TNO: 7 themes

- Healthy Living
- Industrial Innovation
- Defence, Safety and Security
- Energy
- Mobility
- Built Environment
- Information Society
Focal areas

- Energy transition
- Reduction of energy consumption
- Generation/storage/transport
- Decentralised supply
- Sustainable sources
Dream: wouldn’t it be nice if …

Sustainable
Energy-neutral
Clean
CO₂-low
Need: to reach 2°C target

All sectors

20-30% in 2020

Transport

20% emission
Trends

PV technology
Source: Nanosolar

Electric drive
Source: Stichtingmilieunet.nl

Road-building
Source: Solar Roadways

Source: Dorns Road Energy Systems
Motivation summed up:

Generation of sustainable electricity
› Large-scale
› No additional need for space
› No landscape pollution

With mobility e-link:
› Generate energy where needed
› Clean
› Low CO$_2$ emission
Began with cycle path

- NL cycle paths total ca. 15,000 km
- many new cycle paths being built
- cycling is sustainable

- lower traffic load
- fewer (strict) requirements
Technical specification

- prefab elements
- concrete housing
- solar cells
- optical layer
- transparent top layer
Tests

- Strength
- Stiffness
- Light yield

Time

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TNO innovation for life
Comparison with other solar cell application

Energy ≈ Costs
Is SolaRoad profitable in the long term?

Question applies to all solar energy applications

South Europe: 4-5 yrs

NL: 5 - 8 yrs

Source: European Commission, A vision for photovoltaic technology
Timeline

- **January 2011**: Presentation in NEMO
- **Summer/autumn 2012**: Realisation 1st pilot

From 2015:

- **Mature products**

From 2010:

- **2010**
  - Demonstrator

- **2011**
  - January 2011: Presentation in NEMO

- **2012**
  - Summer/autumn 2012: Realisation 1st pilot
  - From 2015: Mature products
Pilot in Noord-Holland

- Ca. 100 m SolaRoad cycle path
- Location: N203 at Krommenie
- Targeted realisation date in summer 2012
- Duration of pilot: 5 years
- Working and safe but experimental
- Core consortium: TNO, Ooms, Imtech, PNH
Call for action

› SolaRoad is a realistic option

› Pilot cycle path in 2012 in Noord-Holland

› Consortium can be expanded (conditional)
  Additional knowledge and expertise
  Resources (money, material)

› Interested in discussing the possibilities? Contact:
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