Road toll collection in Norway and Oslo – process, technology and experiences

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Road tolling in Norway

- 70 years of road tolling experience to finance expensive infrastructure (bridges and tunnels)
- More than 100 road toll projects implemented
- Toll collection normally lasts for 15 years
- 44 road toll projects in operation today
- Urban toll systems for the last 20 years
- Point payment only (open systems)
- Norway has been a pioneering country in developing cost efficient road tolling
Tolling Projects in Norway by 2005

Pioneers:

- **Bergen** (1986), our first toll ring

- Ålesund* (1987), the first toll plaza with EFC in the world

- The toll rings in **Oslo** (1990) and **Trondheim** (1991) have been other important pioneering projects

Statens vegvesen Norwegian Public Roads Administration
<table>
<thead>
<tr>
<th>City</th>
<th>Plazas</th>
<th>Start</th>
<th>End</th>
<th>Pop. in ar.</th>
<th>In op.*</th>
<th>AADT **</th>
<th>EFC %</th>
<th>Tags</th>
<th>NOK /Pbe</th>
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</thead>
<tbody>
<tr>
<td>Bergen 1</td>
<td>8</td>
<td>1986</td>
<td>2004</td>
<td>300’</td>
<td>16/5</td>
<td>60’</td>
<td>-</td>
<td>-</td>
<td>5-10</td>
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<tr>
<td>Oslo</td>
<td>19</td>
<td>1990</td>
<td>2007</td>
<td>900’</td>
<td>24/7</td>
<td>250’</td>
<td>83</td>
<td>400’</td>
<td>10-20</td>
</tr>
<tr>
<td>Trondheim</td>
<td>12 17 23</td>
<td>1991 1998 2003</td>
<td>2005</td>
<td>250’</td>
<td>11/5 12/5</td>
<td>100’</td>
<td>95</td>
<td>150’</td>
<td>10 15</td>
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<tr>
<td>Kristiansand</td>
<td>5</td>
<td>1997</td>
<td>2007</td>
<td>100’</td>
<td>24/7</td>
<td>55’</td>
<td>84</td>
<td>30’</td>
<td>10</td>
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<tr>
<td>N. Jæren (Stavanger)</td>
<td>21</td>
<td>2001</td>
<td>2011</td>
<td>230’</td>
<td>12/5</td>
<td>150’</td>
<td>91</td>
<td>110’</td>
<td>5/10</td>
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<tr>
<td>Namsos</td>
<td>3</td>
<td>2003</td>
<td>2017</td>
<td>15’</td>
<td>12/5</td>
<td>7’</td>
<td>89</td>
<td>10’</td>
<td>13</td>
</tr>
<tr>
<td>Tønsberg</td>
<td>6</td>
<td>2004</td>
<td>2019</td>
<td>50’</td>
<td>24/7</td>
<td>50’</td>
<td>86</td>
<td>35’</td>
<td>15</td>
</tr>
<tr>
<td>Bergen 2</td>
<td>8</td>
<td>2004</td>
<td>2014</td>
<td>300’</td>
<td>24/6</td>
<td>100’</td>
<td>87</td>
<td>105’</td>
<td>15</td>
</tr>
</tbody>
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‘figure in thousands

* Hours a day and days a week

** During hours of operation
The “Oslo Package 1”

- Why?: To build 50 pre-defined projects in 10 instead of 35 years with state funds only
- Joint venture between Oslo (60%) and the neighbouring county of Akershus (40%)
- Users contribute with 55% of funding
- The toll ring covers all roads in three corridors
- 50% of Oslo’s population live outside the toll ring

- AADT in the payment direction is approx. 250,000
- Annual income: 1 bill. NOK, 10% operation cost
Oslo toll plaza no. 5 on a western arterial

- The subscription lane ("AutoPASS") has a high capacity, approx. 1600 veh/hour
- Approx. 300 veh/hour capacity in coin machine and attended ("manuell") lanes
- No expansion of total road area was necessary
Toll plaza no.14 on E6 south

