

Virtual Reality training for firefighters

Nils Rosmuller, applied professor Energy and transportation safety

Tom Hessels, researcher Energy and transportation safety

Content

- ▶ NIPV
- ▶ VR training application
 - ▶ Need for training
 - ▶ Purpose
 - ▶ Scenario's
 - ▶ Preview

What is the NIPV?

- ▶ Knowledge and education institute for crisismanagement and fire service within The Netherlands
- ▶ 4 applied research groups
 - ▶ Fire prevention
 - ▶ Fire service
 - ▶ Crisismanagement
 - ▶ Energy and transportation safety

Energy and transportation safety

- ▶ Focus on:
 - ▶ Hydrogen
 - ▶ Wind energy
 - ▶ Lithium-ion energy (storage)
 - ▶ Solar panels
 - ▶ Biomassa
 - ▶ Geothermal
 - ▶ LNG
 - ▶ Sustainable construction materials
 - ▶ Etc.

Core activities

- ▶ Knowledge development
- ▶ Research activities
- ▶ Procedures for first responders
- ▶ Education for fire prevention officers
- ▶ Train the trainer for first responders

Energy Storage Systems in The Netherlands

- ▶ ESS's are emerging in The Netherlands
- ▶ Safety risks for first responders
- ▶ Training facilities / possibilities limited
- ▶ High level of unfamiliarity
- ▶ No legislation: ESS can be found without prior knowledge
- ▶ Therefore: need for low-profile training material

Virtual ESS training

- ▶ Our solution: virtual reality training application for first responders

Why?

- ▶ Relatively low cost
- ▶ Always accessible
- ▶ Platform already available
- ▶ Safe training mode: classroom setting

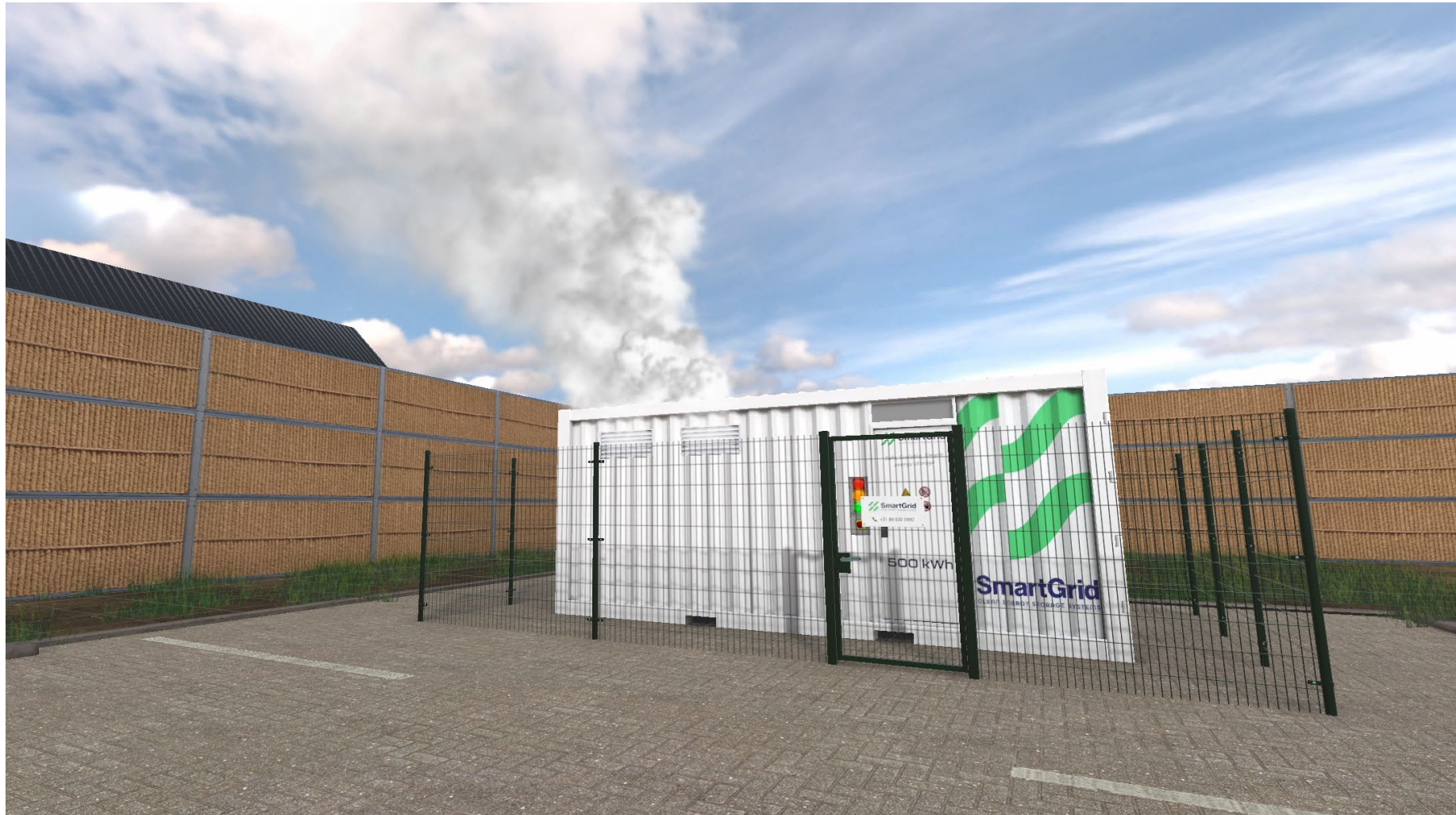
Virtual ESS training: the training

- ▶ Focus on:
 - ▶ Identification of risks
 - ▶ First steps of response until (HAZMAT-)specialist arrive
- ▶ Part of a theoretical lesson

