

Project scope

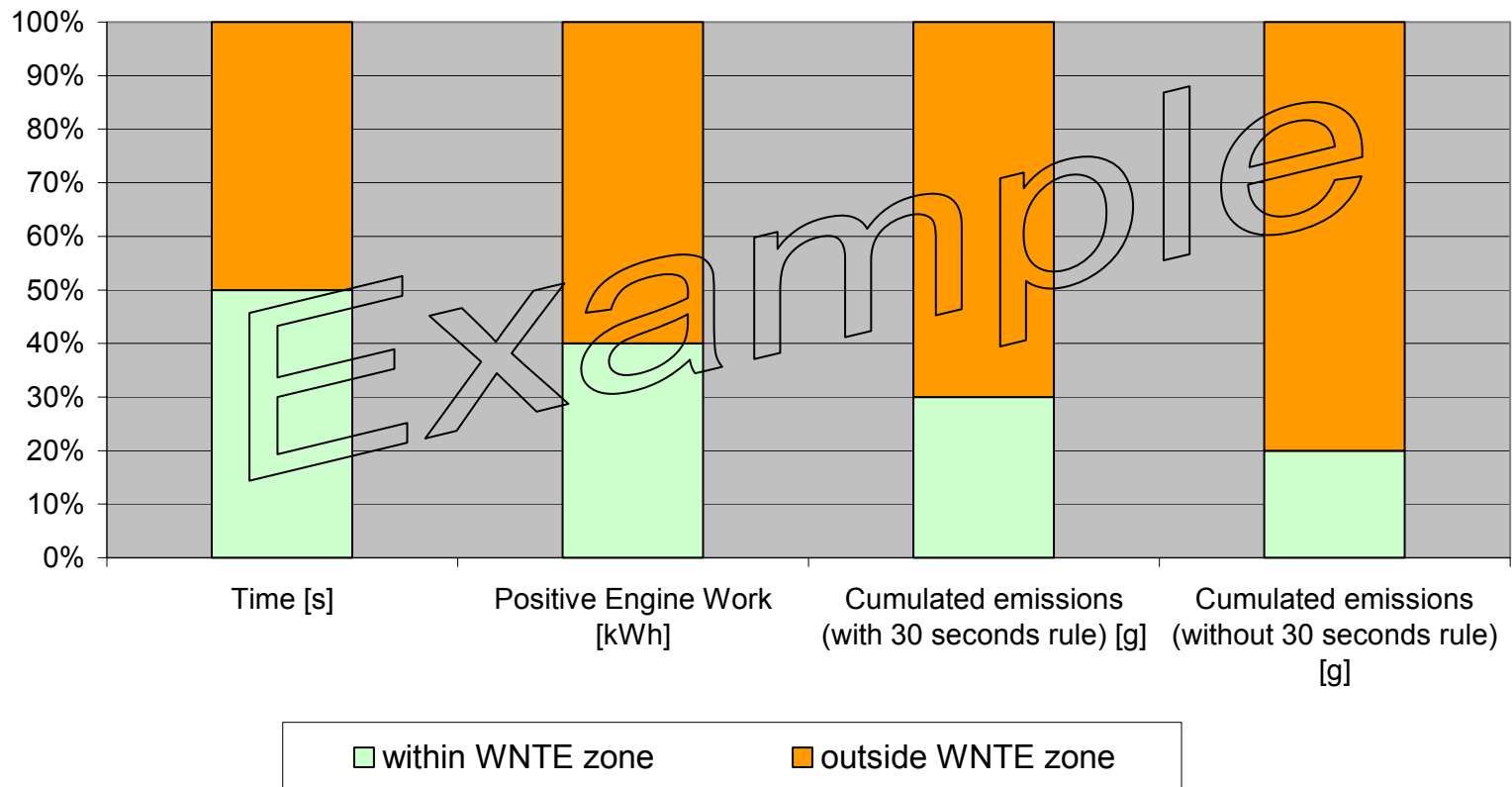
TASK 1 – Assessment of WNTE concept in current GTR

- Existing driving patterns data for representative categories of vehicle type and application (from WHDC database)
- Simulation of PM and NO_x emissions per category using current PHEM model (Euro 3 engine map)
- Graphical presentation of emissions in/outside the NTE control zone

