Organizing Norwegian Road Toll Projects

The organization of road toll projects in Norway is different from the concessionary system used in various other countries. NPRA is responsible for planning, building and operating the road projects financed by toll revenue and for planning and building the toll collection systems. For each toll project, a dedicated toll company with limited responsibility is established by the local authorities, in order to operate the road toll system and to handle the financial tasks. Operating regulations are part of a contract with the Ministry of Transport and Communications. When imposing road toll on drivers, it is important to build on local initiatives and to have local responsibility for the operation of the system.

The construction of a new road link normally takes place before the collection of toll fees starts. The toll company then takes loans from banks to finance the part of the investments to be covered by the road tolls. This means that interest also has to be paid back in addition to the loans. The toll company is responsible for these loans if conditions make it difficult to achieve sufficient toll incomes to pay back the loans.

What Does the Future Hold?

In Trondheim, the toll ring was expanded to a «zonal system» in 1998, implementing more toll plazas in order to increase the revenues. Around Stavanger (Nord-Læren) a similar system was implemented in 1999, having more than 20 unattended toll plazas located on municipal borders. A further expansion of the Trondheim toll collection system up to 23 plazas was carried out in 2003. In the future, we expect an increase in the number of unattended toll plazas.

As Norwegian road toll projects normally have a lifetime of fifteen years, there was a debate as to what would happen when our first urban toll ring in Bergen passed this time limit. It was decided that the ring should collect toll for a new period ending in 2014, and the toll plazas were reconstructed to act as fully automatic toll plazas. No traffic management incentive by differentiation of the fees has been introduced. The debate over the future of the Oslo toll ring, passing its time limit in 2007, still goes on.

In February 2004 fully automatic toll plazas with only free flow lanes were introduced in the cities of Tønsberg and Bergen. This concept may take over as the dominant solution. At the same time the AutoPASS Co-ordinated Service was introduced. This is a contributing factor in the steady increase in the number of AutoPASS-users that we have registered. In the future, we expect that only few vehicles will be without AutoPASS.

Another key question is if Norway will introduce congestion charging or road pricing with time differentiated fees for demand management of traffic in peak periods. The Parliament has passed acts constituting the necessary legal platform for road pricing. One of the main principles of this legislation is that there shall be local political support before an implementation can take place. Also, the revenues are to be allocated for local transport projects.

Road tolling in Norway
Road Tolling in Norway

Norway is one of the pioneers in cost-effective and customer-friendly road tolling. The first urban toll ring was introduced in 1986 and electronic fee collection (EFC) has been implemented since 1987. Today there are seven urban toll rings and approx. 1 million On-Board Units (OBUs) in operation.

Three of the toll rings consist mainly of unattended toll plazas. A new scheme, named «Fully Automatic Toll Plazas», without any manual payment facility, was introduced in February 2004. In this new concept drivers without OBUs are videoed, and billed monthly.

In Norway all OBUs are in accordance with a national technical specification named AutoPASS. This specification is publicly owned and complies with the European standards for DSRC/EFC. In February 2004 the AutoPASS Co-ordinated Service was made available. With this contract the customer can pass any EFC toll plaza in Norway. The whole framework is based on CESARE.

Background and Status

Norway has more than 70 years of experience in using road toll payment as a financial instrument for building bridges, tunnels and roads. From 1930 to 1980, less than 5% of the total national road budget came from road toll revenues. During the last 20 years, however, road tolls have become an increasingly important way of financing road projects. In 2003 2,3 billion NOK (approximately 0,27 billion Euros) or almost 34% of the total annual state road construction budget came from toll fees collected from road users in more than 40 projects and 120 toll plazas throughout our widespread country. There has been an increasing number of bridges and rock tunnels crossing fjords and mountains financed by road tolls. In addition we have «road construction packages» normally financed 50% by road tolls in many of our major cities. These «packages» also include infrastructure for public transport.

Urban Toll Rings

The Norwegian urban road packages have been implemented to improve road capacity, traffic safety and environmental problems. The toll is collected from the drivers through «toll rings» covering all roads leading into the central parts of the cities. The first toll ring was established in January 1986 to cope with Bergen’s choking traffic problems. A common understanding had emerged among the leading political parties in the city, and in the Parliament (Storting), that something efficient had to be done. This made a basically unpopular solution possible. General acceptance of the toll rings was also due to a low fee (5 – 10 NOK) and the fact that the scheme was to be removed after fifteen years. This is normal operation length for Norwegian road toll projects. Part of the political solution was that a portion of the revenue was allocated for public transport infrastructure (20% in Oslo). In Bergen, and most of the other urban toll rings except for Oslo, there is also a customer-friendly fee system: Drivers pay for one passing per hour only, there is a limit on the number of passings which need to be paid for per month, and passing is free during evenings, nights, Saturdays and Sundays. Efficient non-stop tolling (EFC) in the subscription lanes handles more than half of the traffic and the plazas themselves do not create bottlenecks. This also contributes to public acceptance. In Oslo, users may also purchase a pass, which gives the possibility of an unlimited number of passings within one year, half a year or one month.

AutoPASS Electronic Fee Collection (EFC)

Norway has been a pioneer in the field of EFC. The world first toll plaza with EFC was opened at Ålesund in October 1987. Oslo Toll Ring with 19 plazas was opened in February 1990, and is still one of the world largest EFC-systems. The Trondheim Toll Ring was rather innovative when it opened in 1991, with ten unattended toll plazas out of a total of twelve. More than 90% of the vehicles have OBUs, and vehicles without are directed to separate lanes where they must stop and pay into automatic coin machines.

In the toll plazas video pictures are taken of the front of the vehicles. Reading the OBU and photographing the licence plate by video, is done so quickly that vehicle speeds in excess of 150 km/h do not create any technical problems.

To avoid conflicting use of radio wave frequencies, and to comply with new European standards on DSRC (Dedicated Short Range Communication), the Norwegian Public Roads Administration (NPRA) developed a specification for EFC in 1998 named AutoPASS. AutoPASS is publicly owned and open to everybody. From 2001 to 2003 approx. 1 million AutoPASS OBUs were distributed to replace the first generation OBUs and to supply new tolling projects.

In February 2004, the AutoPASS project implemented contractual interoperability between the 23 toll companies offering EFC. When signing an AutoPASS Contract with their «home» toll company, users can opt for the AutoPASS Co-ordinated Service, giving legal access to any AutoPASS-lane in the country. A standard specification for the central computer system to be used by the toll companies, has also been drawn up for AutoPASS. This will facilitate the operation of the AutoPASS Co-ordinated Service.