Infrastructure for HDV

Global MoU webinar
Tuesday 10 May 2022

Sacha Scheffer
Senior advisor sustainable mobility
National charging infrastructure agenda (NAL)

- Charging infrastructure should not be a barrier to transition to battery electric logistics
- Steering committee NAL and collaborative agreements with met 5 NAL-regions en G4 (Amsterdam, Rotterdam, The Hague and Utrecht)

- Working group NAL Logistics:
Sufficient deployment of charging infrastructure

› Public vs private charging
› Fast charging vs regular charging
› Reliability and availability
› Sustainable business case and appropriate market rules for publicly accessible charging
› Application of smart charging
› Cross-over with other applications (E-OV Hub Kralingse Zoom RET)
› Future proof grid capacity
› Funding hardware, software, land or grid upgrades?
Challenges for timely deployment

- Appropriate funding mechanisms
- Personnel capacity at local governments
- Future proof grid capacity
1. How to deal with different types of locations?

Lower energy density and refill speed, so more locations needed!

› Option 1: Expansion of existing refueling infrastructure

› Option 2: New locations with zero emission infrastructure

› Option 3: Industrial scale locations (multimodal, such as harbours)

These locations can be on public lands or private lands, which further complicates the puzzle.

For governments its important to have a rollout vision/strategy for these different location types
1. Instruments for introduction new technologies

- Fiscal measures / taxation
- Subsidy on purchase
- Procurement / launching customer
- Guarantees
- Financing (NL Invest, EIB)

Programmes for scientific and applied research

DKTI-Transport

- 16% achterblijvers
- 34% Later meerderheid
- 34% Vroege meerderheid
- 13.5% Vroege gebruikers
- 2.5% Innovators
2. Personnel capacity at (local) governments

› Many tasks for infrastructure rollout are set with local governments or agencies
› Not all local governments have appropriate budget allocation to allow staff to work on charging infrastructure
  – Often starts with one person that only spends part of the time on that topic
› Roles and responsibilities are not clearly distributed
› NLD implemented expert pools to support local governments
› New coalition agreement also adds substantial budget to local governments for the energy transition
3. Future proof grid capacity

https://capaciteitskaart.netbeheernederland.nl/
3. Future proof grid capacity

- EHS = Extra high voltage
- HS = High voltage
- MS = Medium voltage
- Jaar = year
- Kosten = costs

---

<table>
<thead>
<tr>
<th>stations</th>
<th>ruimtebeslag</th>
<th>doorlooptijd</th>
<th>kosten (in € mil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHS/HS station</td>
<td>10.000 - 100.000 m²</td>
<td>7 - 10 jaar</td>
<td>&gt; 10.000.000.000</td>
</tr>
<tr>
<td>HS/TS station</td>
<td>15.000 - 45.000 m²</td>
<td>5 - 7 jaar</td>
<td>&gt; 25.000.000.000</td>
</tr>
<tr>
<td>TS/MS station</td>
<td>2.000 - 10.000 m²</td>
<td>2.5 - 5 jaar</td>
<td>1.500.000.000 - 10.000.000</td>
</tr>
<tr>
<td>MS station</td>
<td>200 - 4.000 m²</td>
<td>2.5 - 3 jaar</td>
<td>1.300.000 - 6.500.000</td>
</tr>
</tbody>
</table>

---

**What does it cost to connect in space, time and money?**

<table>
<thead>
<tr>
<th>verbindingen</th>
<th>tracébreedte</th>
<th>doorlooptijd</th>
<th>kosten in € m</th>
</tr>
</thead>
<tbody>
<tr>
<td>lijn EHS/HS</td>
<td>100 m</td>
<td>7 - 10 jaar</td>
<td>5.000 - 10.000</td>
</tr>
<tr>
<td>kabelcircuit HS</td>
<td>10 m</td>
<td>5 - 7 jaar</td>
<td>1.000 - 5.000</td>
</tr>
<tr>
<td>kabelcircuit TS</td>
<td>10 m</td>
<td>1 - 3 jaar</td>
<td>300 - 1.000</td>
</tr>
<tr>
<td>kabelcircuit MS</td>
<td>1 - 10 m</td>
<td>0.5 - 3 jaar</td>
<td>100 - 400</td>
</tr>
</tbody>
</table>

**Basisdocument_over_energie-infrastructuur_143.pdf** (netbeheernederland.nl)
Role public sector

- Different support mechanisms per development phase
- Clear strategy for all location types at appropriate levels of government
- Clear communication with grid operators for timely grid upgrades
- Setting minimum requirements (standards & protocols) for the infrastructure
Role private sector

› Clear picture with logistics value chain where HDVs are going to charge

› Willingness to share data in pilot phase to support further rollout strategies and funding from governments

› Perspective towards a healthy business case

› Compliance with evolving rules and requirements