

SCANDINAVIAN GREEN PUBLIC PROCUREMENT ALLIANCE ON NON-ROAD MOBILE MACHINERY

ADDENDUM 2020



APRIL 2019



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A Nordic cross-border joint procurement process push a green transition of the market for Non-Road Mobile Machinery

Introduction

The addendum adds to the Lessons Learned report of the Scandinavian Green Public Procurement Alliance of May 2019¹ and shares the knowledge and experiences from a collaboration between the cities of Oslo, Copenhagen, and Stockholm on a joint cross-border public procurement process. It is the wish and hope of the cities that the results inspire replication in other cities around the world, thus promoting carbon reduction on a broader scale within both the non-road mobile machinery sector and construction work in general.

The Carbon Neutral Cities Alliance's support in 2016 – 2019

The Scandinavian Green Public Procurement Alliance is a partnership between the City of Copenhagen, the City of Oslo, and the City of Stockholm funded by the Carbon Neutral Cities Alliance. The three cities have since 2016 worked together towards greening the non-road mobile machinery sector through a joint public procurement. In May 2019, the Carbon Neutral Cities Alliance-funded part of the Scandinavian Green Public Procurement Alliance-project ended. The result was a joint cross-border public procurement process between the City of Copenhagen and the City of Oslo, which has continued after the funding stopped. Due to legal and administrative differences between the countries it was not possible for the City of Stockholm to join the final procurement process.

This addendum presents the core result of the cities' collaboration: The Dynamic Purchasing System for zero and low emission wheel loaders. The Scandinavian Green Public Procurement Alliance's work has been facilitated by Gate 21 – a Danish organization enabling green transition through partnerships between municipalities, companies and research institutions.

The Joint Cross-Border Public Procurement Process between Oslo and Copenhagen

The cross-border collaboration between the cities of Oslo and Copenhagen has resulted in setting up a joint Dynamic Purchasing System. The system facilitates purchases of wheel loaders with zero or low emission drivelines for use within the cities' operations such as road construction, snow removal, waste handling and other versatile usages. Due to the flexibility of the Dynamic Purchasing System, the cities will have the possibility to purchase machines in the future that may not be currently available at the market but are under development.

Before settling on the Dynamic Purchasing System, the cities of Oslo, Copenhagen and Stockholm for a long time prepared for a Competitive Procedure with Negotiation. The Competitive Procedure with Negotiation was opted out because it demands more work before a procurement and would be less flexible in adapting minimum requirements and selection criteria, as the cities' demands, and the market develop.

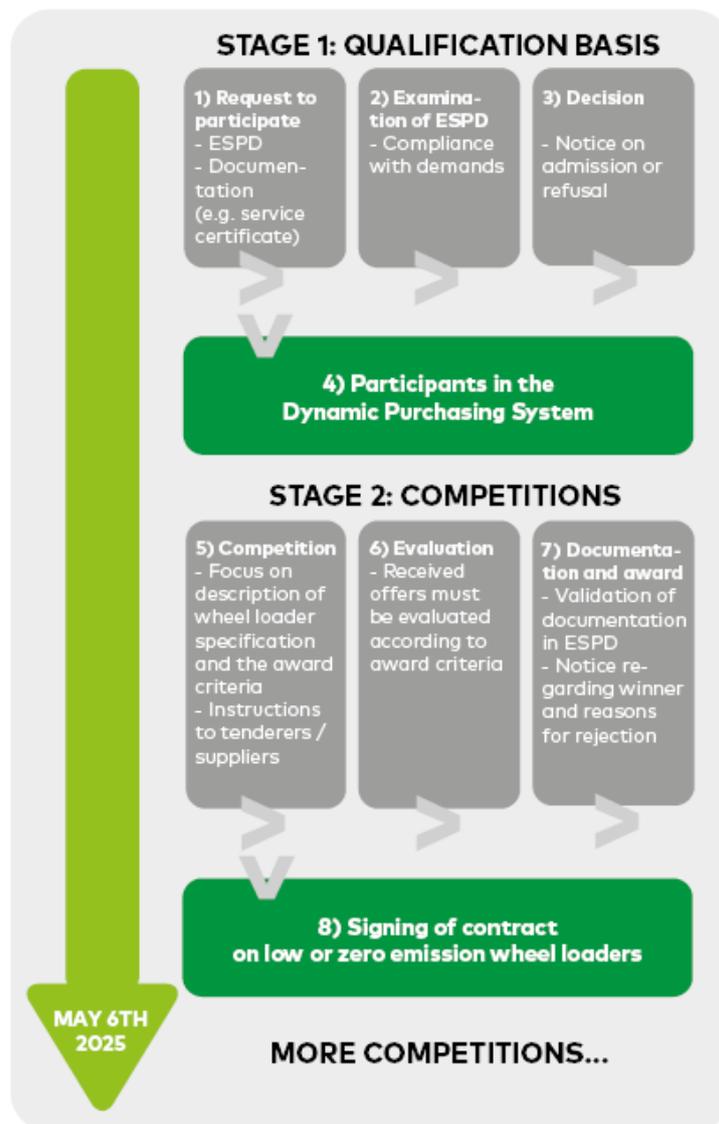
The Dynamic Purchasing System gives the flexibility to specify the wheel loader requirements at the time of a given procurement. Thus, the cities can aim at procuring the most environmentally friendly solutions available in the market at the time. A market analysis and market dialogue conducted by the alliance cities in 2019 showed a very limited or non-existent supply of small zero or low emission wheel

