#### **PROCURING PARTY** City of Helsinki

#### **OBJECT OF PROCUREMENT**

The object of the procurement is the asphalt paving projects carried out by Helsinki City Public Enterprise Stara, which is annually put out to tender. This case description regards tenders for 2020-2021 and the development of surfacing works. The calls for tenders for Stara's asphalt projects are published annually in two rounds at the beginning of February. The projects are put out to tender in eight separate procurements so that Stara has agreements separately for small (approximately <1,000 m2/site) and large (>1,000 m2/site) projects in all areas of the three construction units as well as agreements for SMA surfacing works (asphalt mastic, surface course material) and cast asphalt concrete works covering the entire city area. In addition, two surfacing projects have also been put out to tender to Kaupunkiliikenne Oy (Metropolitan Area Transport Ltd) with documents of a similar content.

> **PROCUREMENT VALUE** Average EUR 6 million per year

**PROCUREMENT PROCEDURE** Open procurement procedure, EU procurement

# Case: Promoting low-carbon solutions in asphalt paving projects

## The aim is to increase awareness of the environmental criteria.

were spread and 71,000 in the following year. To take the environmental and climate effects of the procurement object into account, Stara's asphalt paving projects works aimed to reduce the effects on the climate and the requirements were drafted for the service description. In this procurement, the environment. To achieve this objective, the chosen contractor was required to have an City of Helsinki construction services Stara's surfacing works are part of the Canemure criterion for overall economic advantage is the lowest price. Qualitative aspects have ambitious attitude and to strive towards more low-carbon and environmentally friendly project as a pilot subject. The aim of the project is to develop low-carbon procurements been taken into account in the suitability requirements set for the tenderer as well as in solutions in surfacing works. At the same time, the aim was to raise people's awareness in and test the criteria and calculation methods for the carbon footprint. The project the minimum requirements of the procurement and the terms and conditions of the the industry of environmental criteria and reporting. supports the Carbon-neutral Helsinki 2030 Action Plan and its practical implementation. procurement agreement.

The aim of the development work was to especially examine the possibilities and tools for calculating the carbon footprint in the procurement of surfacing projects as well as to hear the views on the market on emission calculations. No maximum limits for greenhouse gas emissions were set in the call for tenders. The particularly important part

The estimated duration from the start of the procurement preparation to signing the in the pilot procurement was to gather information on the amount of emissions agreement was five months. In the preparation of the procurement, a balance had to be generated by the surfacing industry at each stage of the life cycle. struck between the various requirements. The aim of the tender was to create ambitious requirements without compromising the number of tenders and reasonable Comprehensive competence through prices. In Helsinki, there are differences between the surfacing project operators, e.g. in the driving power of vehicles and asphalt pavement stations. In the preparation of the cooperation procurement, it became a concern that the investments in equipment required by the The City Public Enterprise Stara, which is responsible for tendering, participated in the environmental requirements are too demanding for small operators, in which case said preparation of the procurement, as did the Urban Environment Division's maintenance requirements would favour larger tenderers. team for public areas and Kaupunkiliikenne (Metropolitan Area Transport Ltd), which





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the discussions helpful.











are the clients. Stara takes care of the streets, parks, building and natural areas of the City of Helsinki as well as manages the city's technical procurements and logistics.

The experts of the Canemure project (Towards Carbon-Neutral Municipalities and Regions) of the Urban Environment Division participated in the preparation of the procurement from the low-carbon perspective. In addition, the Finnish Transport Infrastructure Agency and the state's sustainable development company, Motiva, were consulted, as they had successfully developed the Finnish Transport Infrastructure Agency's surfacing project procurements in cooperation to take environmental effects better into account.

## The City of Helsinki's carbon-neutrality objective governs procurements

The City of Helsinki aims to be carbon-neutral by 2030, and to achieve this goal, climate-related matters are essential in the City's procurements. The existing procurement criteria are developed in the procurement process and new ones are introduced that take the lifecycle, circular economy and climate perspective into account better. A significant portion of the city's carbon footprint consists of infrastructure and building construction, which are subject to several measures to reduce emissions. Asphalt pavement is the most common surface course material in the city on vehicle lanes, bicycle paths and sidewalks, and due to wear, the pavement needs to be replaced from time to time. In 2020, approximately 80,000 tonnes of asphalt

## Understanding the developments in the industry through a market survey

**Environmental plans:** 

- The contractor's company has an environmental programme or a certified environmental system that explains the company's methods of identifying, reducing and monitoring its environmental impact.
- The contractor shall prepare an environmental plan for the project, setting out the procedures required for environmental management. If requested, the winning tenderer shall submit an agreement-specific environmental plan before the decision is made.

# Criteria and grounds for comparison for the

procurement target

expected, but the spare machines were older.



