

# Exposure monitoring of DEE

Mariska Droog  
Tamara Onos



# Our job

Is everybody safe?

Do we have to take measures?

OELs are fundamental to our work







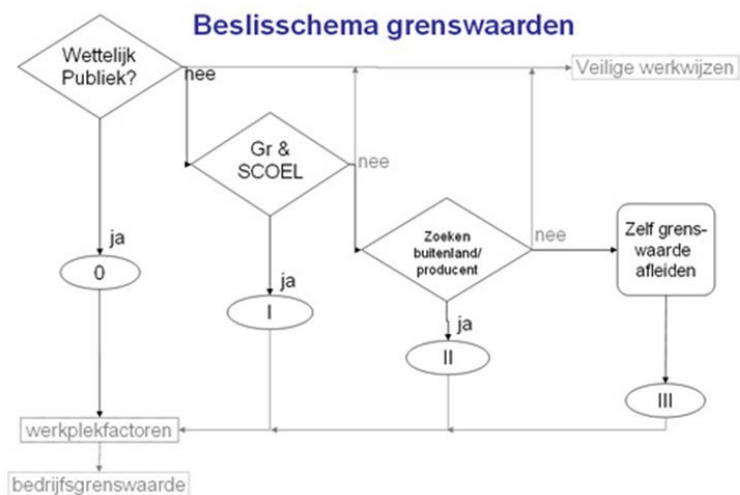
# Question



- What is the DEE exposure of employees?
  - Past
  - Present
  - Future

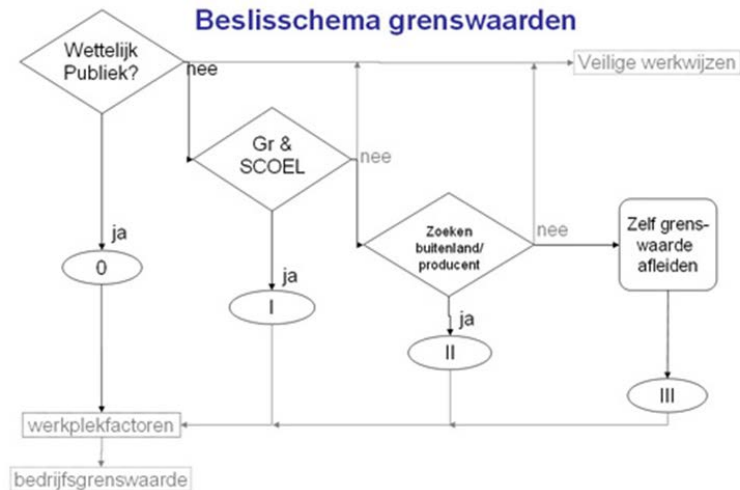
# OEL 2016

Component	TGG 8 uur 2016
NO (public OEL)	0,2 ppm (0,25 mg/m <sup>3</sup> )
NO <sub>2</sub> (public OEL)	0,21 ppm (0,40 mg/m <sup>3</sup> )
EC (private OEL)	Company: 16 µg/m <sup>3</sup> Advise: 10 µg/m <sup>3</sup>



# OEL 2019

Component	TGG 8 uur 2016	TGG 8 uur 2019
NO (public OEL)	0,2 ppm (0,25 mg/m <sup>3</sup> )	2 ppm (2,5 mg/m <sup>3</sup> )
NO <sub>2</sub> (public OEL)	0,21 ppm (0,40 mg/m <sup>3</sup> )	0,5 ppm (0,96 mg/m <sup>3</sup> )
EC (private OEL)	Company: 16 µg/m <sup>3</sup> Advise: 10 µg/m <sup>3</sup>	GR: 1,03 µg/m <sup>3</sup>





# What is the DEE exposure of employees?

## When?

- Past (Phase 0) based on old measurements NO/NO<sub>2</sub>/particles
- Present (Phase 1 and 2) perform measurements
- Future (Phase 3) advise monitoring

## Phase 1/2:

- Where?
- Who?



