

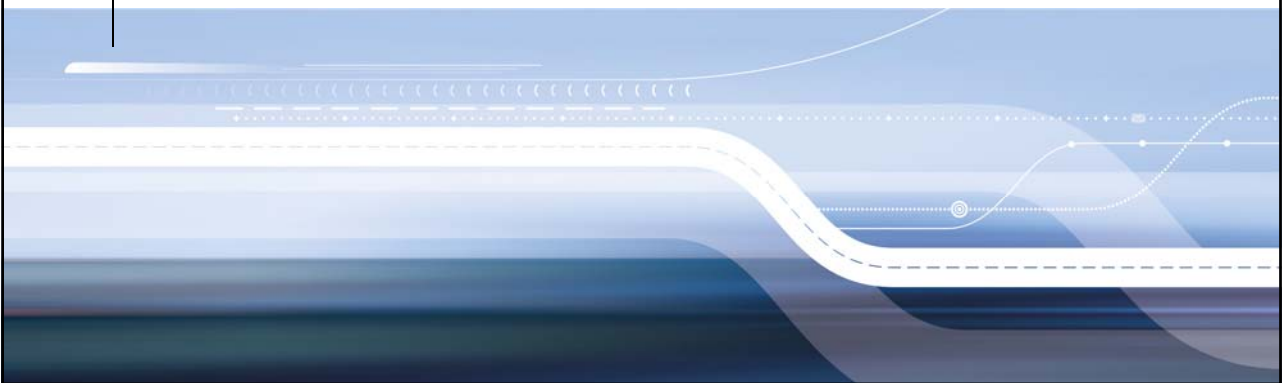


Norwegian Ministry of Transport and Communications

The National Transport Plan and Technological Advances in the Transport Sector

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Trondheim, 10 August 2017



Ministry of Transport and Communications

Overall responsibility for:

- Postal and Telecommunications activities
- Civil Aviation
- Public Roads (incl. Ferry Services)
- Rail Transport
- Maritime Transport
 - Maritime Infrastructure and Services
 - Governmental Pollution Preparedness and Response systems

- Long-term planning (White Paper: National Transport Plan)
- Regulatory development
- Budgetary matters



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Outline

- National Transport Plan (NTP) 2018 – 2029
- NTP: Technology strategy
- NTP: Tools and measures for technology development
- Autonomous driving (generally)
- Self-driving/ autonomous vehicles – road transport
- Drones – civil aviation
- Autonomous vessels – maritime transport



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National Transport Plan 2018-2029

- White Paper to the Storting
- Investment plan for all modes of transport in Norway (not binding in terms of budget allocations)
- The National transport plan 2018 – 2029 presented this spring, approved by the Storting before the summer
- Overall objective: *A transport system that is safe, enhances value creation and contributes to a low-carbon society.*
- The government proposes to spend 1064 billion NOK (approximately 127,6 billion US \$) on transport and communications (2018-2029)

REGJERINGEN
SAMRÅDSEKSPEDISJONEN
Meld. St. 33
2016-2017
Møting 45. Stortinget

Nasjonal transportplan 2018–2029



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NTP: Technology 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



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NTP: Economic incentives for technology development

- Proposal: 1 billion NOK (2018-2029) allocated to innovation, pilot scheme activities, R&D and a competition for Smarter Transport in Norway.
- Pilot-T, a competition arena for innovation, pilot projects and R&D
- Competition (county councils and the City of Oslo): developing smarter transport in Norway. Allocate 100 million kroner to 1–3 winning bids.
- Transport agencies and Avinor: investments in new technology
- Pilot scheme for an alternative core network (secure robust electronic communication services)



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Autonomous driving

- One of the most prominent technology trends, across the various modes of transport
- Stunning technological development – what seemed like science fiction a few years ago is becoming reality
- Represents great opportunities in terms of safety, efficiency and environmental benefits
- The role of the Ministry: facilitate (research, development and real-life testing)
- Removing legal and regulatory obstacles
- Safety always comes first!



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Self-driving/ autonomous vehicles

- Potential benefits: improved road safety, improved mobility services for lower costs, more effective use of traffic areas, environmental benefits
- Comprehensive testing is essential
- Process to remove legal obstacles to facilitate testing.
- Proposal presented to the Parliament (June).
- Objective: facilitate for testing of self-driving vehicles while ensuring road safety and data protection.
- Step-by-step approach, system of approval procedures and supervision



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Drones

- Potential benefits: cheaper, faster, more environmentally friendly and safer in many areas of use
- Facilitate further growth, without inconvenience to other actors and interests, and without compromising safety
- Regulatory framework enabling safe integration of drones in the airspace. Simple, proportionate to risk and future-proofed regulations
- The government has established an intergovernmental group of experts assessing regulation of drone activity in Norway
- Before the end of 2017: drone strategy, dealing with the roles of public authorities, service providers, manufacturers, operators, system developers and users



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Autonomous vessels

- In general: development of new technology and services with the potential to revolutionize maritime transport – ITS, e-navigation etc.
- Technological preconditions: digitalization, sensor technology, data processing capacity, system integration, radio communication systems, new propulsion technology
- Autonomous vessels: the most dramatic innovation to date
- Potential benefits: improved efficiency, competitiveness, safety; reduced (operating) costs
- Norwegian maritime industry: world leading
- Norwegian maritime authorities: cooperation with industry and R&D institutions – testing area, Norwegian Forum for Autonomous Ships



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Autonomous vessels – the Ministry's approach

- The role of the Ministry: facilitation
- Primary concern: safety
- Facilitation of R&D and testing
- Removing legal and regulatory obstacles
- Comprehensive legal review underway
- Review of implications for navigational infrastructure and – services (AtoN, pilotage, VTS services etc.)



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Thank you for your attention!

