shower caps. Nor does the requirement cover individual portion packs of tea, coffee, sugar or milk substitute.

This requirement is a major tightening up of the criteria. Our experience shows that international hotel chains have high requirements of the facilities in their own businesses, which means little or no steerability to influence Nordic businesses to avoid disposable toiletries.

Experience from licensing is that the market is not mature enough to introduce an obligatory requirement that no disposable toiletries (not refillable) such as shampoo, soap and products (not reusable) such as shower caps, brushes/combs, nail files, ear plugs, shoe polish, sewing kits, slippers, etc. are permitted. The requirement is therefore set whereby disposable items are permitted in a maximum 25% of the rooms rather than a total ban. The requirement does not concern disposable items that guests can request at reception, e.g. disposable toothbrushes, shower caps. Nor does the requirement cover individual portion packs of tea, coffee, sugar or milk substitute.

The requirement continues to allow scope for a maximum 25% of the bathrooms/guest rooms to be allowed to use disposable items as above.

The requirement is documented by the business declaring that the requirement has been met.

P34 Disposable items

If no disposable items are found in the bathrooms/guest rooms, the business scores 3 points. The requirement does not apply to disposable items that the guest can request at reception, e.g. disposable toothbrushes, shoe polish, sewing kits, slippers, etc. Nor does the requirement cover individual portion packs of tea, coffee, sugar or milk substitute.

In this version of the criteria the previous requirement concerning disposable items in the room is retained (P31), but the points level has been adjusted upwards from 1 point to 3 points.

P35 Television sets

The requirement has been adjusted and harmonised with Nordic Ecolabelling/EU Ecolabel criteria for televisions in terms of the standby mode requirement. If more than 90% of the

televisions have an off switch, the energy consumption in passive standby mode must be ≤ 0.50 W. For other television sets, the energy consumption in passive standby mode must be ≤ 0.30 W. This scores 2 points. Standby mode means that the television set is connected to a power source and reception but is not in use, for programmes/showing of pictures/text.

If there are no televisions in guest rooms, 2 points are scored (in the previous version of the criteria this scored 1 point).

In the previous version of the hotel criteria, points were also scored for active standby. That has been removed in this version as data on this requirement was often lacking in the product information sent in to document that the requirement was met.

Developments in technology have led to lower levels of standby energy consumption for televisions and the requirements are now harmonised with the requirements of the Nordic Ecolabel/EU Ecolabel on ecolabelled televisions. The aim of the requirement is to increase the proportion of television sets with lower consumption including standby mode.

In this version the opportunity to score points if the hotel staff's procedures include turning off televisions during cleaning has also been removed. There is simply too low steerability for this requirement.

P36 Minibars

The aim of the requirement is to minimise total energy use by setting a requirement for low energy consumption of minibars. We want to encourage greater technological development and the purchase of energy efficient minibars or to have no minibars in the business at all. Our experience is from a technology supplier who sells to hotels.

The requirement has been tightened up considerably in terms of the energy consumption for which points are scored. Furthermore, there are now two energy consumption levels as opposed to the previous three. Two points are scored if more than 90% of the minibars use a maximum of 0.6 kWh/day and 1 if more than 90% of the minibars use a maximum of 0.8 kWh/day.

The requirement is documented by the supplier declaring that the requirement has been met.

If the hotel's guest rooms do not have minibars, it scores 3 points, double that of the previous version. If at least half of the guest rooms do not have minibars, the hotel scores 1 point.

P37 Room adapted for allergy sufferers

If at least one guest room has been adapted to allergy sufferers, points can be scored with the approval of Nordic Ecolabelling.

Room adapted for allergy sufferers means a room that as a minimum requirement is non-smoking and has windows that can be opened, where pets are not permitted and no scented washing or cleaning products or perfumes are used. Nor may the room have wall-to-wall carpets.

In the previous criteria for hotels and youth hostels, hotels could score points if they had at least one room adapted for disabled people or for allergy sufferers. The requirement has been rewritten and now covers a separate requirement for rooms adapted for allergy sufferers. Regarding requirements for rooms adapted to the disabled, see section 5.1.13 "Accessibility".

The Swedish Asthma and Allergy Association has previously had guidelines on what rooms and premises adapted for allergy sufferers involve in hotels but these were removed a while back because they were too difficult to follow. They have not been replaced but there are plans to draw up new guidelines in the future, although no firm schedule has been set. The situation is judged to be relatively similar in the other Nordic countries and similar work is underway, but as things stand at the moment there are no finished criteria.

The Asthma and Allergy Association does, however, provide guidance on what it is important to think about from the point of view of allergy sufferers[139]. For allergy sufferers it is important that the inside environment is free of perfumes and scents such as tobacco smoke, scent/perfume, scented cleaning products and pets. In addition, particularly regarding places where the general public sleep, there should be good ventilation and windows that open. From an allergy perspective, not having wall-to-wall carpets and the choice of interior design materials and cleaning procedures/products can be crucial to the health and comfort of an allergy sufferer.

5.1.19 Pools

P38 Pools – disinfection

Here 2 points are scored if cleaning with chlorine has been replaced with an alternative that is better from an environmental point of view (jacuzzis are not included here). Pool means a pool where the water is recirculated and disinfected.

A small survey into the use of chlorine in Norway shows that there are few alternatives to chlorine treatment for disinfecting pools. In Norway there are only two approved methods:

1. Disinfection using chlorine (hypochlorite)
2. Disinfection using a method/system called PoolSAN

The PoolSAN method consists of two components as an alternative to chlorine treatment, PoolSAN and PoolSAN regenerator. The regenerator contains peroxymonosulphate which is a powerful oxidant, while PoolSAN consists of metals such as copper and certain amounts of silver.

Disinfection using ozone and UV radiation are methods that can only be used as treatments in addition to methods 1 and 2 and can thus not replace the two approved methods. These methods disinfect the water but do not have any long-term effect as they disinfect the water before it is added to the pool but do not contain components which help to keep the water disinfected in the longer term.

In facilities where UV radiation is used, this should take place after the water has passed through a filtration plant. Regarding ozone this should take place at a point in the circulation system where it is certain that ozone will not leak out into the pool water as it can be harmful to health.

[139] http://www.astmaoallergiforbundet.se/Page.aspx?catid=15&pageid=19>

Disinfection using PoolSAN is a new method that has not been in use long enough to be able to draw any conclusions about the advantages/disadvantages compared with disinfection using chlorine.

