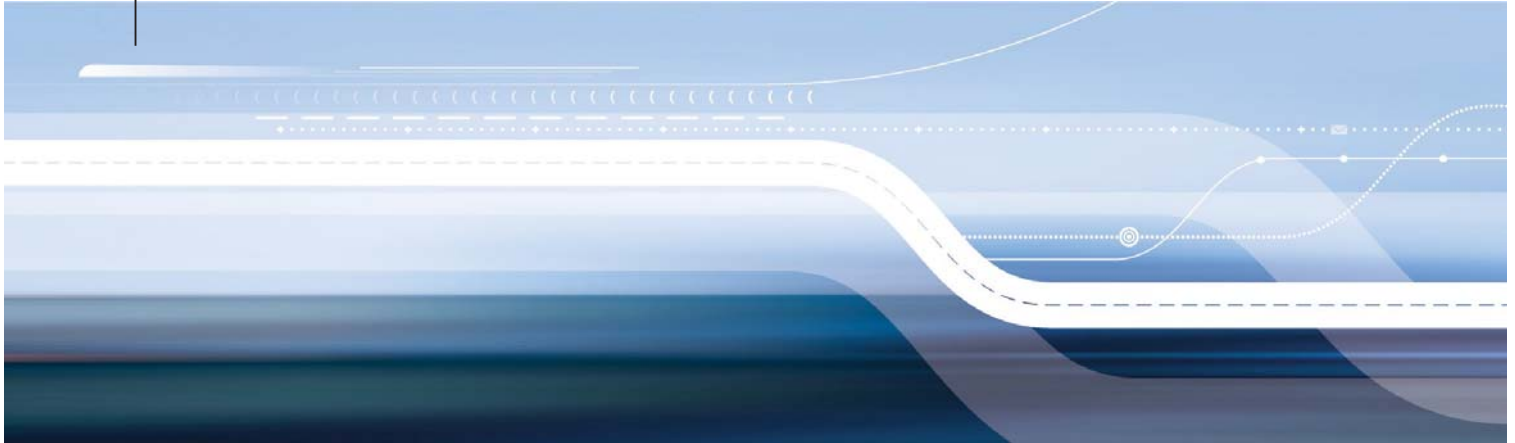


Planning for the Future

The National Transport Plan and regulatory development in light of new technologies

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Outline

- The current National Transport Plan and new technology
- Preparations for the next NTP
- Technology trends and policy implications
- New regulations for testing and implementation of new technologies

Engelsk

Transport policy and technology: National Transport Plan (NTP) 2018-2029

- White Paper to the Norwegian parliament
- Investment plan for all modes of transport in Norway (not binding in terms of budget allocations)
- Heavy emphasis on new technology and its opportunities:
 - Reduce greenhouse gas emissions
 - Improve mobility
 - Improve safety
 - Contribute to wealth creation and new jobs



The NTP and technology – a strategy

- Have a flexible approach towards regulatory issues. Regulations must not be an obstacle to innovation
- Actively use measures such as taxation and public procurement to promote innovative technological solutions
- Participate actively in international cooperation in this area, to support standardisation measures and to avoid fragmented solutions that do not work across borders
- Actively support technological pilot projects
- Increased focus on the provision of relevant and up-to-date knowledge, with a view to understand how technology can help achieve policy objectives in the transport sector
- Provide the appropriate infrastructure

Implementation of the "technology strategy"

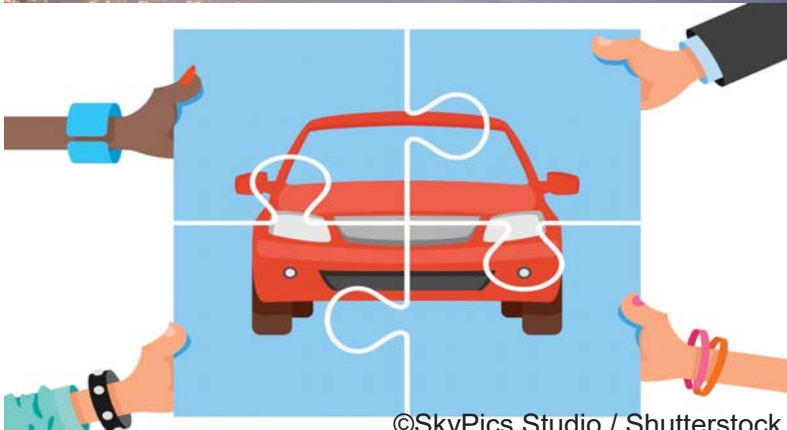
- Regulations: remove obstacles to innovation and new technologies (regulatory sand boxes - testing of self-driving vehicles and autonomous vessels)
- 1 billion NOK (over the period 2018-2029) allocated to R&D, innovation, pilot scheme activities and a competition for Smarter Transport in Norway
- Funding for technology and pilot projects in the transport agencies (road, rail, maritime and aviation)
- Pilot scheme for an alternative core network (secure robust electronic communication services)
- Smart Transport Challenge – competition between counties about developing smarter transport in Norway
- Pilot-T, a new instrument to promote R&D, innovation, and business opportunities brought on by the digitalization and green transformation of the transport sector

