HDV CHARGING INFRASTRUCTURE

TRUCK STOP LOCATIONS

JOINT ACEA-ESPORG WORKSHOP

Online

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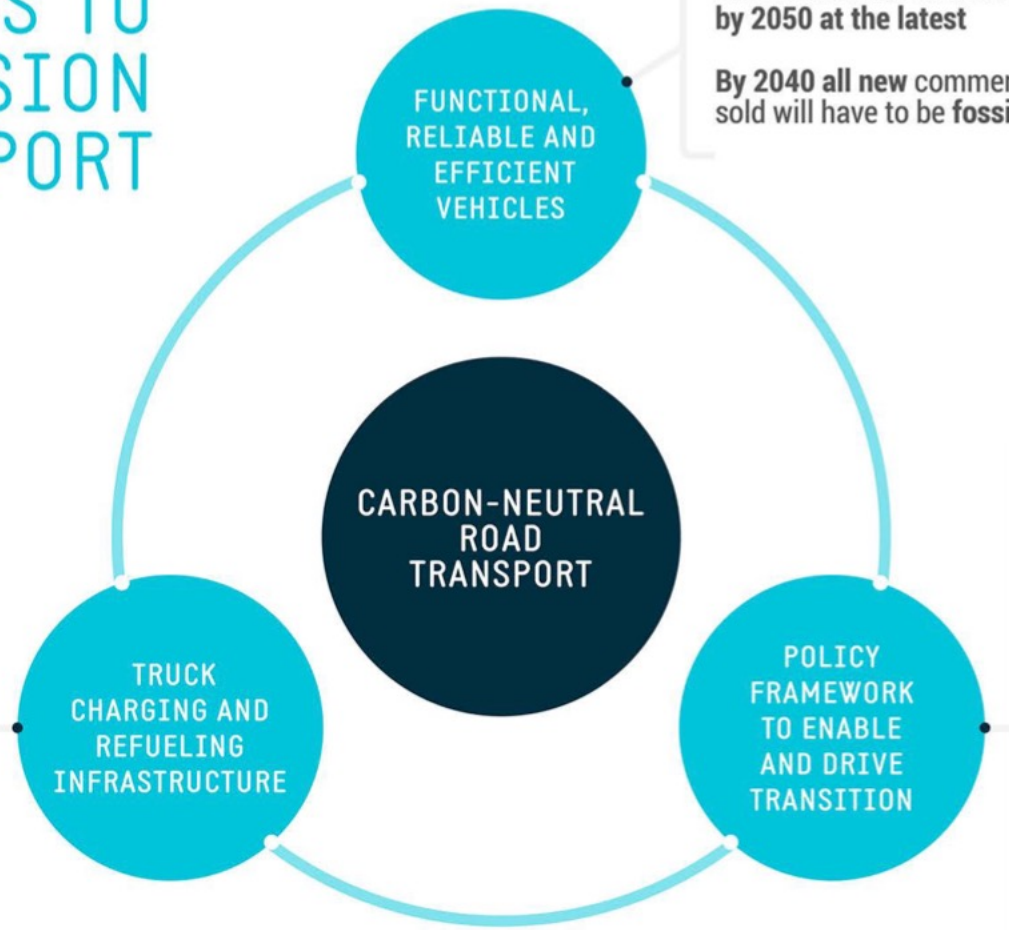
acea

DECARBONISING ROAD TRANSPORT

THREE KEYS TO ZERO-EMISSION ROAD TRANSPORT



Commitment to **climate-neutrality by 2050 at the latest**

By 2040 all new commercial vehicles sold will have to be **fossil-free**

Clean electricity, hydrogen and low-/zero-carbon fuels are crucial for the transition

Vehicle deployment will only be successful if **infrastructure** is rolled out rapidly

Commitment of **all stakeholders/ policy makers must match ambition** level set for vehicle industry

Manufacturers ready to support roll-out by collaborating with public and private stakeholders