The circumstances described above only apply to Norwegian conditions, but we have assumed that corresponding strict requirements also apply in the other Nordic countries, which shows that chlorine cannot be entirely replaced by other alternatives today, which is why the wording of this requirement has been retained.

P39 Hot springs
This requirement applies only to Iceland where 1 point is scored if the energy use for hot springs is regulated and optimised.

5.1.20 Work on the requirement levels

In the work on this revision we have focused on merging the criteria for hotels and restaurants into one criteria document. We have also made it possible for conference facilities to apply. The result is also that we have reduced the number of requirements and harmonised the shared requirements.

On the basis of licence data and the experience of case officers, requirements have been tightened up in terms of content where this was considered necessary. The points levels have also been adjusted. In this work we have been aware that for restaurants this has involved making the criteria considerably more stringent solely due to the fact that they now have more requirements to fulfil (e.g. obligatory and optional limit values). To make it easier for businesses, Nordic Ecolabelling is seeking to develop a well-designed web-based application system to make the application process easier and less bureaucratic.

In that we have now combined three types of business in one criteria document and that in many cases these will be covered by the same licence, the limit value requirements are now based on how different guests (hotel, restaurant and conference guests) burden the business.

Early on in the revision process it was decided to introduce an energy tool in order to be able to set more relevant energy requirements in that these would be more clearly tailored to the businesses in question.

This major work and the major changes it involves reduce the relevance of comparing the requirement levels with existing licence data, i.e. comparing "backwards". Certain approximations with licence data have been made, but mainly the requirement levels have been set on the basis of the tests carried out during the revision process. We have taken test data from 36 businesses of different types and sizes and from our Nordic countries.

For *hotels* the largest change is in the energy limit value and the fact that the energy tool must be used. In addition, the limit value requirements have been changed, as has the way requirements for chemicals are set, the limit value has been removed and the proportion of ecolabelled chemicals the businesses must use has been raised. One major change for hotels with restaurants is that if the restaurant is within the same business and marketed as a unit, it must be included in the licence.

For *restaurants* the greatest differences are the introduction of the limit values, with an obligatory energy limit value, and the fact that the energy tool must be used. The proportion of organic food has been adjusted and labelling of fish and shellfish must be approved under Nordic Ecolabelling's guidelines for sustainable fishing. We have also expanded the requirements on problematic and very problematic ingredients.

The ability to Nordic Ecolabel a *conference facility* is new. Compared with the other businesses, it is important here to emphasise the fact that the business must have a Nordic Ecolabelled supplier of food that is served if it does not have its own restaurant.

On the basis of the results of these tests, we have set the energy limit value at 1.8, which will weed out approximately 15% of the businesses tested. The limits on the number of requirements that the business must meet is set at 35%, which on the basis of testing will weed out 35% of the businesses simply on the points score requirements. This may appear a large number but we know that a certain proportion of answers from the businesses are based on the current situation and we assume that there are margins for them to make certain changes and improvements before it is time for licensing, so therefore the project group considers that this is a relevant level.

5.1.21 Summary of changes compared with previous versions of the criteria

Below, "Table 9 Transition key from Hotel Criteria 3.2 to the current version" describes what has happened to the requirements from the previous versions of the criteria. It states whether they have been deleted from the criteria, amended or kept unchanged, and what new requirement number they have been assigned.

Table 9 Key to changes from Hotel Criteria 3.2 to the current version

O-REQ.	REQUIREMENT HEADING	CHANGE TO PREVIOUS REQUIREMENT	NEW REQ. NO.	WHY HAS REQUIREMENT BEEN DELETED OR AMENDED?
O1	Description of the hotel	Amended	O1	Description of all businesses included in the application.
O2	Refrigerants	Req. deleted		Not relevant. Refrigerant CFC governed by law.
O3	Outdoor lighting	Req. deleted		Low steerability.
O4	Sauna	Req. deleted		Low potential. All units have a timer.
O5	Fittings and fixtures	Req. deleted		Low steerability.
O6	New purchases of textiles	Req. deleted		Hard to follow up compliance with the requirement, plus low relevance.
O7	New purchases of low energy lamps and fluorescent tubes	Req. tightened	O21	
O8	Kitchen roll, paper towels and toilet paper	No change	O22	
O9	Non-smoking rooms	Req. deleted		Low relevance. Dealt with in req. regarding room for allergy sufferers.
O10	Disposable items	Amended	O25	

O11	Ecolabelled dishwashing chemicals	Req. tightened	O10	
O12	Non-ecolabelled dishwashing chemicals	Amended	O13	Merged req. and applies to all non-ecolabelled products.
O13	Non-smoking dining area	Req. deleted		No relevance. Governed by law.
O14	Disinfectant	Req. deleted		
O15	Ecolabelled laundry detergents	Req. tightened	O11	
O16	Non-ecolabelled laundry detergents	Amended	O13	Merged req. and applies to all non-ecolabelled products.
O17	Ecolabelled cleaning products	Req. tightened	O12	
O18	Non-ecolabelled cleaning products	Amended	O13	Merged req. and applies to all non-ecolabelled products.
O19	Hazardous waste	Req. deleted		No relevance. Governed by law.
O20	Waste sorting	Amended	O19	
O21	Batteries	Req. deleted		Low relevance. Batteries now a fraction that the hotel sorts itself.
O22	Waste sorting, conference guests	Amended	O20	Req. now applies to all businesses.
O23	Biocides	Req. deleted		Covered by the req. for non-ecolabelled products.
O24	Composting	Req. deleted		Included under waste as possible category for sorting.
O25	(youth hostels) Dishwashing detergents and cleaning chemicals	Req. deleted		Now included in general req. for chemicals.
O26	(youth hostels) Waste	Req. deleted		Covered by the req. for waste sorting O20
O27	Organisation and responsibility	Amended	O1	Now included in "General description of the business".
O28	Actions to reduce environmental impact	Req. deleted		Covered in part by new req. O33.
O29	Statutory procedures	Amended	O29	
O30	Information about the Nordic Ecolabel for staff	Amended	O30	
O31	Guest information	Amended	O31	
O32	Constant measurements	Amended	O8	
O33	Documentation of Nordic Ecolabel criteria	Amended	O35	
O34	Energy-demanding equipment and service log	Req. deleted		Low relevance.
O35	Handling of chemical products	Amended	O18	
O36	Annual follow-up	Amended	O34	

P-REQ.	REQUIREMENT HEADING	CHANGE TO PREVIOUS REQUIREMENT	REW REQ.	WHY HAS REQUIREMENT BEEN AMENDED OR DELETED?

