towards Sustainable Refrigerated TRANSport

11 Dec. 2024, Edo Wissink (WFBR) and Matthew Woods (Maxwell and Spark B.V.)

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Idea

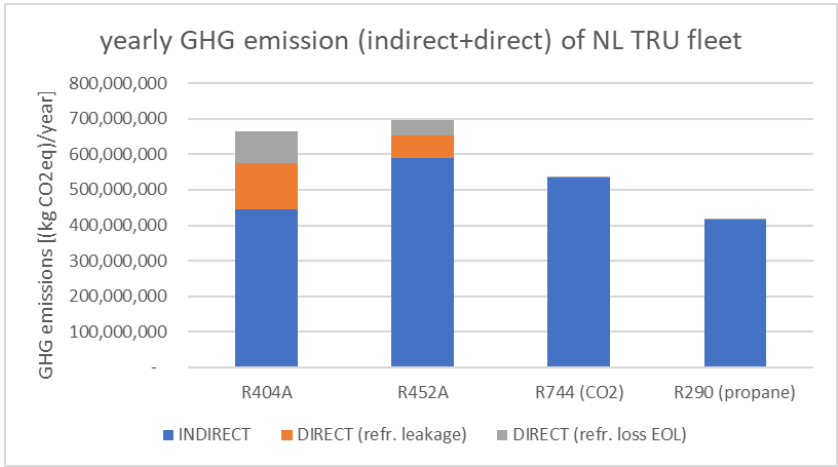
Collection of **facts and experience** of electric driven refrigerated transport:

- Different type of systems which are one market yet.
- Feasibility in practice/ success factors

Results

Fact finding: Much or little?

- NL TRUs 0.7 *10^9 kg CO2eq /yr**
- NL road transport 6.3 *10^9 kg CO2eq /yr (CBS, 2022)
- NL TRU GHG emissions equal CO2 emissions by in-house energy consumption (gas+electricity) of some 212,000 Dutch households (millieucentraal, 2023)



** No. of NL units source: RDW

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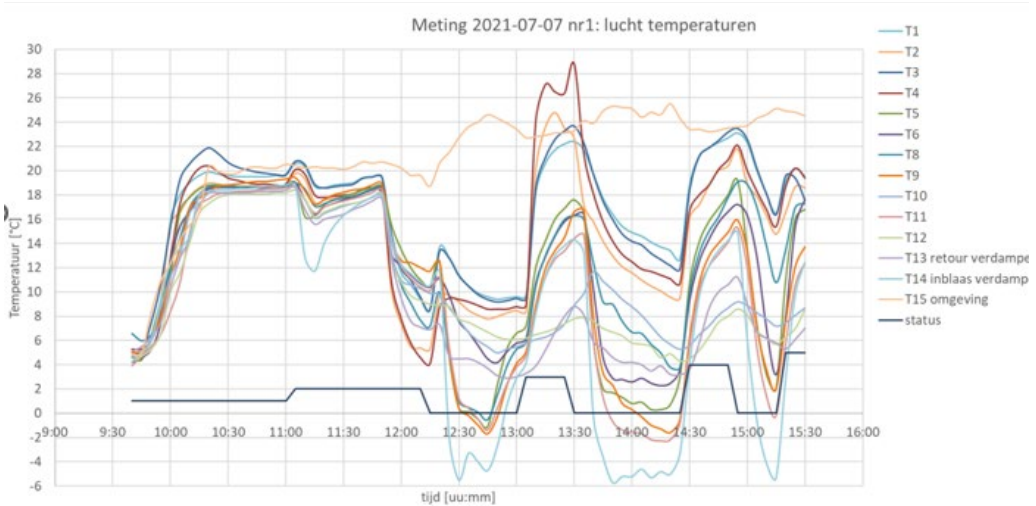
Results

- Technology and/or operational use?

Experience/measurement of Maxwell and Spark is that **charge of the battery is often not sufficient**, because the energy need in practical use is much higher expected due to **unforeseen additional heat loads**.



Results conclusion

Although the technology of **electric driven refrigeration** is available, it is **practice often less successful**.

Transition to electrical refrigeration is **not simply replacement of hardware**, but needs reconsidering/adaptation of practical operation and additional technical energy/capacity savings options of hardware.

Cooperation needed between with policy makers (Qasim Hussein @ Ministry of Infrastructure and Water Management), research, hardware suppliers and end users.

KNVvK Themabijeenkomst "Gekoeld transport" in Wageningen on 14 November 2024 +**RCC publication**

next steps

Reduction of required energy/capacity needed for successful transition (weight- and cost savings)

a. Technology improvements/correct selectin

b. Adaptation of logistic by user to avoid

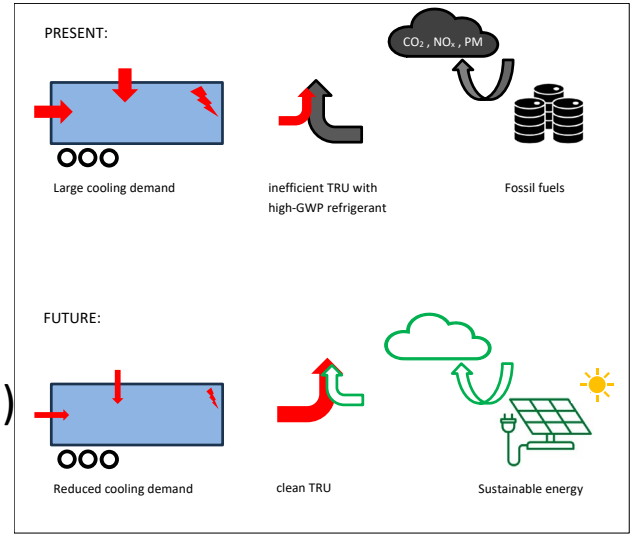
PPS SURETRANS –SUstainable REfrigerated TRANSport

Consortium: Maxwell and Spark, TIP, WFBR.

Not granted:

"The proposal is a good topic and relevant to the KIA. It is not sufficiently clear what the impact of the result is on the acceleration of electricity".

Next option: PPS Innovatieregeling 2025- Call 1 (closes 28 March)



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Support experienced private partner

A leading innovator in Li-ion battery technology for industrial mobility systems.

- Created a valuable platform for discussing the challenges associated with adopting electric solutions in the transport refrigeration industry.
- Facilitated a connection with a research institution, providing critical insights and expertise in our market.
- Marked an essential first step in fostering collaboration between industry and research institutions to drive the green transition forward.

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Thank you

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