To evaluate the market situation and intensify dialogue, in-depth agreement monitoring discussions took place with the agreement partners in autumn 2020. The discussions covered the project-specific environmental plans as well as their implementation. In addition, suppliers were asked to fill in a CO2 table which collected data for the calculation of the carbon footprint. During the agreement monitoring meeting, it was established how the suppliers felt about filling in the table. At the same time, the challenges faced by the operators in implementing environmental requirements were identified. During the discussion, it was possible to verify that the environmental plans had been implemented and provide valuable information for drafting environmental requirements for the following year's projects. Both the client and the supplier found

During the agreement period, in early 2021, a market survey was sent to existing and potential tenderers in order to map the current level of equipment of surfacing contractors and companies interested in projects, their capacity to meet future stricter environmental requirements and the emission reduction measures considered vital by companies. The survey revealed that the contractors' equipment was mostly newer than

### Environmental and sustainability requirements



"What was particularly successful in the experiment was the projectspecific environmental plan to improve monitoring the environmental requirements."

#### Crushed asphalt

The crushed asphalt used in the mixture shall comply with the asphalt standards of 2017 and the product and quality requirements of this project, the unit price of the mixture is fixed when the amount of crushed asphalt (RC-%) is in accordance with the Asphalt standards of 2017. Crushed asphalt in accordance with Asphalt standards 2017, Section 9, Crushed asphalt can be used in the asphalt mixtures for this project. The client has the possibility to order asphalt mixtures separately, where the maximum amount of crushed asphalt exceeds the maximum amount mentioned in Section 9, Crushed asphalt, in the Asphalt standards of 2017 (The maximum amount in the surface course is 50 per cent, and 70 per cent in other bound courses). Asphalt mixtures shall be CE labelled.

#### Equipment

The heavy transport equipment used in the project shall at least meet the EURO III class emission requirements, and 30 per cent of the heavy transport equipment shall meet the EUROV class emission requirements. 20 per cent of the machinery shall meet the STAGE III B class requirements, excluding asphalt spreaders, road graders and land rollers.

#### Social responsibility

The contractor shall personally comply and ensure that the supplier's subcontractors and material suppliers comply with the provisions of the International Labour Organisation's (ILO) treaties and the UN Convention on the Rights of the Child in the manufacture of the product and/or raw material being tendered, if said provisions have not yet been implemented in the national legislation. If requested, the winning tenderer shall submit a report on the fulfilment of the ethical responsibility of material production with a suitable certificate or self-assessment before the decision is made.

### Terms and conditions of the agreement

- The contractor shall fill in the CO2 variable table for the agreed surfacing project sites. The table includes the stages of the lifecycle, AI–A5 (raw materials, transport to manufacture, product manufacture, transport to construction site and construction site operations). The form collects data on the contractors' carbon footprint and the factors that influence it. The data provided during the agreement period shall not affect the carrying out of the project in progress and all the data shall be processed confidentially. Objects to be reported will be agreed separately.
- The contractor is required to report annually on how much recycled material the supplier receives from the client and how much it is used in the production of the mixture in the client's agreement.
- During the agreement period, separate test sites can be implemented separately with the mixture qualities deviating from the call for tenders, e.g. low-temperature



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## CASE: PROMOTING LOW-CARBON SOLUTIONS IN SURFACING PROJECTS



- Forced Labour Conventions (Conventions 29 and 105);
- Minimum Wage Fixing Convention (Convention 131);
- Hours of Work Conventions (Conventions 1 and 30);
- Freedom of Association Convention and Right to Organise and Collective Bargaining Convention (freedom of unionisation, application of the principles of the right to organise and the right to collective bargaining (Conventions 87 and 98));
- Equal Remuneration and Discrimination Conventions (Conventions 100 and 111);
- Minimum Age Convention (Convention 138);
- Radiation Protection, Occupational Safety and Health and Chemicals Conventions (Conventions 115, 155 and 170);
- Termination of Employment Convention (Convention 158)
- Worst Forms of Child Labour Convention (Convention 182).

## The development work of the carbon footprint calculation and low-temperature asphalt is still in progress

In the last few years, the asphalt industry in Finland has carried out a comparison of the calculation tools. In the comparison, it has been noted that the comparative calculations carried out with the same initial values but with different tools produced a difference of even greater than 25 per cent between the calculation results. Factors that influence the difference are, for example, the emission inventory data used as the basis of different calculation tools, the origin or calculation data of which may not be changeable on a case-by-case basis or even transparently available. In addition, what is essential is the accuracy and verifiability of the data used in the calculation, e.g. in terms of fuel consumption.

In this pilot procurement, the contractors reported emission data and thus preliminary experience in the carbon footprint calculation was gained. However, this project had no impact on the actual tendering process.