P1	Energy analysis	Amended	P8	
P2	Heat consumption	Req. deleted		Covered by energy limit value.
P3	Electricity consumption	Req. deleted		Nordic Ecolabelling does not promote renewable electricity.
P4	Refrigerants	Req. tightened	P7	
P5	Heat recovery	Req. deleted		Req. governed by tighter energy limit value.
P6	Control of ventilation and interior lighting	Amended	P11, P10	Req. split into two requirements.
P7	Low energy lamps	Amended	P9	Req. called Lighting and includes LED.
P8	LED	Amended	P9	Req. called Lighting.
P9	Toilets	Req. deleted		Req. governed by dual flush requirement.
P10	Toilets	Unchanged	P18	
P11	Water-saving taps	Req. tightened	P16	Covers all taps.
P12	Toner cartridges	Req. deleted		Low potential.
P13	Office machines	Req. deleted		Req. governed by the limit value and has low steerability.
P14	Req. governed by dual flush requirement.	Req. tightened	O24, P21	Req. split into one O-requirement and one P-requirement.
P15	Ecolabelled soap and shampoo	Unchanged	P20	Now included in req. on purchasing of ecolabelled consumables.
P16	Dispensers for soap and shampoo	Req. deleted		Low relevance.
P17	Drinking glasses and mugs			
P18	Returnable bottles or barrels/tanks	Req. deleted		Low potential and steerability.
P19	Work clothes	Amended	P22	Included in ecolabelled durables
P20	Working environment	Req. deleted		Low steerability.
P21	Purchase of ecolabelled consumables	Amended	P20	
P22	Ecolabelled durable goods	Amended	P22	Included in ecolabelled durables
P23	Ecolabelled services	Amended	P23	
P24	(youth hostels) Sale of soap/shampoo/detergents	Req. deleted		Low relevance.
P25	Bed linen and towels	Amended	P22	Included in ecolabelled durables
P26	Lighting	Amended	P10	Included in automated lighting controls
P27	Television sets	Req. tightened	P35	
P28	Minibars	Req. tightened	P36	
P29	Water-saving showers	Req. tightened	P17	
P30	Single-level mixer taps	Req. deleted		Governed by limit value for water. Low relevance.
P31	Disposable items	Amended	O41	It is now an obligatory requirement and includes disposable toiletries.
P32	Waste sorting	Amended	O20	It is now an obligatory requirement.
P33	Waste paper bin	Req. deleted		Low potential.

P34	Rooms adapted for the physically disabled or allergy sufferers	Amended	P24, P37	Req. split into two requirements, "accessibility" and "room adapted for allergy sufferers".
P35	Points for organic foodstuffs and beverages	Amended	O27, O39, P28	Breakfast serving separate req. Food serving merged with restaurant requirements.
P36	Fairtrade products (Fairtrade/Max Havelaar)	Req. deleted		Deleted due to problems differentiating between social/ethical labels, plus our focus is on the environment, not social issues.
P37	Ecolabelled dishwashing chemicals	Req. deleted		Covered by obligatory req. for dishwashing chemicals.
P38	Dosage of dishwashing chemicals	Req. tightened	O15	It is now an obligatory requirement.
P39	Nordic Ecolabelled restaurant	Req. deleted		Restaurants now covered by the criteria.
P40	Regional foodstuffs and beverages	Amended	P31	Merged with restaurant req.
P41	Vegetarian dishes	Amended	O40	It is now an obligatory requirement.
P42	Declaration of GMO content	Amended	O38	It is now an obligatory requirement and entails a ban.
P43	Origin of main ingredients	Amended	O36	It is now an obligatory requirement.
P44	Food with significant environmental impact	Amended	O37	It is now an obligatory requirement.
P45	Energy and water-saving actions	Amended		Split up and covered by energy limit value and separate req.
P46	Cleaning without chemicals	Req. tightened	O14	It is now an obligatory requirement.
P47	Ecolabelled laundry products	Req. tightened	O11	It is now an obligatory requirement.
P48	Ecolabelled cleaning products	Req. tightened	O12	It is now an obligatory requirement.
P49	Bed linen and towels	Amended	P22	Covered by Ecolabelled durables
P50	Exact dosing	Amended	P12	
P51	Concentrated products	Req. deleted		Low potential because not on the market.
P52	Further waste sorting	Deleted		
P53	Returnable packaging	Req. deleted		Low potential.
P54	Organic waste	Amended	P19	
P55	Own vehicles	Req. deleted		Low potential.
P56	Public transport	Req. deleted		Low potential.
P57	Bicycles and horses	Req. deleted		Low potential.
P58	Extra points from the limit values	Req. deleted		Points system replaced with amended points levels for each limit value.
P59	Energy consumption lower than limit value	Amended	P1	Change to points system.
P60	Waste sorting	Amended		Covered by the general req. for waste sorting.
P61	Conference pads	Req. deleted		Covered by purchasing of consumables.
P62	Flipcharts and pens	Req. deleted		Covered by purchasing of consumables.
P63	Drinking glasses	Req. deleted		Covered by req. regarding disposable items.

P64	Organically grown fruit	Req. deleted		Req. governed by organic purchasing.
P65	Pool disinfection	Amended	P38	
P66	Pool cleaning chemicals	Req. deleted		Pool chem: most have it, low potential.
P67	Pool facilities/whirlpool/ hot springs	Req. deleted		Pools included in limit values for energy and water.
P68	Pool temperature	Req. deleted		Pools included in total limit value.