You will arrive here when approaching Oslo from Stockholm or Copenhagen
Toll plaza no. 11 on E6 north is the largest in Oslo. It has 3+1 AutoPASS lanes.
Opinion polls unveil a negative attitude to the toll ring in Oslo:

The toll ring opened 1. Febr. 1990

The increase in negative attitude in 2001 is due to:

1. introduction of "Oslo Package no.2": NOK 2,- extra per passing allocated for public transport only

2. a fear that the toll ring will not be removed in 2007 which was the original decision
How was it possible to implement a toll scheme in Oslo that 70% were against?

- Bergen initiated a successful toll ring in 1986
- Road traffic conditions were choking
- The major political parties agreed
- The toll is to finance road infrastructure
- Limited collection period, only 15 years (?)
- Additional extra funding from the State is part of the plan
- Low fees
- Those opposed to car driving appreciate that the motorists have to pay
- 20% of toll income was earmarked public transport from the beginning
What do we get?

The major projects in the **Oslo Package 1** are **urban road tunnels**

The most important of those is Festningstunnelen (The Castle Tunnel) below City Hall Square: 6 lanes, 1.6 km long, cost 2 billion NOK.

It was important for the acceptance of the toll scheme that the Castle Tunnel opened 2 weeks before the toll collection started.
The City Hall Street before opening The Castle Tunnel
The City Hall Street after opening The Castle Tunnel
The City Hall Square before opening The Castle Tunnel

Photo: Mari Kollandsrud, Riksantikvaren
The City Hall Square after opening The Castle Tunnel

• The AADT was reduced from 90 000 to 0 vehicles
• New tram line opened
• A new plaza for walking, festivals and exhibitions

Photo: Mari Kollandsrud, Riksantikvaren
The traffic goes here (down to -45 m)

This traffic control centre for Oslo employs advanced systems for managing vehicle movement in the Oslo Tunnel and large parts of the main highway system around the capital.
Oslo Toll Ring Experiences

- **Overall reduction** in traffic: 3-5%
- **Growth in public transport**: 6-9%
- Situation back to “normal” after only a few months
- Off peak drivers most sensitive to pricing
- **No capacity problems in the plazas**
- Higher workload and more comprehensive computer systems in the back office system than expected
- Users do not always behave as expected
Community importance of urban road tunnels

- **Reduced delay** due to removal of bottlenecks
- **Road space** above ground can be made available for other uses
- **Removed barrier effects** from the surface street network
- **Reduced noise** from above ground traffic
- **Less pollution** (high chimneys, filtering)
- **Improved traffic safety**
User financing will be needed for a very expensive extension of the Castle Tunnel across Bjørvika bay (Bjørvika Tunnel)
The new Bjørvik Tunnel will make room for a new district of Oslo between the new opera house (A) (under construction) and the medieval part of Oslo (B).

Shall the State or the City pay for it?

): The road users are once more the solution
"Congestion Charging light" favouring public transport

Fees (pbe):

- NOK 3,- (1 unit) in both directions
- NOK 6,- (2 units) in both directions
  + Double fees in peak periods
  + Free periods late evening and night
  + Double fees for heavy vehicles.

- City borders
- The toll ring

Norwegian Public Roads Administration
“No stop toll plazas” – the newest concept

- Drivers without AutoPASS will be videoed and billed monthly for the exact fee
- In Bergen and Tønsberg since February 2004
- Pictures show pilot station in Tønsberg and the entrance to Tønsberg from Oslo
We have experienced a political dilemma concerning congestion charging ....

- Solely my own, personal opinion !!
- Conservatives trust market mechanisms – except for traffic regulation - and opposes congestion charging !
- Socialists distrust market mechanisms – except for traffic regulation – and approves congestion charging, but dare not vote for it ?
- Nobody dares to focus on congestion charging before an election
- In Norway we have elections every second year !
Thank you for your attention!

For more information:

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