Virtual ESS training: the training

- ▶ Four different scenario's:
 - ▶ ESS without any fire protection
 - ▶ ESS with dry pipe water suppression
 - ▶ ESS with clean agent
 - ▶ ESS with sprinkler
- ▶ Red line: explosion risk, do not enter ESS

Virtual ESS training: impression





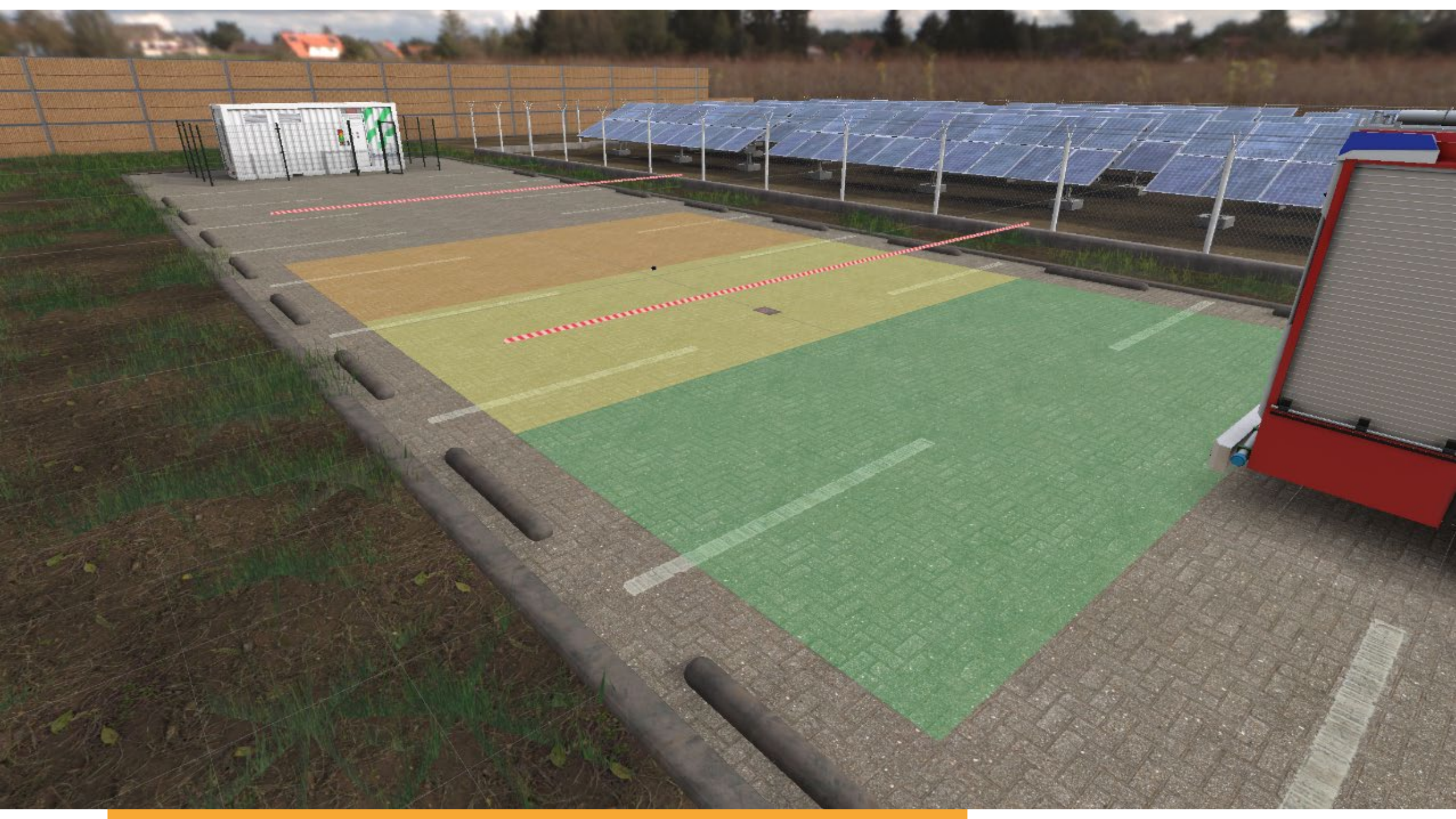


energy storage



500 kWh

sm
ENER



Virtual ESS training: what's in it for us?

- ▶ Testing procedures in practice: do they make sense?
- ▶ Bringing our knowledge to the street level
- ▶ To test if virtual reality is suitable for training of energy transition related incidents

Questions?

Contact information:

- ▶ Nils Rosmuller

Nils.rosmuller@nipv.nl

- ▶ Tom Hessels

Tom.hessels@nipv.nl