Table 10 Key to changes from Restaurant Criteria 1.3 to the current version

O-REQ.	REQUIREMENT HEADING	CHANGE TO PREVIOUS REQUIREMENT	REW REQ.	WHY HAS REQUIREMENT BEEN AMENDED OR DELETED?
O1	Description of the restaurant	Amended	O1	Now included in the general description of all businesses.
O2	Origin of main ingredients	Amended	O36	Amended req. now called "Origin of meat and fish".
O3	Food with documented sustainable origin	Amended	O37, P29	Req. tightened and covered by one O-req on very problematic raw materials and one P-req. on problematic raw ingredients.
O4	Food containing GMOs	No change	O38	
O5	Minimum proportion of organic foodstuffs and beverages	Req. tightened	O39	Minimum level raised generally. See each country in table.
O6	Chemical products for dishwashing and cleaning	Amended	O10, O12	Req. now split into separate requirements for dishwashing chemicals and cleaning chemicals for the whole establishment.
O7	Reactive chlorine compounds	Req. deleted	(O13)	Included instead in req. for non-ecolabelled products.
O8	Kitchen roll, paper towels and toilet paper	Amended	O22	Merged with hotel criteria.
O9	Disposable items	Amended	O25	Merged with hotel criteria.
O10	Disposable items for take away, catering and fast food establishments	Req. tightened	O26	Req. for action plan deleted.
O11	Electricity and gas metering	Req. deleted		Now included in energy use with limit value for whole establishment.
O12	Refrigerants	Req. deleted		Not relevant. Refrigerant CFC governed by law.
O13	Dishwashers	Req. deleted		Req. not relevant according to our RPS analysis.
O14	Environmentally dangerous waste	Req. deleted		Handling of hazardous waste governed by statutory requirements.
O15	Waste sorting	Amended	O19	Merged with hotel criteria.
O16	Organisation and responsibility	Amended	O1	Merged with hotel criteria.
O17	Legislation and regulatory requirements	Amended	O29	Merged with hotel criteria.
O18	Documentation of Nordic	Amended	O35	Merged with hotel criteria.

	Ecolabel criteria			
O19	Handling of chemical products	Amended	O18	Merged with hotel criteria.
O20	Energy-demanding equipment and service log	Req. deleted		Low relevance.
O21	Operation and maintenance of dishwashers	Req. deleted	-	Low relevance.
O22	Information about the Nordic Ecolabel for staff	Amended	O30	Merged with hotel criteria.
O23	Guest information	Amended	O31	Merged with hotel criteria.
O24	Non-smoking dining area	Req. deleted		Legal requirement, no potential.
O25	Annual follow-up	Req. deleted		Annual follow-up in procedures for follow-up inspections.
P-REQ.	REQUIREMENT HEADING	CHANGE TO PREVIOUS REQUIREMENT	REW REQ.	WHY HAS REQUIREMENT BEEN AMENDED OR DELETED?
P1	Points for organic foodstuffs and beverages	Req. tightened	P28	
P2	Points for regional foodstuffs and beverages	Req. tightened	P31	
P3	Vegetarian dishes	Req. tightened	O40	It is now an obligatory requirement.
P4	Fairtrade products (Fairtrade/Max Havelaar)	Req. deleted		Decision taken by Nordic Ecolabelling.
P5	Actions to reduce consumption of chemical products	Amended	O14, P12	Req. split into separate requirements and some requirements deleted.
P6	Returnable systems for beverages	Req. deleted		Req. has low potential and low traceability.
P7	Paper towels and fabric hand towel rolls	Req. deleted		Req. has low relevance and low potential.
P8	Purchase of ecolabelled consumables and services	Amended	P20, P23	Merged with hotel criteria. Split into two requirements.
P9	Ecolabelled durable goods	Amended	P22	Merged with hotel criteria.
P10	Water metering	Req. deleted		Now included in water use with limit value for whole establishment.
P11	Energy and water-saving actions	One req. split into several.		Parts of the req. fall into the energy and water requirements.
P12	Renewable energy	Req. deleted		Nordic Ecolabelling does not promote renewable electricity.
P13	Refrigerants	Req. tightened	P7	Merged with hotel criteria.
P14	Further waste sorting	Deleted		Merged with hotel criteria.
P15	Waste reduction	Req. deleted		Req. governed by limit value for waste and separate req. for organic waste.
P16	Eco-friendly transport	Amended	P26, P27	Parts of the req. fall into two new requirements for transport.
P17	Actions to reduce environmental impact	Req. deleted		Covered in part by new req. O33.
P18	Training	Req. deleted		Low relevance.

Limit value – Chemicals

As stated above, the criteria for hotels previously had an optional limit value for use of chemicals but we have now decided to remove this. There was no equivalent requirement in the first version of the restaurant criteria.

On the basis of the licence data for a total of 402 Nordic Ecolabelled hotels, we see an average use of chemicals that lies around 40% lower than the limit value for the respective hotel. If we ignore the outlying values in the data material and instead focus on the median value, this is a whole 50% lower than the limit value. The trend whereby the majority of hotels are meeting the limit value by a good margin is clear in all the Nordic countries.

The following weaknesses of the requirement in the previous version of the criteria (version 3) have been identified:

- Chemical use varies depending on more parameters than just guest nights and for certain types of product, guest days are virtually irrelevant to the amounts used. The amount of cleaning chemicals is largely dependent on the area of the hotel, while the amount of dishwashing detergent is determined by the size/turnover of the restaurant.
- Products intended for laundry are not included in the limit value – despite the fact that the RPS showed that their relevance is high for this part of the hotel's operations. The background to this is that the majority of hotels use external laundries. Special cleaning was not included either – despite the fact that these products often have properties that are harmful to the environment and to health.
- Nor does the limit value distinguish between chemicals with different characteristics – for example, the effect of 1 kg of sodium hypochlorite is not the same as the effect of 1 kg "green soap" (grönsåpa). In the limit value 1 kg is calculated as 1 kg whether it is harmful to health and the environment or not.
- The concept "active substance" (the product's total chemical content minus water) is not a familiar concept in the hotel and restaurant industry. Hotels, restaurants and conference facilities have an overview of the amounts purchased and what they have paid for the products. The amount of active substance can be obtained from their suppliers but it is not a parameter that they themselves monitor changes in over time or when switching product. There are also some suppliers who do not wish customers to be aware of the content of active substance in the products they sell.
- Documenting use of chemicals in terms of amount of active substance is a complex process and is made even more complicated if the chemicals supplier does not want its customers to find out the active content of its products.
- The requirement is documented on the basis of purchased volume and not actual consumption. This uncertainty removes some of the precision associated with using an active substance.
- The limit for use of chemicals has been high and can therefore not be said to have produced any environmental effect.

Based on the points above, in this version of the criteria it is proposed that the limit value for use of chemicals be removed. This should not be seen as Ecolabelling facilitating the unlimited use of chemicals but as an evaluation of the parameters that steer the use of chemicals in a hotel, in a restaurant and/or in a conference facility.