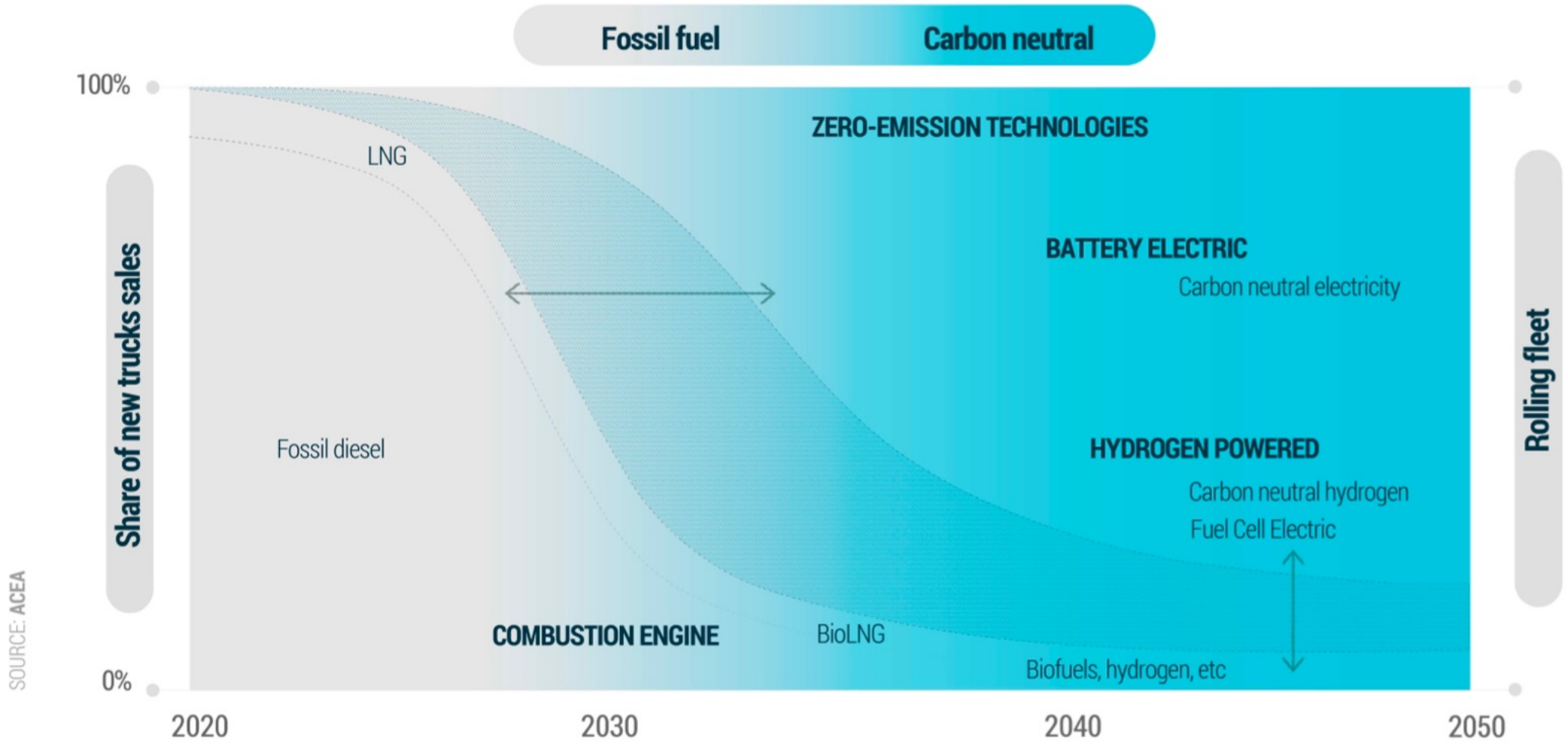
Zero-emission vehicles will have to become **best option and preferred choice of transport operators**

Enabling **policy framework** is indispensable **to shift key cost factors**

In line with science, an **ambitious carbon price**, which gradually increases to significantly higher levels than today is crucial to drive the deployment of zero-emission technologies

Decarbonisation requires **clear focus** and **all resources to be devoted exclusively** to reaching target as soon as possible

100% FOSSIL-FREE BY 2040



ZERO-EMISSION TRUCKS

RAPID ROLLOUT STARTING NOW

- 2025: At least **40,000 BEV trucks**
  - 10,000 medium-duty trucks (3.5-16t)
  - 30,000 heavy-duty trucks (>16t)
- 2030: At least **330,000 BEV / FCEV trucks**
  - 70,000 medium-duty BEV (3.5t – 16t)
  - 200,000 heavy-duty BEV (>16t)
  - 60,000 FCEV
- Pre-Green Deal assessment (!)

HDV CHARGING INFRASTRUCTURE

HDV INFRASTRUCTURE REQUIREMENTS

Specifications are distinctly different for trucks

- Particularly with respect to:
  - Locations of charging and refuelling stations
  - Space requirements
  - Minimum power output levels
  - Others

HDV CHARGING INFRASTRUCTURE

- Basic operation assumptions
  - All BEV will require (mostly private) depot charging stations
  - In addition to that – depending on their mission profiles – they will also require public and/or semi-public charging points.
    - Medium-duty vehicles will have to use public charging stations every fifth day of operation during daytime;
    - Heavy-duty vehicles (for regional delivery) will have to use public charging points every second day during daytime;
    - Heavy-duty vehicles (for long-haul) will charge daily (daytime) and every fifth day (during the night) at public charging stations.

