

Green ambulance procurement in Stockholm

STOCKHOLM COUNTY COUNCIL, SWEDEN

Procurement objectives

Stockholm County Council's (SLL) vision for introducing a green ambulance was born in 2005. A pilot study examined the technical solutions available and the extra costs of finding an eco-friendly solution. The procurement action faced a number of obstacles (ambulances are subject to numerous standards, rules and other requirements, and ordered in small numbers) with no bids presented in the first open procurement round in 2007.

An innovative pre-procurement procedure was needed, so a dialogue was initiated with several ambulance builders to discuss the possibility of developing an ambulance powered by renewable fuel. A negotiated procedure followed in 2008. A new model from Mercedes-Benz powered by bio-gas and meeting SLL's weight limit, load capacity and range requirements went into use in May 2009.

Background

Environment Step 5 ([Miljö Steg 5](#)) is the SLL environmental programme for 2007 to 2011, with tangible environmental goals and progress reported annually. Regarding transport, by the end of 2011, SLL aims to have at least half of its passenger and goods transport running on renewable fuels; to greatly reduce public transport emissions of particulates and nitrogen oxides; and to reduce noise.

SLL's procurement of a green ambulance in 2009 is part of an endeavour to reduce the environmental impact of its ambulance operations. It has had positive knock-on effects on subsequent procurement actions of a similar nature.



Criteria used

Stockholm's green ambulance was the first in the world and was the result of a partnership between SLL and Ambulanssjukvården i Storstockholm AB (AISAB), a company wholly-owned by the Council. The green ambulance runs on biogas. The use of environmentally hazardous substances was reduced wherever technically and economically feasible. Sustainability criteria were included in the call for tender as follows:

Subject matter of the contract:

Procurement of a green ambulance

Technical specifications:

These were worked out in a dialogue process with the suppliers since no bids were presented in the first open procurement round. The supplier dialogue process was a constructive process where new technical solutions were found and as a result the following technical specifications were possible to achieve.

- Only natural non environmentally hazardous materials used for the insulation.
- PVC-free floor mat. Based on several studies and LCAs carried out for PVC, the Stockholm County Council, has a political decision (since 1997) to phase out PVC, both from an environmental and health perspective. For example the production of PVC includes the use of substances that are hazardous to health and the environment – such as halogens, mercury, dioxins and phthalates
- Adhesive free of solvents and isocyanates (these substances are primarily a work-environment problem, as they can cause asthma)
- Halogen and PVC-free electricity cable (halogens break down ozone)
- Tyres without harmful highly-aromatic (HA) oils (HA oils get into lakes and oceans via surface water and are toxic to aquatic organisms)
- Stud-free tyres (studded tyres contribute to high particle levels in the air during the winter)
- Aerodynamic alarm/light system with LEDs (uses 5-10% less fuel)
- Capability to run on renewable fuels.

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Results

Collaboration between Stockholm and the supplier was crucial to making the pilot project a success. SLL not only set new, tougher requirements when it came to environmental adaptation, it also worked alongside the supplier – ambulance builder [Euro-Lans](#) – to find new solutions to meet those requirements. The use of renewable fuels and new components and materials reduced the burden on the environment. The contractor now also considers the environment to a far larger extent when choosing technical solutions, and supplies more eco-friendly emergency vehicles generally. The higher purchase price resulted in an increase of 13.5% in investment costs compared to a standard ambulance of the same make (154,000 SEK, or approximately €16,700) and +6% for the next green ambulance. Savings for biogas operation were calculated at:

- Compared to petrol: -22,000 SEK (approximately €2,400) per year
- Compared to diesel: +/- 0 SEK per year

The depreciation time is five years. An ambulance runs approximately 80,000 to 100,000 kilometres per year and they are normally taken out of use after 400,000 kilometres.

Environmental impacts

Biogas is renewable and is obtained by rotting organic matter such as waste sludge, food remains and cultivated crops. Compared with all other available fuels – both fossil and renewable – biogas has very low life-cycle emissions of substances that affect health and the environment, such as nitrogen oxides, hydrocarbons and particles. Biogas also does not add any fossil CO₂ to the atmosphere when the vehicle is being driven. The biogas used in the ambulance is produced both locally and regionally, mainly from waste sludge and food remains.

Source: The [World's First Eco-Ambulance](#), Stockholm County Council

The contractor in this case now uses only halogen-free cabling in all their vehicles – ambulances, as well as fire engines and police cars. If a similar approach to emergency vehicle procurement was adopted by all county councils in Sweden, the impact would be significant. Certain contractors and councils (for example Skåne Regional Council) have already introduced biogas vehicles, but the reduction of environmentally hazardous substances remains a challenge.

Lessons learned

This particular experience has created a benchmark for similar actions in Stockholm. AISAB's latest call for tender for ambulance vehicles required that all ambulances delivered (from summer 2010) fulfil the same requirements as the first green ambulance did. The exception being that the choice of engine and fuel may vary as it is still problematic to gain easy access to biogas stations – there are too few in the Stockholm area. Stockholm's Public Healthcare and Service Committee Administration (Hälso- och sjukvårdsförvaltningen) have also required that all suppliers of ambulance services follow the green ambulance requirements when buying new vehicles.