Nordic Ecolabelling will continue to have criteria that stimulate keeping the use of chemicals to the minimum that is necessary in order to meet the relevant hygiene requirements. In this version of the criteria we do this partly by encouraging chemical-free cleaning methods.

Furthermore, the requirements on the proportion of ecolabelled chemical products have also been increased, which will indirectly reduce the use of chemicals as these products are effective and their water content is limited.

6 Changes compared to previous version

- The criteria for hotels and youth hostels are being merged with the criteria for restaurants while simultaneously opening up an opportunity to ecolabel conference facilities provided that their food comes from a Nordic Ecolabelled supplier (internal or external).
- If several of these different elements are part of the same business and are marketed as a unit, all of them must be included in the licence.
- We have moved away from the previous division of hotels into different classes. Instead, the limit value requirements are set based on the conditions of the specific business.
- A brand new energy and carbon dioxide tool has been developed to produce a limit value based on optimum energy use for the specific business in question.
- The same energy and carbon dioxide tool also calculates a carbon dioxide limit value.
- It is now possible to apply from the Baltic countries.
- The requirements on the proportion of organic food have been tightened up.
- The requirements on fish that may not be served have been tightened up.
- A new requirement has been introduced on the proportion of fish and shellfish from sustainable fishing.

7 New criteria

In a future review there will be an interest in revising the following points:

- Tightening up the requirement levels for limit values, particularly the energy limit value.
- Reviewing the need to amend/adjust the product group definition for restaurants. Tightening up the requirement levels for the proportion of organic food in restaurants.
- Tightening up the requirements for very problematic raw materials and problematic raw ingredients.
- Tightening up the requirement on the proportion of fish and shellfish from sustainable fishing
- Drawing up requirements for limit values for organic waste for restaurants.
- Reviewing the opportunity to reward the use of disinfection methods other than chlorine in pools.

Appendix 1

Climate zone map

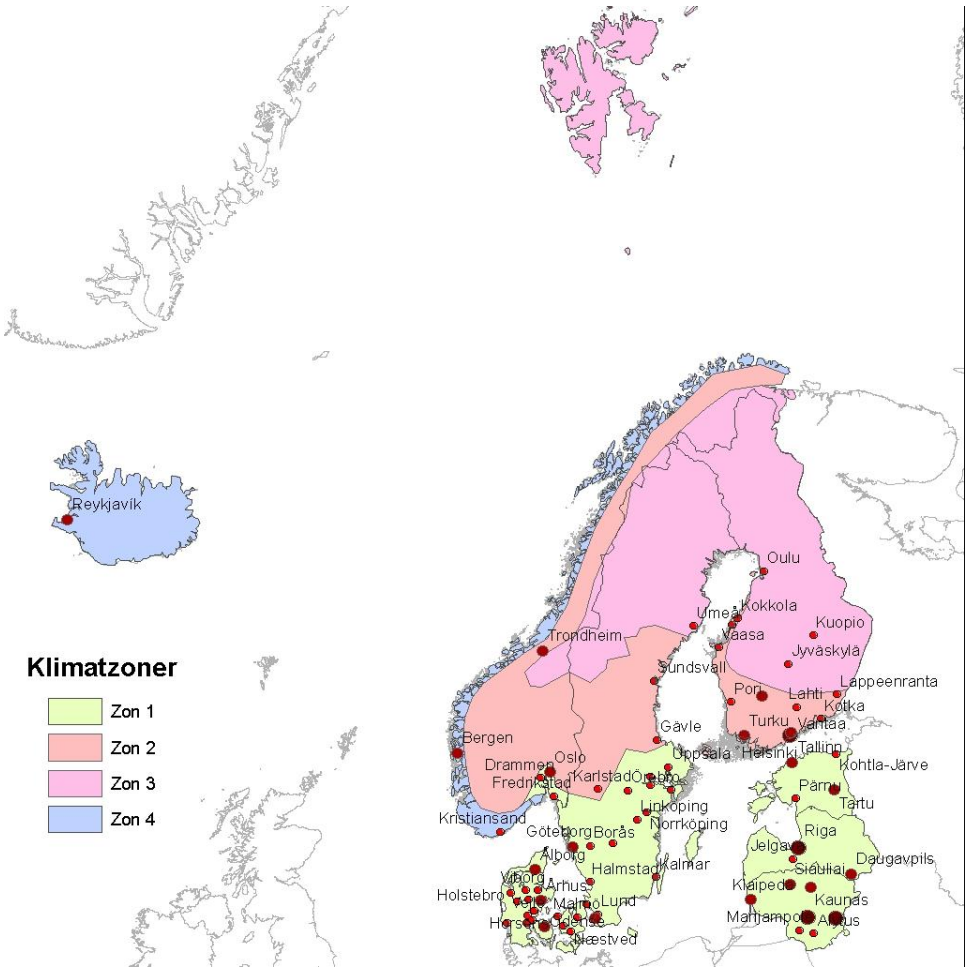


Figure 1: Climate zones, all countries

- Denmark counts as one zone, and is assumed to have the same climate as Sweden's zone 3 and the Baltic states.
- The Baltic states count as one zone, and are assumed to have the same climate as Sweden's zone 3 and Denmark.
- The proposed map splits Finland into two zones. The southern zone has the same climate as Sweden's zone 2, i.e. Central Sweden. Northern and Central Finland is taken as belonging to the same zone as Northern Sweden and the Polar and Arctic zone in Norway.
- Norway is generally divided into four zones[140]: the Warm Temperate zone, the Cold Temperate zone, the Polar zone and the Arctic zone, which includes Svalbard. In the energy tool, Norway is divided into three zones, with the Polar and Arctic zones

[140] Categorisation based on data from the Norwegian meteorological Institute (www.met.no)

counted as one and belonging to the same zone as Northern Sweden and Northern and Central Finland.

- Iceland counts as one zone, and is assumed to have the same climate as Norway's Warm Temperate zone, i.e. the coastal areas.

The zone divisions have been developed using data from RETScreen (www.retscreen.net), a program created by the Natural Resources Canada. Average monthly temperatures have been collected from a number of measuring stations in each country from 1983 onwards. Based on the temperatures from each station, a number of zones have been assigned for each country, depending on how much the temperatures vary. The measuring stations have then been sorted into the different zones and the average monthly temperatures for each zone have then been calculated. The degree days for each zone have then been produced, based on these average temperatures, see figure 1.