HDV CHARGING INFRASTRUCTURE

ELECTRIC CHARGING INFRASTRUCTURE

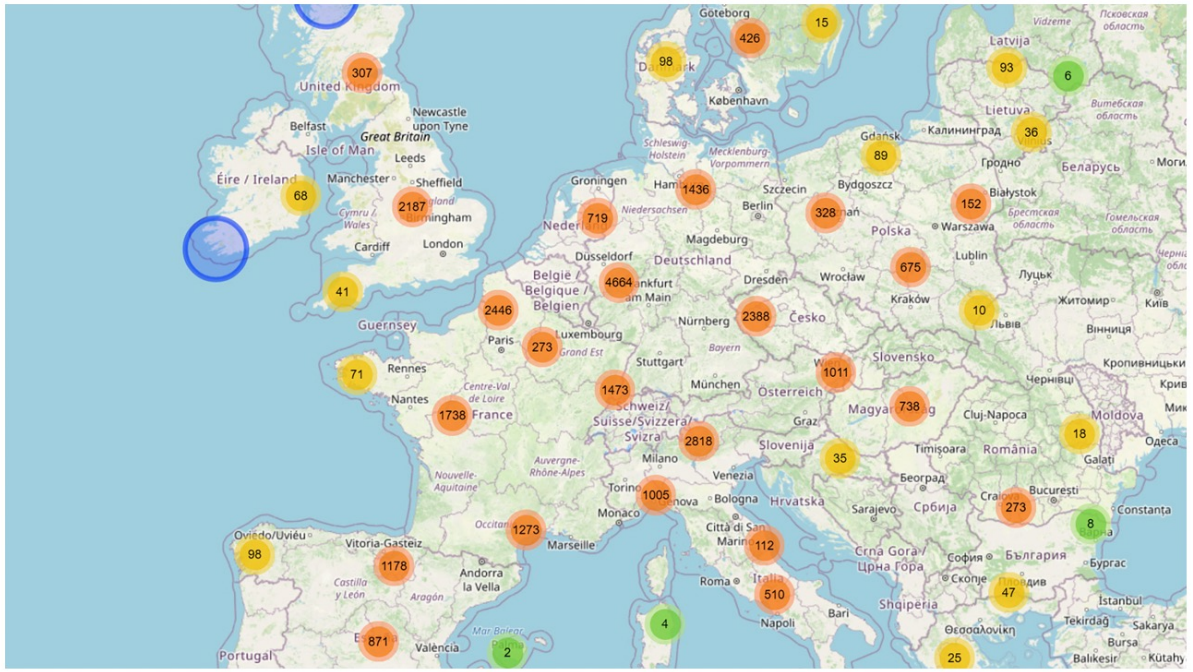
	COMMISSION PROPOSAL			NEEDED IN REALITY			
TEN-T core network	31 Dec 2025	31 Dec 2030	31 Dec 2035	1 July 2025	1 July 2027	1 July 2030	1 July 2035
Power output per recharging pool	≥1,400kW	≥3,500kW		≥5,000kW		≥6,500kW	
Number / power of recharging stations	1 x 350kW	2 x 350kW		4 x 350kW 4 x 800kW		4 x 1,200kW	
TEN-T comprehensive network	31 Dec 2025	31 Dec 2030	31 Dec 2035	1 July 2025	1 July 2027	1 July 2030	1 July 2035
Power output per recharging pool		≥1,400kW	≥3,500kW		≥1,400kW	≥3,000kW	≥5,000k
Number / power of recharging stations		1 x 350kW	2 x 350kW		2 x 350kW	2 x 800kW	2 x 1,200kW
Safe and secure parking areas	31 Dec 2025	31 Dec 2030	31 Dec 2035	1 July 2025	1 July 2027	1 July 2030	1 July 2035
		1 x 100kW		4 x 100kW			
Urban nodes	31 Dec 2025	31 Dec 2030	31 Dec 2035	1 July 2025	1 July 2027	1 July 2030	1 July 2035
Aggregated power output	≥600kW	≥1,200kW				≥1,600kW	
Individual power output	≥150kW	≥150kW				All ≥150kW + 2 x 350kW	

AFIR: TRUCK-SUITABLE INFRASTRUCTURE

TRUCK STOP LOCATIONS (JUNE 2021)

- High power fast charging network needed
- Objectives
  - Analyse truck stop locations and
  - Identify locations where shared charging infrastructure could be located
- Input data
  - 750,000 locations of 400,000 trucks in operation over a period of 12 months
  - Clustered to 30,000 long-haul and 4,000 regional locations

Electric trucks: new study pinpoints precise locations for charging infrastructure across EU



Source: ACEA 2021, https://www.acea.auto/press-release/electric-trucks-new-study-pinpoints-precise-locations-for-charging-infrastructure-across-eu/

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WHERE TO START ?

- 10% of most frequented locations (>3,000) → ~50% (78,000) of all stops

- Duration
  - Short stops (</> 1 hour) → MCS chargers
  - Long stops (</>8 hours) → Overnight parking

- All truck stops in 29 European countries
- See ACEA website: https://www.acea.auto/press-release/electric-trucks-new-data-maps-out-priority-locations-for-charging-points/