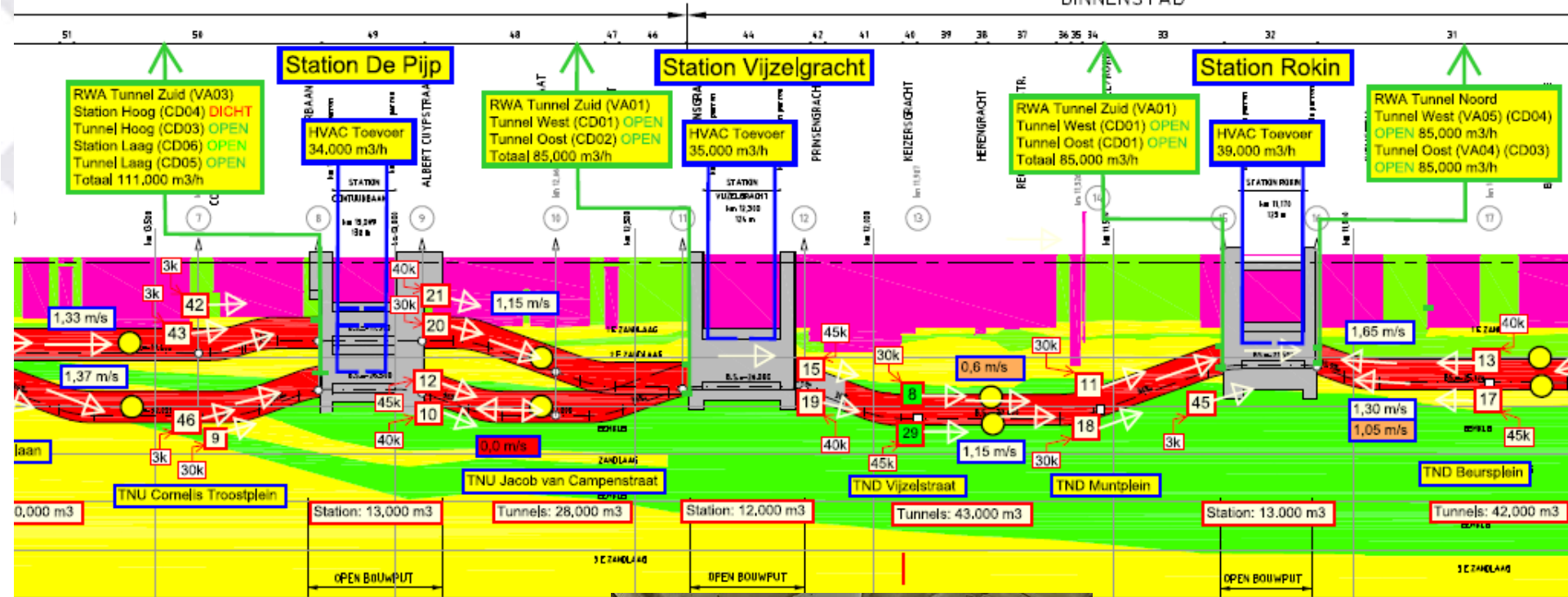
# Interesting project – logging

- Who works when/where
- What machines/measures
- What happens outside
- Is everyone wearing the pumps?



# Interesting project - Ventilation

BINNENSTAD



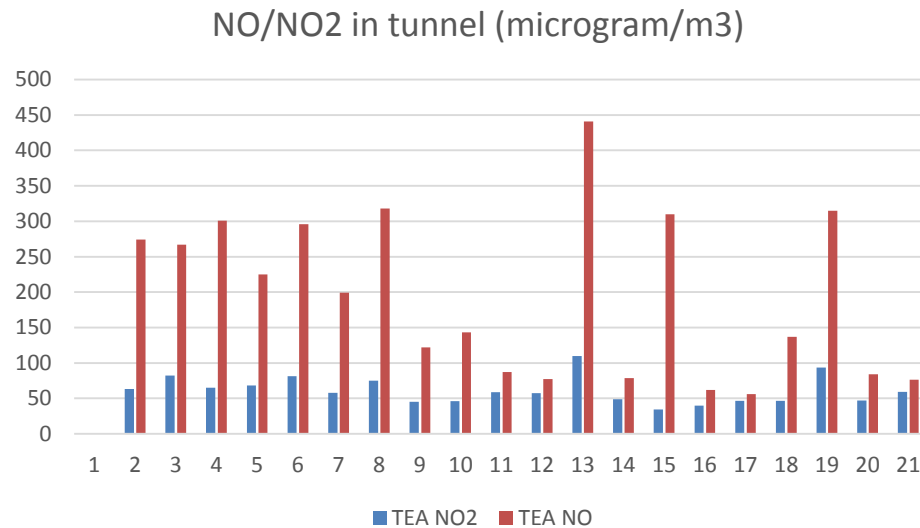
# Interesting project – outside situation



