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## Stockholm, Sweden

Stockholm, the capital city of Sweden, has 765,000 inhabitants in the municipality and 1.9 million in the whole county. High levels of traffic and a radial infrastructure network make the transport system in Stockholm very strained and vulnerable. About 500 000 vehicles pass in/out of the inner city every weekday. A full-scale congestion charging trial took place in Stockholm for 7 months in 2006, followed by a referendum. Following an overall "yes" from the citizens of Stockholm City, the congestion tax was permanently installed in August 2007.

### Why was urban road user charging introduced in Stockholm?

The primary objectives of the trial were to reduce congestion, increase accessibility and improve the environment. During the trial, the revenue was earmarked to provide more resources for public transport. In the permanent scheme however, revenue is to be used to finance new road infrastructure investments. The charging trial was accompanied by a package of improvements in public transport and park&ride facilities.

### What are the features of the Stockholm scheme?

The congestion tax is levied when entering or leaving the inner city zone between 6.30 am and 6.29 pm Monday to Friday. Charges vary from €1-2 depending on the time of day, with a maximum amount of €6 per vehicle and day. Payment rules/modes have evolved since the trial, and now the vehicle owner is debited monthly by invoice. Payment is not possible at the control points.

Eighteen control points are set up at the borders of the charging zone, and vehicles are registered automatically when passing. Stockholm is built on islands, with a limited number of bridges leading to the inner city, which has contributed to reducing the number of control points. The main source of identification is through photographing the number plates. During the trial on board units were also used by some vehicle owners, but then removed essentially for administrative reasons.

The congestion tax law applies only to vehicles registered in Sweden with the following exemptions:

- emergency service vehicles;
- buses;

- diplomatic cars;
- motorcycles;
- foreign-registered vehicles;
- military vehicles;
- vehicles with disability parking permits;
- alternative-fuel cars;
- vehicles driving to and from the Lidingö Island (30-minute rule); and
- vehicles that only by-pass Stockholm via E4 Essinge link.

## How was the Stockholm scheme implemented?

In 2002, there was a national political agreement in order to form a government between Social Democrats (majority leaders), and the Green Party, holding the balance of power. In these negotiations the Green Party required a full scale trial of congestion charging in Stockholm. The constitutional framework does however require that the municipality in question makes a formal request to the parliament which takes the final decision. Unlike London, there was no political "champion".

The implementation process in Stockholm met many challenges, for example immense political opposition, negative public opinion and also delays due to legal investigations of the procurement. Positive process drivers however, were the extensive communication efforts carried out in parallel to the technical implementation as well as systematically conveying the evaluated effects during the trial with regard to the scheme objectives.

All in all, it took just over three years from the (national) political announcement in September 2002 to an implemented trial in January 2006. After a positive result in the following referendum, the local and national government decided to permanently re-install the congestion tax in August 2007.

## Impacts of the Stockholm scheme

The trial in 2006 was subject to an extensive evaluation in a multitude of dimensions, some of which are still being monitored during the permanent scheme. Major conclusions are:

- Traffic decreased by 22 % at the cordon during charging hours, and less inside the cordon. These effects were immediate and stable.
- Delays (excess travel time during the peak) were reduced by 33 % on arterials leading to the city.
- Re-distribution of traffic with respect to time-of-day was less than expected
- Public transport ridership increased by 6 %.



- Vehicle emissions in the inner city were reduced by 8-14 %.
- There was a marginal effect on trade and commerce.
- The distributional effects (benefits and costs) vary among groups. Effects for disadvantaged groups were generally smaller than effects for middle and high income groups
- It was difficult to determine whether inhabitants experienced improved city environment.
- Acceptability changed from a negative majority before the introduction to positive.
- The technical system works.
- The yearly revenue is calculated to be approximately €80 million.

## Conclusion

The overall goals of the Stockholm scheme with respect to reduction of peak car volumes, reduced delay and improved air quality were met or exceeded. For many citizens, the positive effects were observable by personal experience, which contributed to the public opinion going from negative to positive during the trial. The Swedish experience has shown that charging schemes can lead to large impacts when compared to other types of policy measures.

The congestion tax scheme in Stockholm has contributed to extensive experience of planning, design, procurement, constitutional and institutional framework, physical implementation, enforcement, impact assessment and acceptability issues in the field of urban road charging.