¹ <https://www.gate21.dk/wp-content/uploads/2020/06/SGPPA-Lessons-Learned-Report-020519.pdf>

loaders in the market². Large machines with this technology were nonexistent. With a Dynamic Purchasing System, the cities can signal to the market the growing demand for emission free machines, thus preparing the market for tenders to come.

The Dynamic Purchasing System is a procurement procedure that runs over several years. During the running time of the system, specified by the City of Copenhagen and the City of Oslo, suppliers continuously can be approved and thereafter participate in specific competitions conducted by the cities. There is no limit to the number of suppliers that can join the Dynamic Purchasing System. The system is hosted on the web-based platform Mercell³.

The Dynamic Procurement System is a two-stage system. First, suppliers request to be approved as suppliers based on the qualification process, and secondly, competitions regarding a specific contract will be presented in the system.



² <https://www.mercell.com/en/tender/100482719/market-dialogue-regarding-joint-procurement-of-non-road-mobile-machinery-nrmm-for-oslo-and-copenhagen-tender.aspx>

³ <https://www.mercell.com/en/tender/104836620/dynamic-purchasing-system-of-non-road-mobile-machinery-tender.aspx>

Stage 1: Qualification basis

It is free for suppliers to be admitted to the Dynamic Purchasing System and it is possible to apply for participation on an ongoing basis until the 6th of May 2025.

To be admitted as a participant in the Dynamic Purchasing System, the suppliers must live up to the criteria of the Stage 1: Qualification basis.

First, the applicants must fill out an European Single Procurement Document⁴ (ESPD) which is the supplier's self-declaration that they fulfill the qualification criteria and comply with tax regulations etc.

The applicants are obligated to have the technical and professional ability through technical experience. The City of Copenhagen and the City of Oslo can exclude a supplier without this experience. The applying supplier must provide documentation that the supplier has delivered a machine and services like the scope presented in the DPS.

Documentation example:

- must include both sales, service, and repair
- is a delivery of a non-road mobile machine (excavators, dumpers, wheel loaders etc.)
- must have been completed or substantially completed within the last three years of the competition

Secondly, the Stage 1 Qualification basis also consists of a description of the supplier's general green profile and focus. The suppliers must provide a description of their green focus in the context of similar non-road mobile machines as presented in the Wheel Loader Specification (see below). The description does not require that the supplier has a machine on the market with low or zero emission.

Mid 2020, five suppliers of Non-Road Mobile Machinery have been admitted as participants in the Dynamic Purchasing System.

Stage 2: Competition

During the running time of the Dynamic Purchasing System the cities of Copenhagen and Oslo can offer several, different competitions in the system. The cities will launch individual competitions through the Dynamic Purchasing System. The suppliers in the system will be notified and can prepare their bidding.