# Interesting project – measures



# Results phase 1 - tunnel

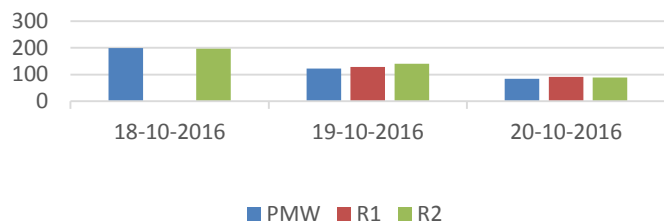


	TGG 8 uur 2016	TGG 8 uur 2019
NO	250 µg/m <sup>3</sup>	2500 µg/m <sup>3</sup>
NO <sub>2</sub>	400 µg/m <sup>3</sup>	960 µg/m <sup>3</sup>
EC	Company: 16 µg/m <sup>3</sup> Advise: 10 µg/m <sup>3</sup>	GR: 1,03 µg/m <sup>3</sup>

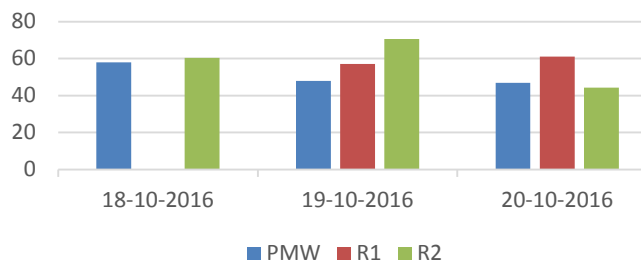


# Results phase 1 - platform

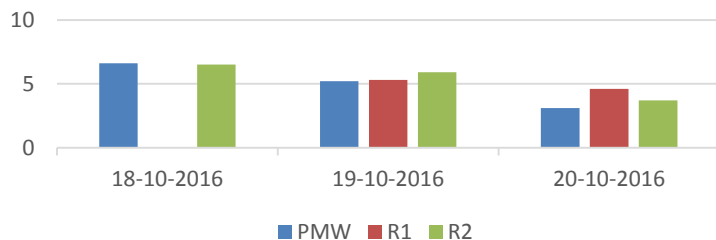
NO concentratie  
(in  $\mu\text{g}/\text{m}^3$ )



NO<sub>2</sub> concentratie  
(in  $\mu\text{g}/\text{m}^3$ )



EC concentratie  
(in  $\mu\text{g}/\text{m}^3$ )



	TGG 8 uur 2016	TGG 8 uur 2019
NO	250 $\mu\text{g}/\text{m}^3$	2500 $\mu\text{g}/\text{m}^3$
NO <sub>2</sub>	400 $\mu\text{g}/\text{m}^3$	960 $\mu\text{g}/\text{m}^3$
EC	Company: 16 $\mu\text{g}/\text{m}^3$ Advise: 10 $\mu\text{g}/\text{m}^3$	GR: 1,03 $\mu\text{g}/\text{m}^3$



# Conclusions Phase 1

2016

- DEE is a problem: take measures
- NO exceeds OEL
- To reduce measurements: monitor NO

2019

- DEE is a problem: take measures
  - CE exceeds OEL
  - To reduce measurements: monitor EC
- 



What do you think?

We should've know better

or

Knowing what we know now:  
we would've done things differently