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Output of Task 1:

- Timeshare in/outside the NTE control zone
- Positive work in/outside the NTE control zone
- Emissions in/outside the NTE control zone
- Effect of interval length on these shares of time/work/emissions



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TASK 2 – Assessment of NTE concept for future HD engines

Based on:

- Limited amount of existing data for Euro 4/5 engines (quantitative)
- Expert views on Euro 5/6 engines behaviour/calibration (qualitative)

Resulting in:

- Identifying possible limitations in NTE zone proposal

TASK 3 – Review of the effectiveness of WHDC and WNTTE concepts as a whole

- Coverage of 'higher risk' areas
- Elimination of defeat devices and/or irrational control strategies
- Identifying possible limitations

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TASK 4 – Consider rationale for improving NTE definitions:

- Changing engine speed limit of NTE zone
- Review of carve outs (e.g. 30% power, PM carve out)
- 30 seconds interval
- Review of compliance factor (1.25, 1.5 or other)

TASK 5 – Assessment of ambient temperature and pressure boundaries

- Analysis of existing on-road measurements
- Expert view for future engine technology

TASK 6 – Review of alternative NTE concepts

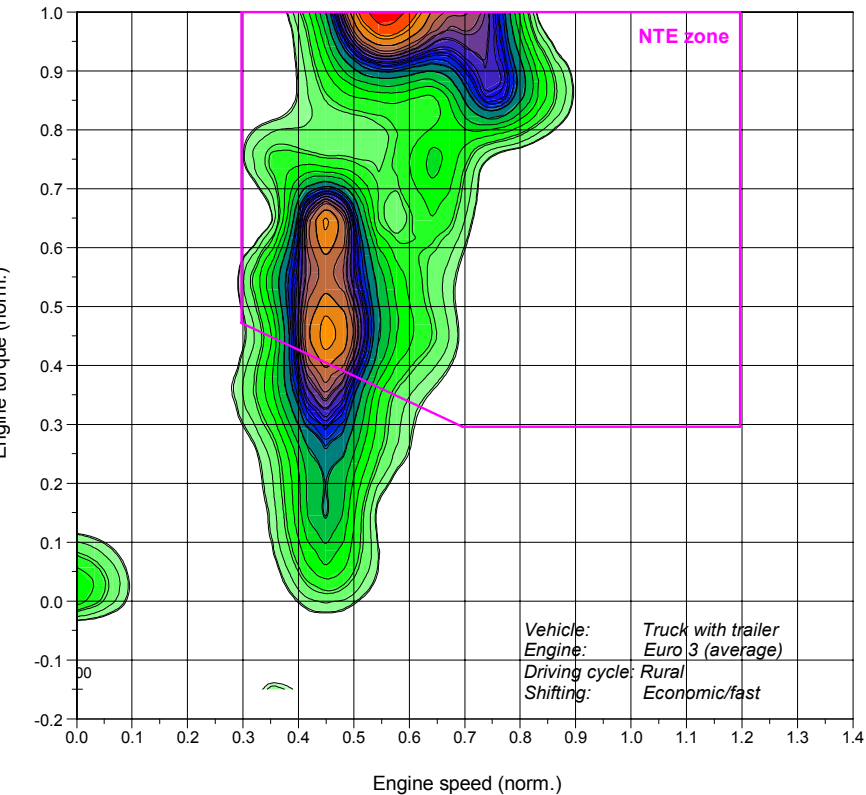
Including (but not limited to):

- Work-based window
- Compliance factor (based on BSFC instead of torque)