- Reminder: transport & logistics perspective

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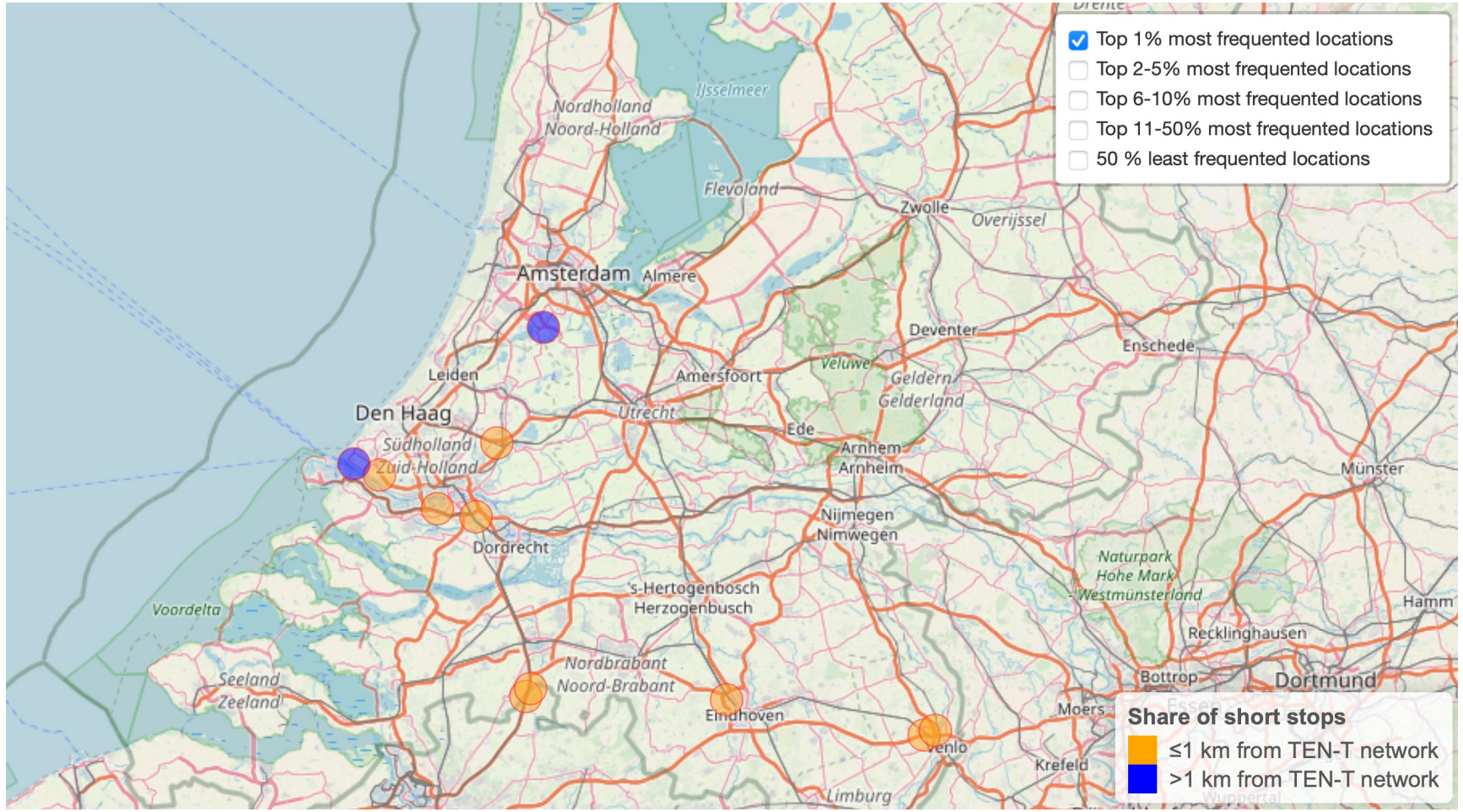
TOP 1% LOCATIONS – NETHERLANDS (2022)



TOP 1%

- 11 locations
- Approx. 843 stops/ day

- Representing ~20% of all truck stops/ day

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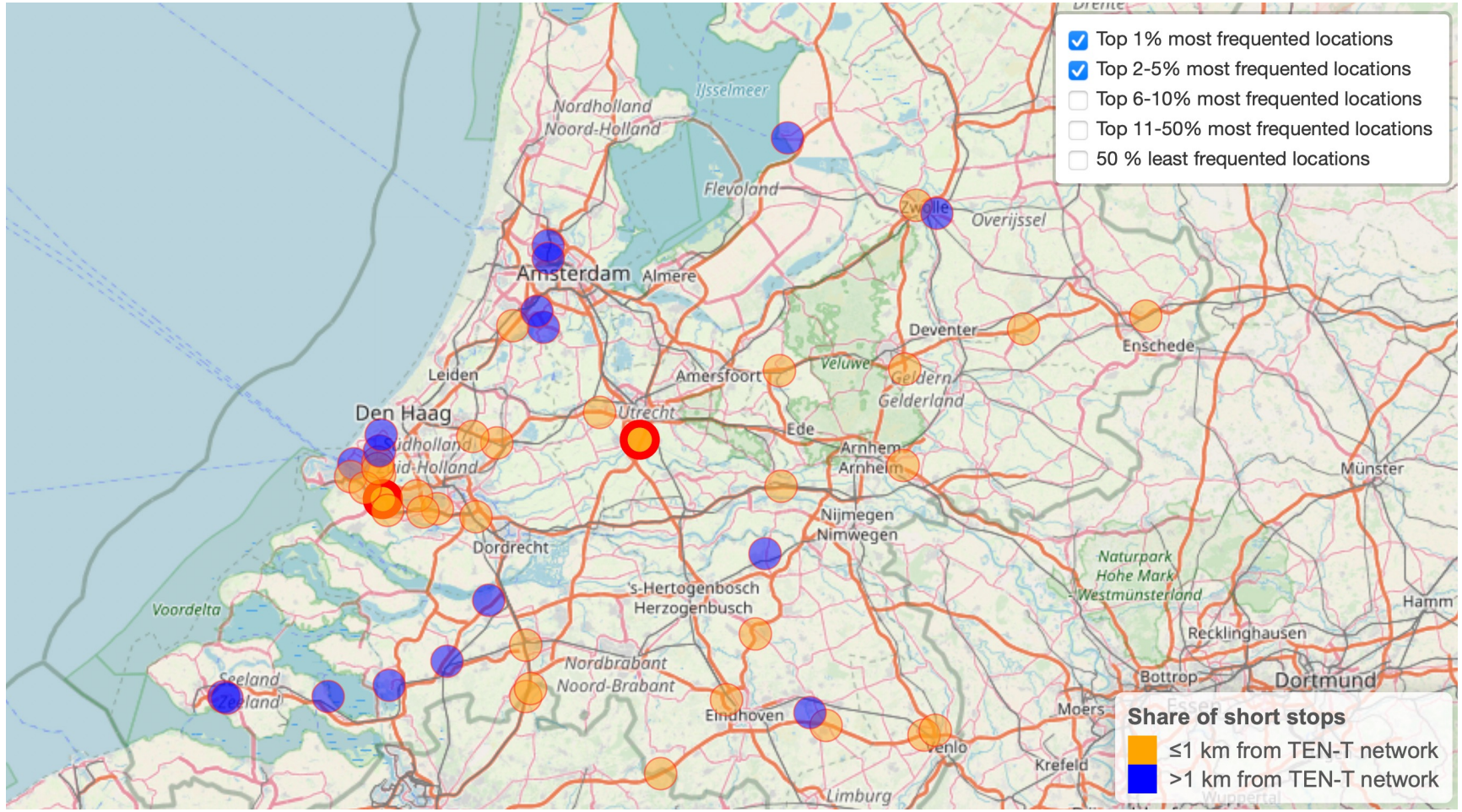
TOP 5% LOCATIONS – NETHERLANDS (2022)