Asphalting aims to find cost benefits with resource-wise material usage and energy efficiency improvements, which is why the industry has taken many measures to reduce the amount of fuel consumed in asphalt production. In the case of mixture production and emissions from transport and spreading equipment, experiments asphalting. Key emission reduction measures for asphalting can be achieved, for example, by recycling asphalt as a raw material for asphalt mixtures, by producing the asphalt mixtures at lower temperatures and by using biofuels in the asphalt station and spreading equipment.

In the preparation of the procurement, the readiness to carry out projects using low-temperature asphalt was also identified. More of these experiments are necessary, but the contractors would like large sites to be used in them, as the station's temperature regulation is not a simple task, which makes it challenging to produce small amounts of asphalt mixture. As the manufacture process develops, low-temperature asphalt will also be introduced in Helsinki, should the quality be deemed good enough.

## The procurement strengthened the dialogue between the client and supplier

During the agreement period, the data collected for the implementation of the environmental plans and emission calculations were reviewed with the agreement partners. The contractors felt positively about the environmental criteria and reporting. The dialogue with the supplier was considered particularly important, as it outlines the challenges that the supplier may face in achieving the environmental objectives. It also provides a deeper understanding of the market situation.

The emission classes of the equipment were discussed extensively and the final requirements did not seem too demanding for the industry. Even prior to the Canemure pilot, the repaving procurements had already utilised the equipment requirements so that a certain percentage had had to meet the requirements (Euro V and Stage IIIB). However, it was challenging to monitor the percentages, and in the tenders for 2022, said percentages have been completely abandoned.

What was particularly successful in the experiment was the project-specific environmental plan to improve monitoring the environmental requirements. Prior to this, only the company's environmental plan was in use. In the procurement of 2020, the content of the environmental plan had not yet been defined, but already the following year, the model was offered, which addresses the things the environmental plan should respond to.















Helsinki is a pioneer in using recycled asphalt. It was clarified in the procurement that it is allowed to use recycled asphalt to the maximum extent as per the standards (good practices and quality requirements developed by the industry). The use of recycled asphalt did not affect the costs of the projects.

## Emission limits for surfacing works and equipment requirements for service agreements

The City of Helsinki has closely followed the work of the PANK Environment Committee and the introduction of the emission calculation tool. The tool has been selected, and the contractors are implementing it as we speak. Initially, the purpose is to obtain average data for several types of asphalt in the CO2 database. Piloting the tool and the benefits gained from it for tendering and calculating the implementation are welcome things. In the building construction industry, it is already possible to set emission limits. Similar developments are also hoped for in asphalting, so more lifecycle pilots are necessary for assessing emissions.

The aim for the procurement was to opt for asphalt, which will last as long as The project-specific environmental plan adopted in the procurement was considered possible and, in addition, low-temperature or recycled asphalt can more often be a successful way to increase the dialogue between the client and supplier as well as to used in streets with little traffic. In future procurements, it is recommended that the monitor the implementation of the environmental objectives. The outcome of the amount of low-temperature asphalt be estimated already in the call for tenders so objectives is discussed annually in the follow-up meeting of the agreement. that this is included in the prices to be tendered.

In the past, it was burdensome to monitor the machinery meeting the Stricter environmental requirements are expected from the client in the future. The environmental requirements, as the requirement only applied to a certain equipment requirements should also be noted in the service requirements between percentage of the machinery. This changed in 2022 when the percentages were the Urban Environment Division and Stara. In the future, all projects procured by the abandoned due to the requirements of the Green Deal. city will be required to have equipment as per the Green Deal on zero-emission worksites. In the projects of 2022, Stage IIIB and Euro V requirements as per the LIFE17 IPC/FI/000002 LIFE-IP CANEMURE-FINLAND Green Deal were already in use. In the future, the Green Deal will also require the This procurement case has been carried out with the financial contribution of the LIFE Programme of the European Union. The procurement case reflects use of fossil-free fuels and verifying the spent fuel, among other things. only the CANEMURE project's view, and the EASME/Commission is not responsible for any use that may be made of the information it contains.

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### Experts' know-how increased, but more product-specific data is needed

In the preparation of the procurement, the know-how of experts increased, and tried and tested functions have been applied to subsequent surfacing procurements. However, it is important to be aware that a major challenge in the industry is often the conflicting objectives. High costs, among other things, may limit choices that are more sustainable for the climate, such as the use of recycled and low-temperature asphalt.

In the pilot procurement process, it became known that transporting mixtures does

reductions are achieved through the production of mixtures and the selection of raw

materials. Low-temperature and recycled asphalt are considered potential options in

not play a significant role in terms of emissions, but the most significant emission

## promoting environmental sustainability. More detailed, product-specific data on materials is needed to make more choices that are sustainable for the climate. Project-specific environmental plans support

## cooperation