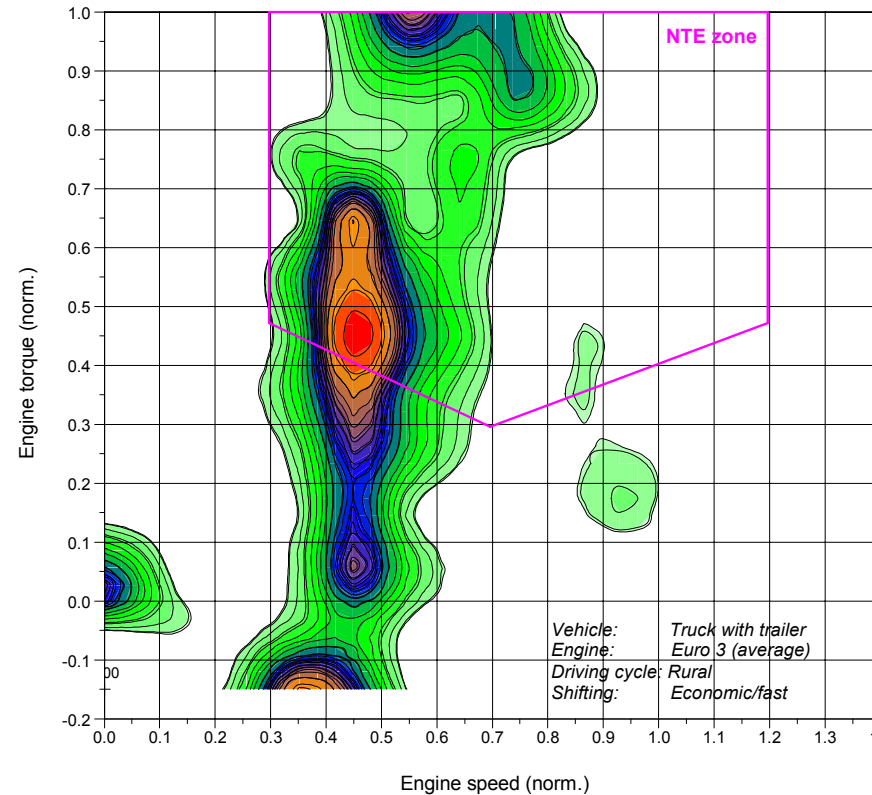
Examples

Results for NO_x and PM (truck/trailer in rural driving)

Relative NO_x contribution

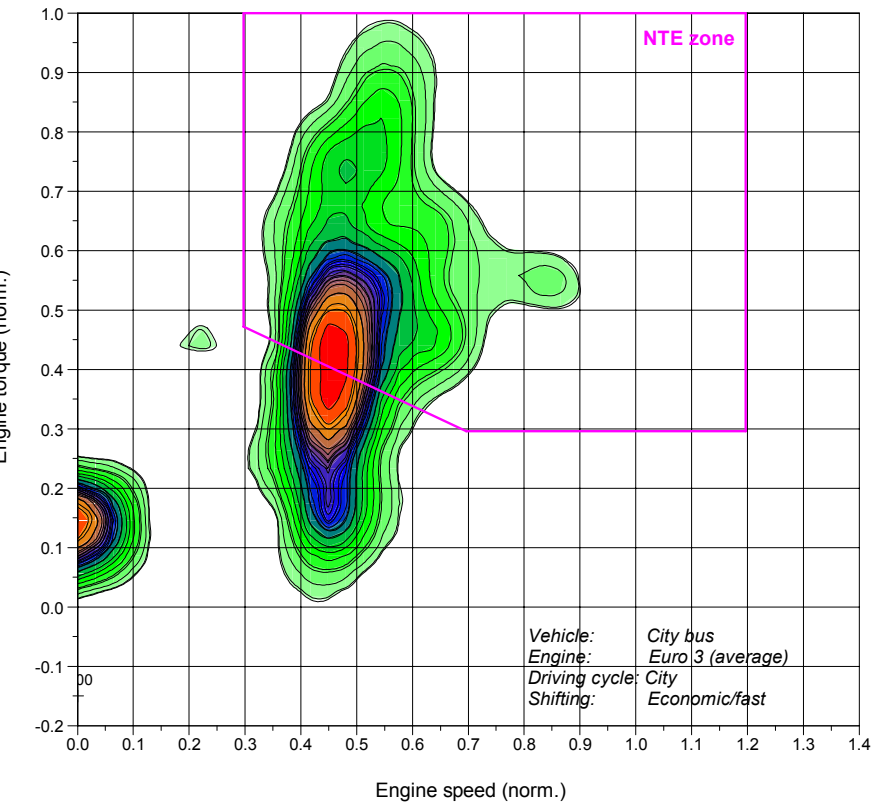


Relative PM contribution



Results for NO_x and PM (city bus in urban driving)

Relative NO_x contribution



Relative PM contribution