TOP 5%

- 51 locations
- 1.749 stops/ day

- 2 locations with >50% short stops (less than 1h)

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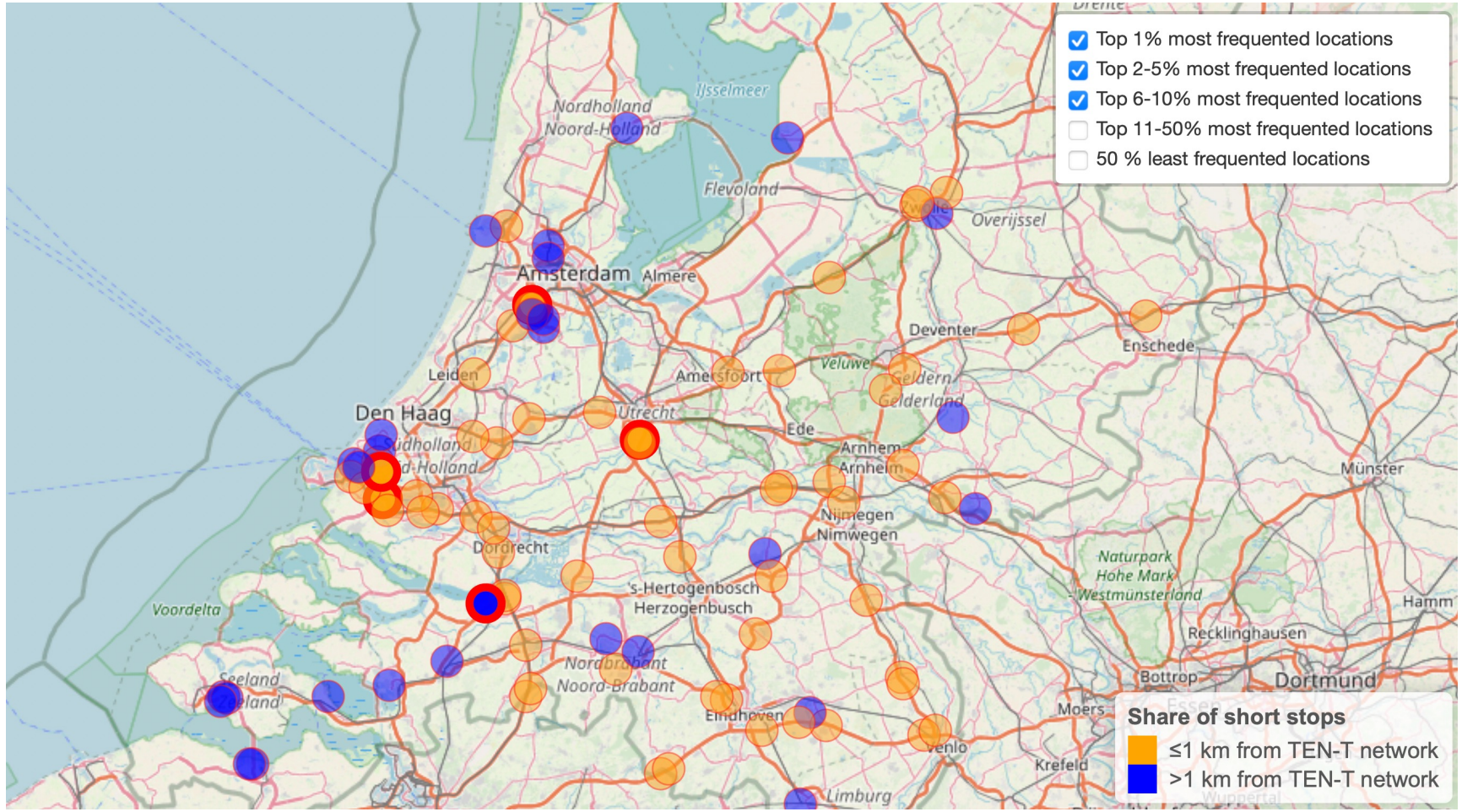
TOP 10% LOCATIONS – NETHERLANDS (2022)



TOP 10%

- 102 locations
- 2.345 stops/ day
- 4 locations with >50% short stops (less than 1h)
- Representing ~53% of all truck stops/ day

