

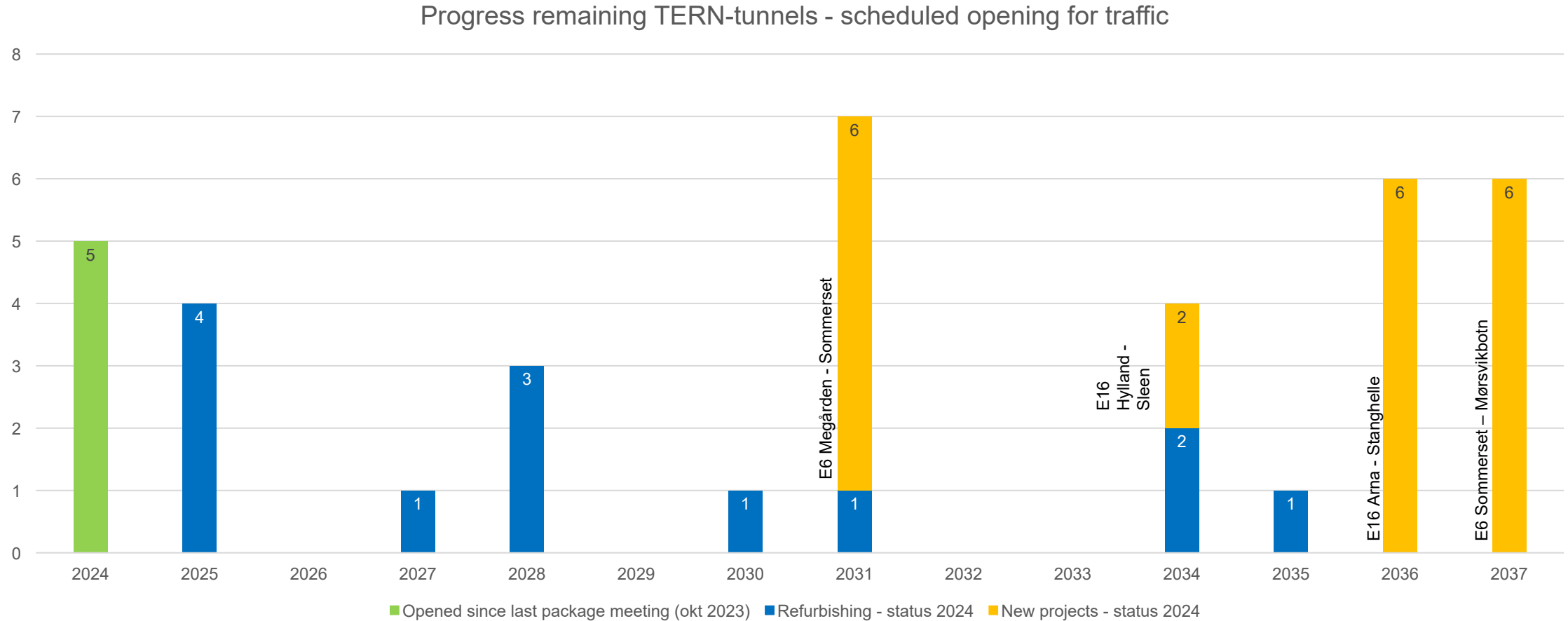


Plans and expected timelines for the full upgrade of the TERN-tunnels

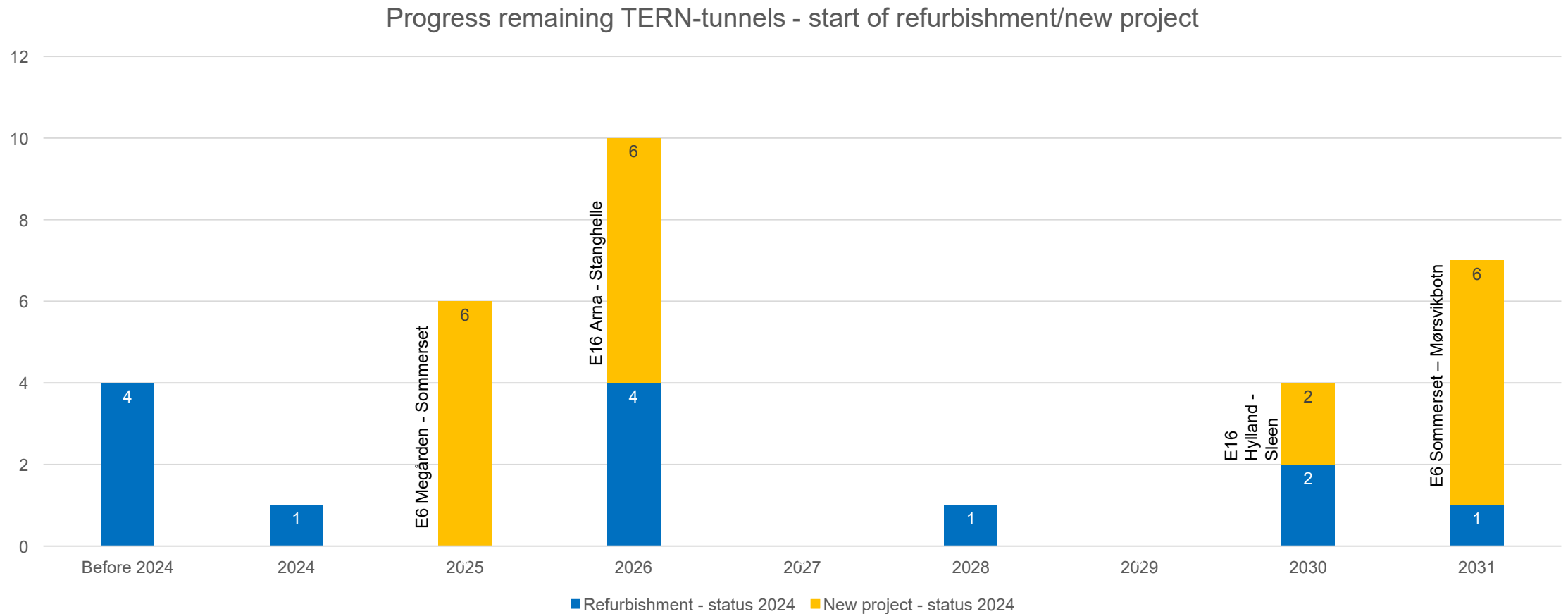
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Package meeting 25.10.2024