The competition stage focuses on the specific machines being procured. Wheel loaders come in many sizes for versatile usage. The zero and low emission criteria have been developed by the contracting authorities for different types of wheel loaders. Depending on the city's need of machine size and usage, for each competition it is necessary to allow the most appropriate technology to reduce the carbon footprint. A specified Wheel Loader Specification will be prepared for each individual Competition and any additional minimum requirements will be defined and specified therein. The suppliers are obligated to fulfil the minimum requirements which will apply for all competitions listed in the Wheel Loader Specification.

⁴ The European single procurement document (ESPD) is a self-declaration form used in public procurement procedures. Before the introduction of the ESPD, companies had to submit various documents proving that they can participate in a procurement procedure (e.g. on having paid taxes, on not having been convicted of criminal activity). Thanks to the ESPD, companies are able to meet these obligations with a single self-declaration form – the ESPD. https://ec.europa.eu/growth/single-market/public-procurement/digital/espd_en

Technical requirements: Zero or Low Emission Selection Criteria for Wheel Loaders

The list below shows the developed driveline requirements for wheel loaders, where 3.1 *Zero emission* or 4.1 *Low emission* are minimum requirements (mandatory).

Zero emission			
3.1	Driveline requirements	Minimum requirement	Zero emission operation/100 % battery electric driveline (no tailpipe emission (no tailpipe)).
3.2	Driveline requirements	Requirement	Lithium based battery pack.
3.3	Driveline requirements	Requirement	Zero emission operation/100 % fuel cell driveline (no tailpipe emission (no tailpipe)).
3.4	Driveline requirements	Requirement	Warranty for machine exclusive battery pack and/or fuel cell: XX years/operation hours per year.
3.5	Driveline requirements	Requirement	Warranty for battery pack: XX years/operation hours per year.
3.6	Driveline requirements	Requirement	Warranty for fuel cell pack: XX years/operation hours per year.
3.7	Driveline requirements	Requirement	Operation hours for battery pack from 100 % state of charge - measured by OEM specified mild and hard operation cycle: XX hours/minutes.
3.8	Driveline requirements	Requirement	Operation hours for battery pack from 80 % state of charge - measured by OEM specified mild and hard operation cycle: XX hours/minutes.
Low emission			
4.1	Driveline requirements	Minimum requirement	EU STAGE engine X (number) with sub version X (letter) (for the driveline that involves an internal combustion engine).
4.2	Driveline requirements	Requirement	Hybrid driveline with minimum XX % electric based driveline and maximum XX % combustion engine operation share.
4.3	Driveline requirements	Requirement	Engine either certified or with local dealer warranty for operation with minimum 85% synthetic fuel blends (methanol, ethanol).
4.4	Driveline requirements	Requirement	Engine either certified or with local dealer warranty for operation with up to 100% (GTL or HVO).
4.5	Driveline requirements	Requirement	Engine certified for operation with 100 % biogas (based on bio-CNG or bio-LNG).
4.6	Driveline requirements	Requirement	Warranty for machine exclusive battery pack: XX years/operation hours per year.

Award criteria

The contract will be awarded based on the award criterion “best price-quality ratio”. In the evaluation of the suppliers’ offers, the contracting authorities the Cities of Copenhagen and Oslo will use the following criteria with the specified weighting:

1. Price [weight 30 - 50%]
2. Environment/emission [weight 0 - 50%]
3. Fulfilment of Wheel Loader Specification [weight 10 – 50 %]
4. Service Agreement [weight 0-30 %]

When each offer has been evaluated, a final, overall grade will be calculated for each offer based on the evaluation for each sub-criterion and the weighting of the sub-criteria.

Find the full appendix *Wheel Loader Specification and Price List* here:

<https://www.gate21.dk/project/scandinavian-green-public-procurement-alliance-on-non-road-mobile-machinery/>

No competitions have yet been launched, but the first competitions in the Dynamic Purchasing System are expected in the course of 2020 or early 2021.

Expected use of the Dynamic Purchasing System

The City of Copenhagen expects to replace up to seven wheel loaders within the next four years. The Technical and Environmental Department is the primary stakeholder in the City of Copenhagen.

