Rotterdam Tests Electric Vehicles

A grid operating company (Stedin), an energy [services] provider (Eneco) and a large Dutch city (Rotterdam) report at EVS27

Barcelona, November 2013
from April 1st 2012 to April 1st 2013, we tested the following:

- 75 electric vehicles
- 129 charging stations
- 100 drivers
- 711,494 electric kilometres
- 270 million registered measurements
- 67% CO₂ reduction
- 10% PM reduction
- 100% NOₓ reduction
Charging stations (excluding private charging stations)

- **2013-04**: 3,067 Standard Public, 1,445 Standard Semi-Public, 89 Fast Charging
- **2012-12**: 2,782 Standard Public, 63 Standard Semi-Public, 829 Fast Charging
- **2011-12**: 1,250 Standard Public, 576 Standard Semi-Public, 15 Fast Charging
- **2010-12**: 400 Standard Public, 15 Standard Semi-Public, 63 Fast Charging

---

Rotterdam Tests Electric Vehicles
<table>
<thead>
<tr>
<th>Year</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>20,000</td>
</tr>
<tr>
<td>2020</td>
<td>200,000</td>
</tr>
<tr>
<td>2025</td>
<td>1,000,000</td>
</tr>
</tbody>
</table>

In Rotterdam

2025: 200,000 EV’s
The $\text{CO}_2$ emissions from passenger cars

- 180-195 g/km: conventional vehicle
- 145-180 g/km: non-charging plug-in hybrid vehicle
- 145 g/km: hybrid vehicle
- 60-180 g/km: charging plug-in hybrid vehicle
- 60-80 g/km: electric vehicle
The four most important influences on the consumption and range of electric cars

- Outside temperature: low (0°C) reduces range by 20%, high (15°C) increases range by 20%.
- Driving style: least efficient decreases range by 15%, efficient increases range by 15%.
- Vehicle efficiency: least efficient decreases range by 10%, efficient increases range by 10%.
- Driving profile: motorway decreases range by 10%, city centre increases range by 10%.

Range: 100% (average)
NRGSPOTs in the Netherlands
Use of the charging stations for 24 hours at home and at work

The average utilization rate is residential area:
- Time period of utilization rate 00:00 - 07:00 hours - 19%
- 07:00 - 12:00 hours - 25%
- 12:00 - 17:00 hours - 16%
- 17:00 - 24:00 hours - 30%

The average utilization rate at Black site:
- Time period of utilization rate 00:00 - 07:00 hours - 32%
- 07:00 - 12:00 hours - 27%
- 12:00 - 17:00 hours - 26%
- 17:00 - 24:00 hours - 12%
Purchase price of electric car still too high
**Why are we here?**

- to share our findings with you
- because we think renewable energy and mobility must be linked
- because we’re interested in the behavioural changes that requires
- because you might help us [find out how to] bring those about
Find out more?

contact:

• baerte.debrey@stedin.net
• jma.streng@rotterdam.nl

download report at:

www.rotterdamtestelektrischrijde.nl