

Brightsite

Transforming industry

Esta de Goede

June 3, 2022

AAV

Proud partners

Sitech Services

TNO

Maastricht University

Brightlands Chemelot campus



Brightsite

Transforming industry

DEMONSTRATE ...
that climate goals
2030 and 2050
can be reached
at Chemelot
industrial site



EDUCATE ...
the next
generation
of scientists,
researchers,
engineers and
coworkers

AAV

= alternatief aangedreven vrachtwagens

= alternatively powered trucks

More specific, powered via:

- Battery Electrical (BE)
- Hydrogen (Fuel Cell Electric (FCE))
- Compressed natural gas (CNG)
- Liquefied natural gas (LNG)



Initiated by Chemelot

Question:

What can AAVs do to our installations and vice versa?

Any new scenario's?

EPSC

June 3, 2022

Our question ended up in a collaboration between:

- Safety Delta Nederland,
- VNCI,
- VOTOB,
- VNPI,
- Brightsite/Chemelot

The research is done by the dutch institute for public safety ('Nederlands Instituut Publieke Veiligheid')

Approach:

Phase 1. literature study

Phase 2. elaboration of incident scenarios on sites

Phase 3. pilot on 1 or 2 sites

Literature search of a.o.:

- (policy) frameworks (the Netherlands, Germany, Belgium,..)
- laws and regulations / guidelines e.g. at petrol stations
- company guidelines
- Cefic, HSE UK, ...

And a connection is made to platforms like (ROVERR, (Rotterdam-Rijnmond), Working Group Incident Management Hazardous Substances, Steering Group Safe Energy Transition Fire Birgade Netherlands and LEC Fire Brigade BRZO

Results:

- No literature available that focuses on the effect on (chemical) sites and vice versa
- Literature is available on:
 - vehicle requirements
 - rules for filling stations with alternative “fuels”
 - incident control.

Phase 2 – in preparation

- Defining scenarios in workshop with experts
- In the scenarios the energy source of the AAV is central,
 - the batteries for electric trucks,
 - the tanks/cylinders with hydrogen
 - natural gas for the other trucks.
- The consequences include a direct effect (fire, explosion, flare) with possible consequences for the (industrial) environment due to heat radiation, pressure, flame contact, etc.
- Scenarios will be developed for the following activities with the AAV:
 - Driving (driving into, driving away) a truck over the company premises;
 - Loading / unloading (or other activity) on site, i.e. the regular business activities;
 - Parking / pausing / charging / refueling on the company site.

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www.brightsitecenter.com