

Evaluation Floating pop-up recycling in Stockholm

As many other European cities Stockholm is eager to reduce traffic, emissions and costs caused by traffic and to free public space for other uses. Because Stockholm has the advantage of many waterways within and surrounding the city it makes sense to analyse if these waterways would be suited for innovative recycling solutions. Therefore, a pilot study with a floating recycling centre was conducted and evaluated in May 2022 as part of the ASAP Project. For this a barge with recycling containers docked and stayed for two days at three different locations with docks that are easily accessible for nearby residents on foot.

The aim of the study was twofold: 1) to provide a service to the residents that enabled them to recycle goods on foot and to 2) reduce emissions by avoiding car trips to a recycling centre. To monitor and evaluate the reduction of emissions saved by bringing the recycling closer to the users they were asked to complete a survey. Of the 2871 visitors of the barge over the test phase, 270 completed the survey.

It has to be noted that the barge was moved by a towboat between the different docking locations that is powered by Class 1 Diesel and electric or HVO trucks were used for loading and unloading the barge.

A cost-benefit analysis compared the costs (monetary and environmental) and the benefits created (monetary, environmental, and social) during the pilot measure. To read the detailed analysis please refer to the [evaluation report](#).

The total monetary costs of the pilot project amounted to 342.893 SEK which included costs for the barge (renting, personnel, and fuel), for the trucks (rental and fuel) and other costs for advertisement of the measure. The environmental costs were calculated through the fuel consumption of the towboat of 420 liters of fuel (1144kg CO_{2e}) of the barge, 32 kg CO_{2e} of the trucks, emissions of visitor arriving by car (55kg CO_{2e} – which could be reduced if more visitors use alternative modes or electric cars). This means that the total CO_{2e} from barge, trucks, public transportation, and cars within the pilot amount to 1274 kg. With the barge being responsible for about 90 % of the total CO_{2e}- emissions.

Looking at the benefit of the measure monetary, environmental, and social benefits (citizens service) have to be distinguished. There are no monetary benefits gained by the measure, but there is a definite reduction in the car travels because according to the survey 28,9% of the visitors would otherwise have used a car to travel to the recycling centre. Through extrapolation it can be assumed that about 1002kg of CO₂ could be saved in the pilot year 2022 (in 2030 this would be down to 474kg, due to increased use of electric cars). The most prominent benefit of the pilot measure was the social benefit measured in the appreciation of the floating pop-up recycling centre service by the citizens.

Because both monetary and environmental costs are higher than the evaluated benefits this measure will currently not be made permanent. However, the possible use of a HVO powered barge in the future, would reduce environmental costs. Or the current barge might still be a viable option in areas where other solutions fall short (hard to reach certain areas, restrictions on car use, lack of available land space and so on) and the City of Stockholm is open to test other formats and functions based on the “warehousing” solutions that are currently implemented in Paris.