Appendix 2

Model values and calculations in the energy tool

Below is a description of how the energy tool calculates different target values, as a combination of the various assumed heat loss factors, hot water use and electricity use.

It should be noted that the purpose of the calculations is to give a target value that is somewhat better than the average for the various categories (around 30% will meet it). This means that assumptions have been made that can seem "poor", e.g. low level of heat exchange compared with the best possible, etc.

The values here are chosen such that they are considered to vary in a reasonable and fair way for the businesses that, for example, have a different season to what is normal, or in some other way have a business that deviates from the norm.

Heating

The use of heating is calculated by estimating ventilation losses, transmission losses, hot water and the impact of a pool. The calculations for these are shown below.

Ventilation losses

$$P_{vent} = q_m \times c_p \times (T_t - T_i) \; [kW]$$

- P_{vent} = Ventilation loss, energy per second
- q_m = Air flow in kg per second, 1 m^3 air weighs around 1.2 kg
- c_p = The heat capacity for air is a measure of how much thermal energy can be stored in air and is a constant that at 20°C is 1.005 kWs/kg°C
- T_t = Temperature of output air, i.e. the indoor temperature. The calculations use 19.5°C for all establishments. It is important to differentiate between the value used for the calculations and the perceived indoor temperature, which would normally be around 21-23°C.
- T_i = Temperature of input air, i.e. the outdoor temperature for the location in the month in question

According to the Swedish National Board of Housing, Building and Planning, premises should have an air flow (q_m) from ventilation of at least 0.32 litres per second when in use. Then further airflow is necessary, depending on the activity taking place on the premises. The following has been assumed for the different types of business:

- Hotels need a further 2 litres of air per second, guest and square metre when the guest is at the hotel
- Restaurants need a further 5 litres of air per second, serving and square metre when the guest is at the restaurant
- Conference facilities need a further 3 litres of air per second, delegate and square metre when the delegate visits the facility

$$Sch_LuftflodeLogi_Jan = Sch_AntalGastLogi_Jan \times LiterPerPerson_Logi$$

Sch_LuftflodeLogi_Jan – calculates how much air flow per second in the month of January (hotels), which depends on the number of visitors (*Sch_AntalGastLogi_Jan*) and the assumed values for the ventilation flow (*LiterPerPerson_Logi*) that the various businesses have.

- *Sch_LuftflodeLogi_Jan* – ventilation losses per second in January in a hotel
- *Sch_LuftflodeRest_Jan* – ventilation losses per second in January in a restaurant
- *Sch_LuftflodeKonf_Jan* – ventilation losses per second in January at a conference facility

- *Sch_AntalGastLogi_Jan* – No. of hotel visitors in the month of January
- *Sch_AntalGastRest_Jan* – No. of restaurant guests in the month of January
- *Sch_AntalGastKonf_Jan* – No. of conference guests in the month of January

Assumed air flow for different businesses:

- *LiterPerPerson_Logi* – Ventilation need that depends on type of business, here a hotel
- *LiterPerPerson_Rest* – Ventilation need that depends on type of business, here a restaurant
- *LiterPerPerson_Konf* – Ventilation need that depends on type of business, here a conference facility

ventForlustLogi_Jan = 8760 / 12 × (((OmsBasLogiJan × AreaLogi) + (0.3 × Sch_LuftflodeLogi_Jan)) × 1.2 × 1.005 × (19.5 - UteTemp_Jan) / 1000) × Vvx × LuftVaxl

ventForlustLogi_Jan – the amount of energy lost due to ventilation losses in January.

Explanation of formula:

- 8760/12 is the number of hours in a month, taking all months as the same length
- OmsBasLogiJan is the value 0.32 that was explained above. However, if there is less than 1 person per 50 m^2 this will instead be 0.1
- *AreaLogi* – The area of the business, here a hotel
- 1.2 is the density of air at 20°C which is 1.2 kg per square metre
- 1.005 is the heat capacity for air and is a measure of how much thermal energy can be stored in air. It is a constant that at 20°C is 1.005 kWs/kg°C
- 19.5 is the indoor temperature in °C as assumed for the calculations
- *UteTemp_Jan* – is the average outdoor temperature for the location in question in January
- To get an answer in MWh, the equation is divided by 1000
- Vvx is the assumed efficiency of the heat exchanger, here 0.8, which gives the loss (1-0.8)
- LuftVaxl is a factor for unregulated ventilation, here 2.27
- 0.3 is a factor that describes the extent to which the guest is in the establishment over 24 hours. It is a combination of the time the guest spends in the establishment and

how much of the establishment the guest visits. In hotels, for example, most guests will spend the night in their room, while in the evening and morning they can be expected to move throughout the building. The following times have been assumed for the different businesses:

- 0.3 i.e. 8 hours for hotels
- 0.04 i.e. 1 hour for restaurants
- 0.3 i.e. 8 hours for conference facilities

The ventilation losses are given in kW, i.e. energy loss per time. To calculate the ventilation loss for one month, this value is multiplied by the number of hours in a month (simplified here to 1/12 of the hours in a year).
At other times, the premises are assumed to be unoccupied and only need 0.32 litres of input air per second and square metre, according to the standards of the Swedish National Board of Housing, Building and Planning, unless they are completely empty, when the value of 0.1 is used instead.

It is also assumed that the establishment's ventilation system has a heat exchanger for input and output air. The efficiency of the heat exchanger is taken as 0.8, which means that heat in the output air is used to warm incoming air before it enters the room, which reduces ventilation losses by 80%.

Transmission losses

$P_{trans} = U \times A \times (T_i - T_u)$ [kW]

- P_{trans} is the transmission losses from the building through walls, roofs and windows per second
- U is the average U-value for the building's roof, walls and windows. The value has been calculated according to the above-mentioned assumptions and depends on the area and number of floors in the building
- A is the area exposed to the outdoors, i.e. facades and roofs that are open to the elements
- T_i is the indoor temperature which, for the sake of the calculations, is assumed to be 19.5°C. In fact, the indoor temperature is normally higher, at around 21-23°C, but 19.5 is a correction to take account of the fact that the difference between the temperatures of the surfaces (inner wall and outer wall) is in practice often rather smaller than the difference between the internal operational temperature and the outdoor temperature as measured at a meteorological station and without the influence of the building wall.
- T_u is the outdoor temperature, which is dependent on which zone the building is located in.