Preparations for the next NTP (2022-2033)

- It is now clear that new technology is reshaping the transport sector fundamentally
- Understanding the development and its potential consequences is very important
- New technology represents great opportunities in terms of improving our transport system
- If we fail to understand the development and exploit the opportunities it represents, we'll not be able to achieve our transport policy goals (failing to improve mobility, spending our funds unwisely, building unnecessary infrastructure, etc.)
- Heavy emphasis on knowledge: expert group on new technology and planning, transport21 (R&D), technology study

Technology trends and policy implications

- Electrification (battery electric and hydrogen electric)
 - Automation and autonomy
 - Connectivity
 - New services and business models (sharing)
- considerable potential to change the transport sector, and to help us achieve transport policy goals. But we need to avoid the pitfalls!
- infrastructure investment projects, and the planning system in general
- transport policy priorities



Autonomous ships - removing regulatory obstacles

- The Pilotage Act is not compatible with autonomous operations (larger vessels, >70 m.)
- The government has proposed amendments to allow for autonomous vessel operations in coastal waters (new port and harbour act)
 - Autonomous vessels may fulfil the pilotage requirement through a permit issued by the Norwegian Coastal Administration
 - Case by case, terms and conditions to ensure the safety of the operation and avoid consequences for other traffic
- Parliament will consider the proposal shortly

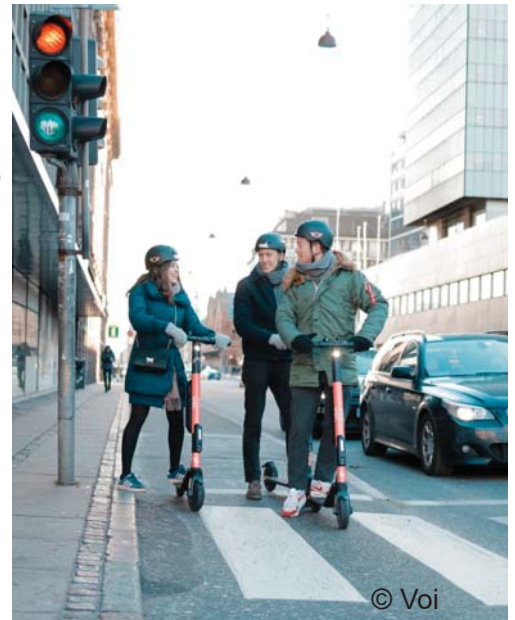


New legal framework for testing of self-driving vehicles

- A new legal framework (Act) for testing of self-driving vehicles in force 1 January 2018.
- Allows testing of such vehicles in accordance with a permit given by the Norwegian Public Roads Administration.
- Step-by-step approach, taking the maturity of the technology into account. The testing have to ensure traffic safety and protection of personal data
- The applicant for a permit have to appoint a person to be responsible for the testing.
- Both the applicant and the appointed person can be held liable in case of an accident. They can also be subject for criminal charges if a breach of the legislation is caused by fault (intended or by negligence).

Small electric vehicles

- New regulations allowing the use of small electric vehicles entered into force in Norway in April 2018
- Vehicles built for one person only, with a maximum weight up to 70 kg, a maximum width and length up to 85 cm and 120 cm and a constructive speed not over 20 km / h are now classified as bikes.
- Can be used on sidewalks and pedestrian and bicycle roads, no requirement for minimum age or helmet usage. No registering or liability insurance requirements.



Drones/RPAS

- Rapid development of drone technology opens up new opportunities.
- Adequate framework and infrastructure will make it interesting for the public and industry to apply new technologies.
- The Government has recently presented Norway's first drone strategy, which aims to facilitate both safe use and growth.





Norwegian Ministry of Transport and Communications

Thank you for your attention!