Expected opening for the remaining tunnels



Planned start for remaining tunnels



Current status for «new projects»

E6 Megården – Mørsvikbotn

- Part 1, Megården – Sommerset, is on schedule
- The NPRA will facilitate the continuation of the development of the second stage once the first part is completed.

E16 Arna – Stanghelle

- 2023: 2025?
- With the budget proposal for 2025, the government plans to make a proposition to the Storting to start E16 Arna-Stanghelle in the spring session of 2025.
- Start: 2026

E16 Hylland – Sleen

- 2023: 2025?
- The NPRA will assess whether, within the overall investment framework, there is room to start the E16 Hylland–Sleen project within the first six-year period of the National Transport Plan 2025–2036.



Risk reducing measures

As previously reported, where we don't meet the minimum requirements, the following measures will be installed:

- *Emergency power supply, safety lighting and evacuation lighting:*

The risk that the lack of safety lighting and evacuation lighting represents, is mitigated by the installation of evacuation lighting with its own backup-battery. The evacuation lighting is set to provide constant light, instead of being switched on in case of incident, and because of the built-in backup-battery it works even in the case of a power supply deficiency, thus combining both functions. This measure is contracted as scheduled, and under installment since 2023. Expected to be completed in 2025.

- *Tunnel closing equipment:* Expected to be completed in 2025
- *Earlier lack of emergency stations:* Expected to be completed in 2025
- *Radio:* All tunnels comply with the minimum requirements concerning communication systems



Compliance to the minimum requirements of the Directive

Minimum safety requirements

- The Norwegian TERN tunnels generally complies with most of the specific safety requirements laid down in point 1. 2 in Annex I to the Directive.
- Moreover, the organization of maintenance operations in one national administration, with the same rules and practice within the country, ensures proper maintenance of the safety facilities in the tunnels.
- However, as the tunnels do not comply with the requirements in N500, the NPRA considers that the tunnels cannot fully comply with point 1.1 in Annex I before a complete refurbishment is carried out.

Periodic inspections

- The National Road Inspection Entity carries out periodic inspections, evaluation and tests on the national road network. The entity has a high level of competence as required in the EU-directive and is functionally independent from the tunnel managers.
- Although the Entity reports every failure or lack of compliance found under inspections, no tunnel on the national road network has been found necessary to close as one waits for refurbishments.



Challenges for tunnel refurbishment in Norway: topography and weather



- *The lack of, or unsuitable, diversion routes* is the main issue for the remaining tunnels in the refurbishment program.
- E16 and E39 represents *the core of the national road transport system*. A disproportionate reduction of accessibility on these routes will inflict major inconveniences on society, especially the transport industry. The numerous tunnels on those roads can only be closed according to a carefully planned scheme considering the whole network.
- Alternating *one-way traffic* and *night closures* are the most used traffic management solutions. Total closures are rarely possible due to the lack of alternative routes.
- Due to the required time for rigging up and down completely in one shift, and making sure so there's an acceptable safety level in the tunnel when re-opening the tunnel in the morning, doing refurbishments exclusively at *night* extends the duration of the planned works by 4 to 5 times.
- *Winter conditions*, and dealing with *winter maintenance*, on road passes has strong influence/disturbance on traffic to such an extent that it is not possible to go through with refurbishments there during wintertime. The refurbishment must then be carried out over several summers. (e.g. Haukeli)