The City of Oslo will make their planned purchases through the Agency for Waste Management. The Agency needs to replace between two to four wheel loaders within the next four years.

Both cities expect to begin purchasing through the Dynamic Purchasing System in 2020 or 2021.

Other departments in the municipality of Oslo can use the Dynamic Purchasing System for procuring wheel loaders. Nevertheless, the municipality of Oslo has a decentralized ordering function, which means that the tendering department finances, prepares documents and conducts competition. This is a current barrier for using the system, as the departments prepares all the document templates, then send this to a representative in the Central Procurement Unit, owning the single access to the Dynamic Purchasing System on the Merccell platform, who then publishes the competition.

It is the wish of both the City of Copenhagen and the City of Oslo that other cities and municipalities internationally use the zero or low emission requirements and criteria (table 1) as an inspiration for their own procurement for greener non-road mobile machinery.

Good-to-know for other cities

Advantages and disadvantages of cross-border Public Procurement Process

The specific advantages of the cross-border joint procurement process between Copenhagen and Oslo and setting-up of the Dynamic Purchasing System are:

- The market meets a public need gathered in one platform which sparks their interest in developing products meeting these needs.
- Having the dialogue with multiple market representatives in one platform makes the work of the public procurers easier.
- Creating relations and experiences with a city with similar needs.

The disadvantages, or rather inconveniences, of cross-border public procurement are multiple but must be measured against the long-term effect on carbon reduction. The specific disadvantages are:

- If the cities do not subscribe to the same procurement platform, it takes time and effort to coordinate both cities' engagement on the same platform as has been the case for Copenhagen and Oslo.
- Cross-border collaboration demands a common language which in most cases would be English. Nevertheless, for some locally operating manufacturers and suppliers, working in English is difficult.
- Making sure that a cross-border procurement system is compliant with both national and international legislation and practices takes a lot of effort.

The following preliminary conclusions on the cross-border collaboration between Oslo and Copenhagen stand out:

- Cities uniting their efforts in a coordinated market dialogue show the market a readiness among public procurers to reduce carbon footprint in a still highly carbonized non-road mobile machinery sector, which incentivizes the market to act on it.
- An actual cross-border public procurement process as well as cities' common criteria for construction sites emphasizes the cities readiness to act on their green ambitions.
- Cross-border collaboration takes time as well as does changing the set-up of public procurement. The cities' business case is therefore not calculable until some years from now when the planned purchases have been completed and effect can be measured environmentally and economically.

Status for the three municipalities of the Scandinavian Green Public Procurement Alliance

The following gives a short status of the developments in greening the construction and the non-road mobile machinery sectors in the City of Stockholm, the City of Oslo and the City of Copenhagen, respectively.

The three cities entering the Scandinavian Green Public Procurement Alliance in 2016 all have ambitious goals for carbon reduction. Copenhagen has a goal of being the first CO₂ neutral capital city in the world by 2025, while Oslo has an ambition to cut CO₂ emissions by 95% in 2030. Stockholm aims at becoming fossil-fuel free in 2040. Construction sites in the cities and the non-road mobile machinery offer a large potential for carbon reductions as well as NO_x and particulate matter emissions⁵ and thus becomes important in reaching the cities ambitious climate goals.

City of Oslo

Climate and environmental requirements for the City of Oslo's construction sites (2019)

The City of Oslo has developed and in 2019 implemented a set of common requirements for construction and civil engineering projects. The requirements are that all municipal construction works shall be fossil-free and, within 2025, zero emission.

Throughout the last three years, the City of Oslo has been in an ongoing dialogue with the market to shape their procurement strategy and criteria. As a result, Espen Nicolaysen, Head of the Sustainability Section in the Central Procurement Unit in the City of Oslo, announced in 2019 that the Oslo City Government has decided to implement a new award criteria, applying 20-30% weighting in environmental performance, 50% of which is related to zero-emission non-road mobile machines.⁶

From 2025, minimum requirements will be introduced for emission-free construction machinery.

In 2019, the City of Oslo also received 8 million NOK from the Norwegian Environment Agency for the transition of the city's own smaller machines (less than 10,000 liters per year) to electric operation.