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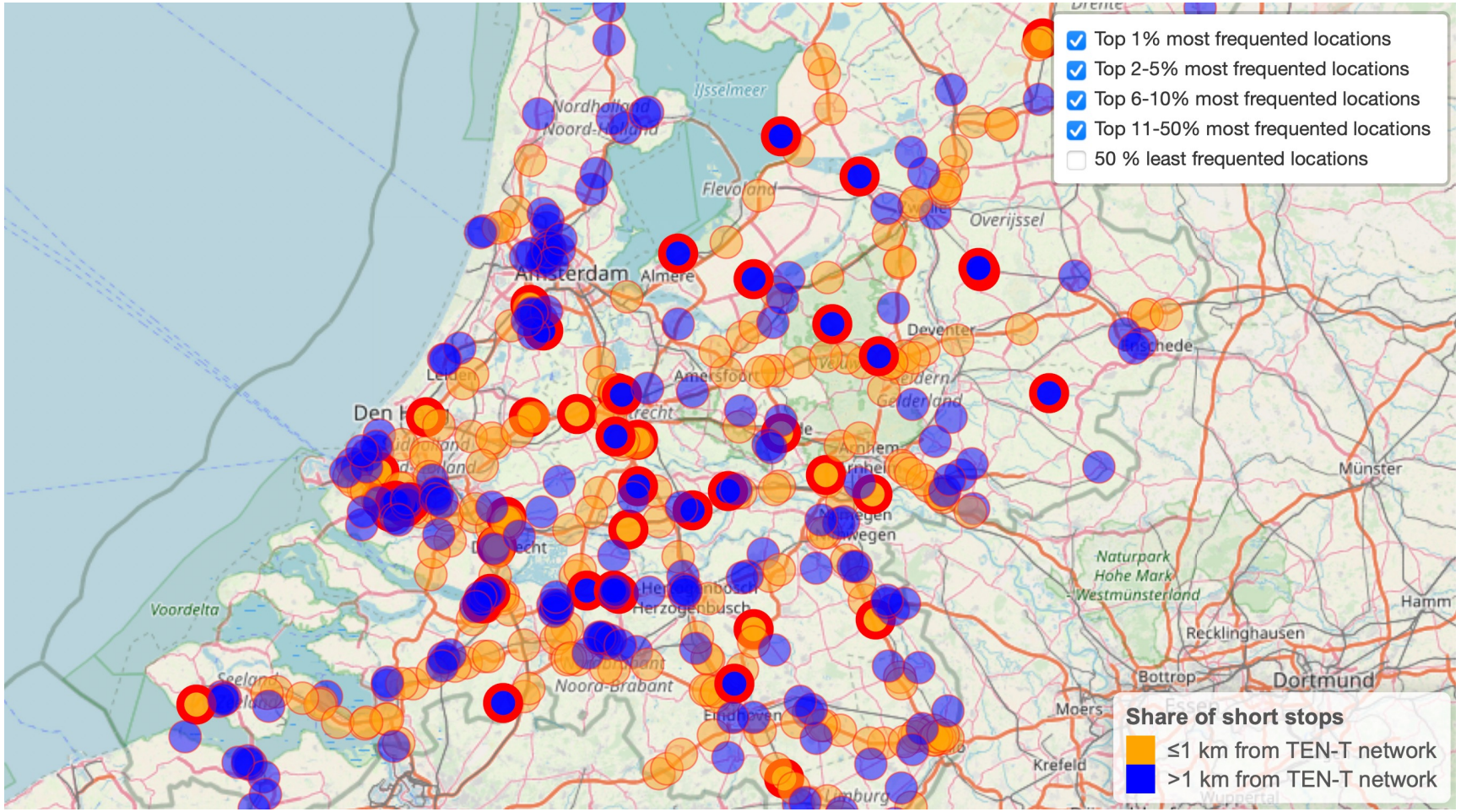
TOP 50% LOCATIONS – NETHERLANDS (2022)