The following U-values are based on the values used by Swedish National Board of Housing, Building and Planning:

- Wall: 0.18 W/m²K

- Roof: 0.13 W/m²K
- Window: 1.3 W/m²K
- Floor: 0.15 W/m²K

Losses due to thermal bridges are assumed to account for 10% of the transmission losses.

Since the tool only requires a statement of area and number of floors for the building(s), each building is assumed to be square in order to calculate an average U-value for the whole building. From the statistics gathered as part of the project STIL2 Hotels, restaurants and public venues, the proportion of window area to facade area has been set at 10%. Each floor is assumed to be 3 metres high. A calculation is also made of heat loss through the floor. It is considered to be constant throughout the year at a ground temperature of 6°C.

Up to 6 buildings may be entered in the model. The type, number of floors and total area must be stated for each building. This affects transmission losses, since the wall area changes based on how many and what type of buildings make up the applicant establishment.

```
Dim Uvarde_Tak As Single
Uvarde_Tak = 0.13
Dim Uvarde_Vagg As Single
Uvarde_Tak = 0.18
Dim Uvarde_Fonster As Single
Uvarde_fonster = 1.3
Dim Uvarde_Golv As Single
Uvarde_Golv = 0.15

Sch_Area_Tak = Sch_AreaTotal / AntalVaningar
```

- *Sch_Area_Tak* – the roof area, which depends on the building's area and number of floors. This is also assumed to be the same as the floor area
- *Sch_AreaTotal* – the area of the building
- *AntalVaningar* – the number of floors in the building in question

```
If ByggTyp = 1 Then
AntalFriaVaggar = 4                    'standalone building
End If
If ByggTyp = 2 Then
AntalFriaVaggar = 3                    'gable building
End If
If ByggTyp = 2 Then
AntalFriaVaggar = 3                    'block building
End If
```

- *AntalFriaVaggar* – states how many sides of the building facade are open to the elements. This affects how much heat is transferred to the surrounding area

```
Dim Sch_Area_Fasad As Single
Sch_Area_Fasad = (Sch_Area_Tak ^0.5) x AntalFriaVaggar x (AntalVaningar x 3)
Dim Sch_Area_Vagg As Single
Sch_Area_Vagg = Sch_Area_Fasad x 0.9
Dim Sch_Area_Fonster As Single
Sch_Area_Fonster = Sch_Area_Fasad x 0.1
```

- *Sch_Area_Fasad* – the facade area, which depends on the area of the building, the number of sides open to the elements and the number of floors, based on the

assumption that all sections of the facade are the same size (derived from the roof area). Each floor is assumed to be 3 metres high

- *Sch_Area_Vagg* – the area of the facade that is made up of wall, i.e. an assumed 90%
- *Sch_Area_Fonster* – the area of the facade that is made up of windows, i.e. an assumed 10%

UA_Varde = (Sch_Area_Tak x Uvarde_Tak) + (Sch_Area_Vagg x Uvarde_Vagg) + (Sch_Area_Fonster x Uvarde_Fonster)

- *UA_Varde* – is the total U-value for all the sections of the building (roof, walls and windows) multiplied by the area of each section

- *TransForlustGolv = Uvarde_Golv x Sch_Area_Tak x (19.5 - 6)*

- *TransForlustGolv* – is the transmission loss through the floor. The area of the roof is used here, as it is assumed to be the same size as the floor.

- *TransForlust_Jan = ((UA_Varde x (19.5 - UteTemp_Jan) + TransForlustGolv) x (8760 / 12) / 1000) x KoldBrygg_Faktor*

- *TransForlust_Jan* – is the size of the transmission losses through the roof, walls and windows in January. The value varies depending on the outdoor temperature.

- *KoldBrygg_Faktor* is a factor that corrects for thermal bridges in the building, in this case 1.1.

To get an answer in MWh, the equation is divided by 1000. Each month is taken as having 8760/12 hours when calculating transmission losses.

Hot water

```
'åranvändning varmvatten logi:
Dim Total_VarmVatten_Logi As Single
Total_VarmVatten_Logi = AntalGast x 4.5
'åranvändning varmvatten Rest:
Dim Total_VarmVatten_Rest As Single
Total_VarmVatten_Rest = AntalPort x 0.25
'åranvändning varmvatten Konf:
Dim Total_VarmVatten_Konf As Single
Total_VarmVatten_Konf = AntalGastKonf x 1.1
'total varmvatten
Dim Sch_Total_VarmVatten_Bygg As Single
Sch_Total_VarmVatten_Bygg = Total_VarmVatten_Logi + Total_VarmVatten_Rest + Total_VarmVatten_Konf
```

- *Total_VarmVatten_Logi* – is the total energy needed for hot water, which depends on the number of annual visitors as follows:

- Hotel 4.5 kWh per guest
- Restaurant 0.25 kWh per guest
- Conference facility 1.1 kWh per delegate

- *Sch_Total_VarmVatten_Bygg* – is the total energy needed for hot water from the various businesses

Hot water use is taken to vary only according to the number of guests for the various businesses, which is why no separate temperature dependent monthly values are calculated.

Pool heating

```
Dim Sch_Varme_Pool_PerArea As Single
Sch_Varme_Pool_PerArea = 700
'VärmeAnvändningPool
Dim Sch_Varme_Pool As Single
Sch_Varme_Pool = Sch_Varme_Pool_PerArea * AreaPool
```

- *Sch_Varme_Pool* – Energy needed to heat the pool
- *Sch_Varme_Pool_PerArea* – Energy needed per square metre to heat the pool, in this case 700 kWh per square metre per year
- *AreaPool* – the total pool area

Electricity use

Electricity use in the target value building is calculated with the help of model values for the business, drawn from the STIL2 survey. In the model, the applicant enters the area for the various businesses in the building, which is then multiplied by the model values for each business. The target value building thus has the same area allocation between businesses as the building in the application.

If the building has a pool, the electricity use for this is added based on model values and the surface area of the pool. The calculation is made in the same way as for the pool's use of heating (see above).

If the building does catering, preparing food that is not eaten in the building (which does not affect the number of restaurant guests), this is entered in the model. The number of catering servings is multiplied by a set factor and added to the electricity use. Each catering serving gives 2 kWh electricity.