⁵ See Market Analysis of the Non-Road Mobile Machinery Sector for further elaboration the carbon reductions and environmental potential of greening the sector (https://www.gate21.dk/wp-content/uploads/2017/06/Market-Analysis-for-Non-Road-Mobile-Machinery-Sector_FINAL.pdf)

See also: <https://www.climate-kic.org/wp-content/uploads/2019/11/Clean-Construction-9-October-Workshop-Summary-1.pdf>

⁶ <https://www.climate-kic.org/in-detail/clean-and-healthy-construction/>

City of Copenhagen

Strategic green focus on construction, working machines and partnerships

Emissions from non-road mobile machines are estimated to emit around 80,000 tonnes of CO₂ per year in Copenhagen. Converting today's predominant use of fossil diesel to fossil or emission-free alternatives is a significant contribution to achieving the goal of CO₂ neutrality in Copenhagen in 2025. Fossil-free is understood as non-road mobile machines that use biofuels instead of fossil diesel. Emission-free means machines that are operated, for example, on electricity or hydrogen, and thus do not themselves emit CO₂ or particles.

The administration in the City of Copenhagen is working strategically on:

- 1) adapting its own working machines to fossil- and emission-free operation
- 2) tendering own pilot civil works and construction projects with those requirements
- 3) influencing the market in a fossil and emission-free direction, both municipally, nationally, and internationally
- 4) working to change the national tax charges for biofuels.

In Budget 2020 for the City of Copenhagen, funds are allocated to 1) and 2).

A collaboration forum has been established as a platform for dialogue and partnerships to promote fossil-free construction sites in the city.

The City of Copenhagen participates in a variety of partnerships with other cities in the Scandinavian region, in Europe and globally. C40 and CNCA are two important platforms where the city is actively engaged, and where future collaborations on greening the construction sector and the non-road mobile machinery market can reduce carbon footprint even more.

City of Stockholm

Common environmental demands for construction works between the cities of Malmö, Gothenburg, and Stockholm (2018)

Stockholm had to withdraw from the joint cross-border public procurement process with Copenhagen and Oslo in late 2018 due to differences between Stockholm and the two other cities in legal handling of procurement affairs and ownership of machines. The City of Stockholm to a larger extent procures services and thus owns fewer machines.

Nevertheless, the green ambitions in this area are high and in late 2018, the three largest cities of Sweden; Stockholm, Gothenburg, and Malmö, committed themselves to a common set of environmental demands for construction works.

These requirements aim to achieve environmental benefits in a cost-effective way in the execution of contracts. The requirements are an agreement between Gothenburg, Malmö and Stockholm City as well as the Swedish Transport Administration and apply to all procurement of contracts that these organizations do.

The requirements apply to the contractor's organization and the business of the contractor conducts on behalf of the client. The requirements also apply to all subcontractors in the supply chain, their organizations, and the activities of the

subcontractors within the framework of the activity to which the order from the client applies. The demands have primarily been developed for contracting services, such as construction, operation, and maintenance of infrastructure, as well as ground and civil engineering works.⁷

Relevant for the non-road mobile machinery sector are the three Swedish cities' demands for transport vehicles and non-road mobile machines:

At least 20% of the total energy consumption of vehicles and work machines, respectively, must consist of electricity from renewable energy sources and/or sustainable highly intermixed and sustainable clean biofuels that are not subject to a reduction obligation. Renewable energy sources are biofuels, geothermal energy, solar energy, hydropower, wind power and wave energy.⁸

https://www.trafikverket.se/contentassets/f8269da30de047a38b10a76f80fcb43c/gem_miljokrav_entreprender_20180302.pdf

⁷ Translated from: Gemensamme miljökrav för entreprenader 2018

https://www.trafikverket.se/contentassets/f8269da30de047a38b10a76f80fcb43c/gem_miljokrav_entreprender_20180302.pdf

⁸ Check out footnote number 5

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Further information

[Procurement material](#)

[Lessons Learned Report of the Scandinavia Green Public Procurement Alliance](#)

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ADDENDUM MAY 2019-2020