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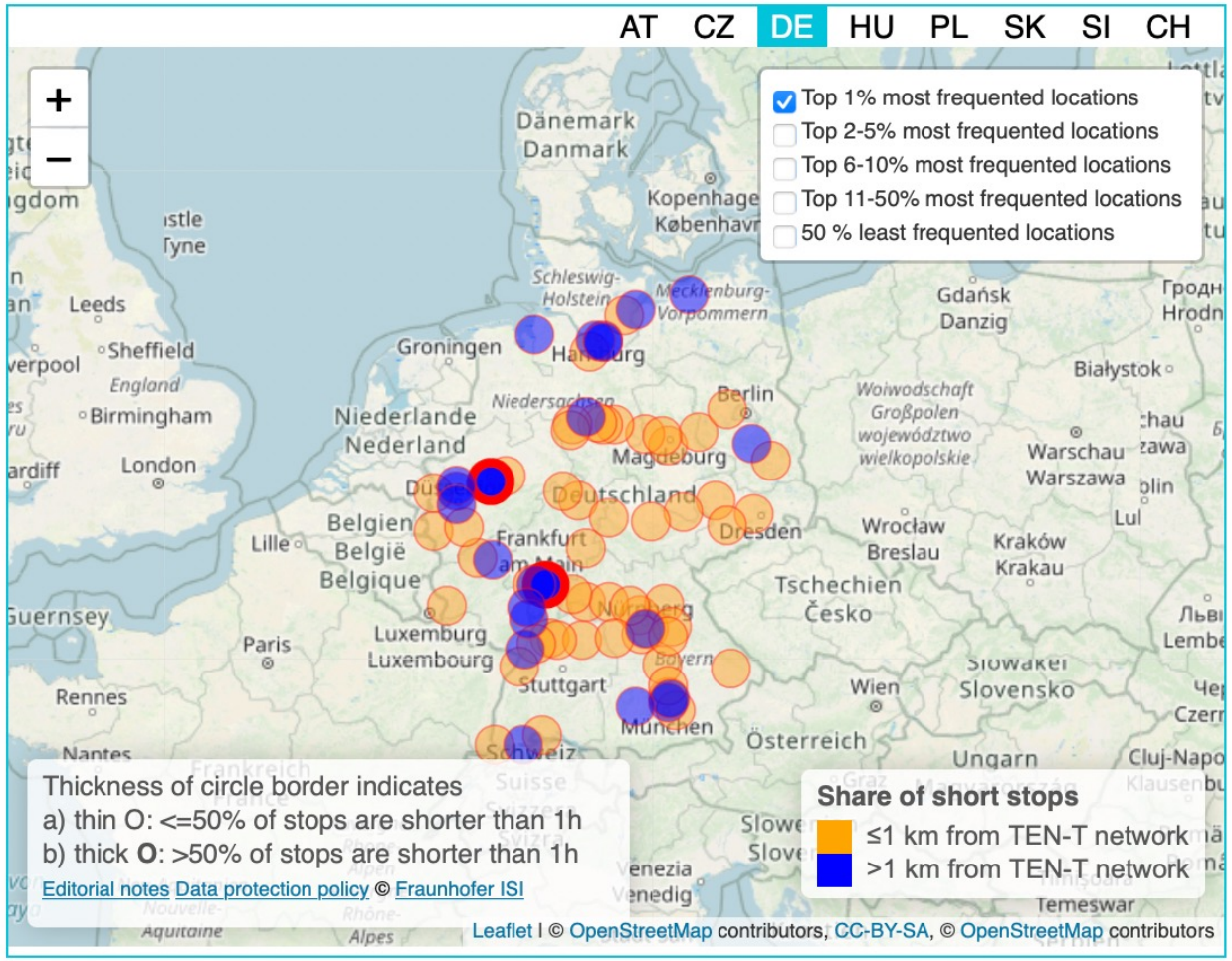
TOP 1% LOCATIONS – GERMANY (MCS)



TOP 1%

- ~75 locations
- ~4.500 stops/ day

- Representing ~13% of all truck stops/ day

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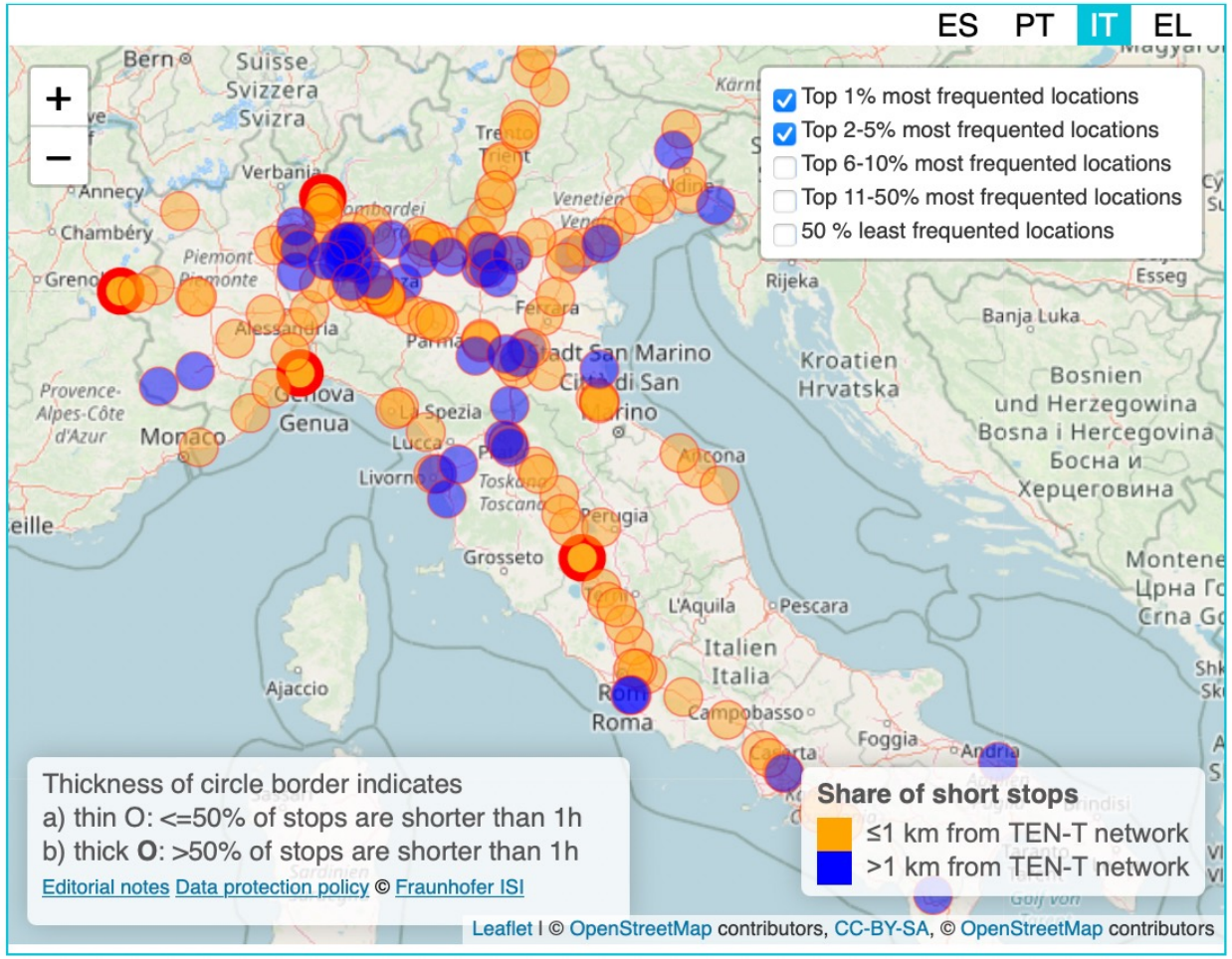
TOP 5% LOCATIONS – ITALY (MCS)