- *Sch_AreaLogi* is the same as the area stated for accommodation in the applicant building
- *Sch_El_Logi* is the model value for electricity use in premises providing accommodation (Logi)
- The same principle applies for Restaurants (Rest) and Conference facilities (Konf)

Sch_El_Total_MWh = ((Sch_El_Pool x Sch_AreaPool) + (Sch_El_Logi_Total x Sch_AreaLogi) + (Sch_El_Rest_Total x Sch_AreaRest) + (Sch_El_Konf_Total x Sch_AreaKonf) + (CateringPort x 2)) / 1000

The equation is divided by 1000 to get a value in MWh.

Electric heating

The applicant building states its total electricity use, including electric heating. In order for potential electric heating to be corrected for a normal year, some of the total stated electricity use must be separated into electric heating and "operating electricity". The model therefore calculates that all electricity use that exceeds the set model values for the business in the building is electric heating, and this is then corrected for a normal year. If the applicant building uses less energy than the model value, the building is assumed not to have electric heating and no normal year correction is applied to the electricity use.

- *El_MWh* is the electricity use stated for the applicant building
- *AreaLogi* is the area for accommodation, as stated for the applicant building
- *ElLogi* is the model value for electricity use in premises providing accommodation (Logi)
- The same principle applies for Restaurants (Rest) and Conference facilities (Konf)

If El_MWh < (((AreaLogi x ElLogi) + (AreaRest x ElRest) + (AreaKonf x ElKonf)) / 1000) Then
El_Verk_MWh = El_MWh
El_Varme_MWh = 0
Else:
El_Verk_MWh = (((AreaLogi x ElLogi) + (AreaRest x ElRest) + (AreaKonf x ElKonf)) / 1000)
El_Varme_MWh = El_MWh - (((AreaLogi x ElLogi) + (AreaRest x ElRest) + (AreaKonf x ElKonf)) / 1000)
End If

The equation is divided by 1000 to get a value in MWh.

The total electricity use, with the electric heating portion corrected for a normal year, will thus be:
(El_Verk_MWh + (El_Varme_MWh x NormalArsKorr))

Note that the target value building does not have any electric heating to be corrected for a normal year. The heating method in the target value building is always taken to be district heating.

Laundry

The following assumptions have been made for laundry firms:

Facilities that use a Nordic Ecolabelled laundry firm are weighted with 1.35 kWh/kg (and 310 g CO_2e/kg) for hotel laundry (bed linen and towels, usually only lightly soiled) and 2.45 kWh/kg (and 540 g CO_2e/kg) for restaurant laundry (tablecloths, napkins and so on from restaurants and catering kitchens. These textiles are often medium soiled but they may have stains that require relaundering).

Facilities that use a non-Nordic Ecolabelled laundry firm are weighted with 1.5 times the factors stated above.
If Tvatt_SvanJN = "Ja" Then
Tvatt_Hotellgods_EnergiFaktor = 1.35
Else: Tvatt_Hotellgods_EnergiFaktor = (1.35 x 1.5)
End If

If Tvatt_SvanJN = "Ja" Then
Tvatt_Restgods_EnergiFaktor = 2.45
Else: Tvatt_Restgods_EnergiFaktor = (2.45 x 1.5)
End If

Energi_Tvatt = ((Tvatt_Hotellgods_kg x Tvatt_Hotellgods_EnergiFaktor) + (Tvatt_Restgods_kg x Tvatt_Restgods_EnergiFaktor)) / 1000

The equation is divided by 1000 to get a value in MWh.

Laundry is added to the total energy use and is not separated into electricity and heating. The target value building always launders the same amount of laundry as the applicant building, but always uses a Nordic Ecolabelled laundry firm.

Appendix 3

Guidelines for assessing sustainability labelling for fish and shellfish
Nordic Ecolabelling sets requirements regarding standards for certified fish and shellfish. The requirements are summarised in this document which is updated on an ongoing basis. Each individual standard and certification system is examined by Nordic Ecolabelling to ensure that all the requirements are met.

General requirements regarding standards for sustainability labelling of fish and shellfish
The following requirements apply for both wild-caught and farmed fish:

- The standard must balance economic, environmental and social interests and comply with the conventions and guidelines of the FAO and the UN. Nordic Ecolabelling places particular emphasis on the standard having absolute criteria that protect against illegal fishing and depletion of natural biodiversity.
- The standard and documents related to the standard must be public.
- The standard must be drawn up in an open process in which the environmental, economic and social stakeholders have been invited to take part.
- The standard is evaluated and revised on a regular basis so that the process is developed and environmental impact reduced on an ongoing basis.

Requirements regarding standards for wild-caught fish and shellfish

- The standard must have criteria stating that the fished stocks must not be overfished and that they are to be preserved at a level that promotes the goal of optimum exploitation over the long term.
- Assessment of fish stock status and trends, and the impact of the fishing on surrounding ecosystems are to be based on adequate and scientifically relevant data/information.
- The standard must require consideration of ecosystems, i.e. assessment of the negative effects of the fishing.
- The standard must require a risk assessment and contain a requirement aimed at minimising bycatch/discards.

Requirements regarding farmed fish and shellfish

- The standard must contain criteria concerning environmental aspects that ensure sustainable farming, which includes requirements on fishing for feed purposes.
- Animal health and welfare.
- Food safety.

Requirements on certification systems and certification bodies

- The certification system must be transparent, have major national or international credibility and be able to verify that the requirements of the standard are met.
- The certification body must be impartial and trustworthy, i.e. certification must be carried out by an accredited, competent third party.
- The certification system must be suitable to verify that the requirements of the standard have been met. The methods used in certification must be replicable and applicable for fishing/farming. Certification must primarily take place in accordance with a specific standard.

- Checks must be carried out of the standard of the fishing/farming before the certificate is issued.
- The certified fishing/farming must be checked/audited on a regular basis.

Requirement regarding CoC (Chain of Custody) certification
A requirement for CoC may be evaluated if the requirements laid down by authorities require supplementing:

- The products must be traceable throughout the production chain with at least the catch zone, trade name (scientific name) and production method (farmed/wild) (ref.: Regulation 104/2000/EC which only applies to non-processed products).
- Chain of Custody certification is to be carried out by an accredited competent third party, as is the requirement for certification of the fishing.
- The system must set requirements for the CoC chain guaranteeing traceability, documentation and checks throughout the production chain.