TOP 5%

- 169 locations
- 4.300 stops/ day

- 4 locations with >50% short stops (less than 1h)

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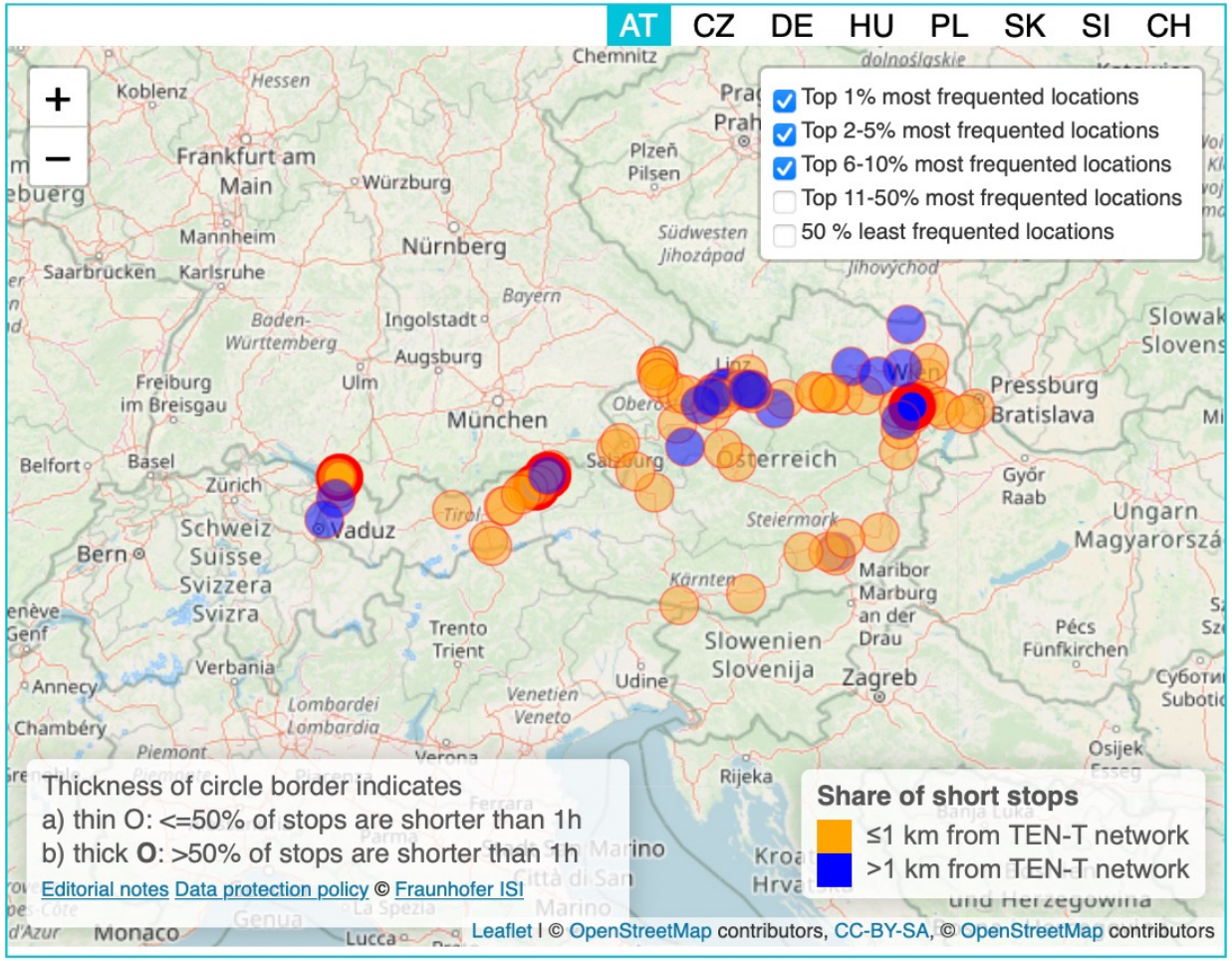
TOP 10% LOCATIONS – AUSTRIA (MCS)



TOP 10%

- 88 locations
- 2.235 stops/ day

- 4 locations with >50% short stops (less than 1h)

CONCLUSIONS

AFIR: TRUCK-SUITABLE INFRASTRUCTURE

WHERE TO START ?

- Do not expect behavioural changes
  - Truck operators will want to recharge where they usually stop today
- Do it right from the start
  - Start with regional locations/ urban nodes (by 2025)
  - But focus on MCS (ready by mid-2024 at the latest, can also be operated at lower power)
- Focus on most utilised locations
  - Aim for all TOP 10% locations in operation by 2027
  - Minimum network must be fully operational no later than 2030
- Do not delay decisions

- Let’s not forget about H2

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