



MINISTRY OF RURAL DEVELOPMENT

First Hungarian National Environmental Technology Innovation Strategy (NETIS)

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AGENDA

1. Planning the NETIS; relevant EU and National Policy context
2. Implementation
3. Future goals
4. Best practices



EU AND NATIONAL POLICY CONTEXT

- Lead Market Initiative (6 leading markets, 4 relevant for Environment)
 - Sustainable construction, recycling, bio-based products, and renewable energies
- Eco-AP: Eco-innovation Action Plan (2011)
- IPP/SCP: Integrated Product Policy/Sustainable Consumption and Production
- Europe 2020 Strategy: 7 flagship initiatives, 5 key targets
- Hungarian National Reform Programme (implementing EU 2020, yearly)

Hungary agreed to raise the proportion of renewable energy sources to 14.65 per cent, to achieve a 10 per cent overall energy saving and increase its greenhouse gas emissions in sectors outside the EU Emission Trading Scheme by no more than 10 per cent (compared with the 2005 level) by 2020.

- New Széchenyi Plan (ÚSZT): Hungarian Operative Programmes (competitiveness and new jobs)



WHY ESTABLISHING THE NEW STRATEGY?

Global crisis -> challenge & opportunity for:

- greening the economy, and creating green jobs
- moving towards sustainable development
- improving the state of environment: smaller ecological footprint & lower ecosystem load
- facilitating cleaner production (pollution prevention, sound waste management, efficiency improvement)

Key is: Innovation!

**Government Decision No. 1307/2011. (IX. 6.) on Hungary's first
National Environmental Technology Innovation Strategy
(NETIS)**



Government Decision No. 1307/2011. (IX. 6.) on Hungary's first National Environmental Technology Innovation Strategy

- Planning process was started in 2010 summer
- Nation-wide partnership/consultation was carried out, involving all stakeholders
- The strategy was finalized by fall 2011

Next slides:

- Vision and objectives
- Policy tools
- Interventions
- Indicators (17)
- Targets: 1 horizontal, 8 sectorial areas (9 areas)



Vision and Objectives	Policy tools - measures	Environmental technology tools of interventions
• Foster environmental industry, technology • Increase the share of environmental related innovations, competitiveness • Paradigm shift: from end-of-pipe approach to prevention • Increase effectiveness • Decrease primary material use • Increase reuse/recycling	Greening governance: Increase internal government cooperation Legal tools: Innovation friendly legal system Economic instruments: • Greening tax system • Green public procurement • Supporting environmental friendly subsidies -removing environmental harmful ones Social tools: raising awareness, education, management	• Technological innovations in pollution prevention • Environment based innovation of products / eco-friendly product design • Environmental innovation in services/greener services • Technological innovation in pollution management • Impact assessment of environmental technology • Incorporation of environmental technologies in education, social awareness-raising programs



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Indicator	Unit	Target % by 2020 (2007=100%)
Material intensity	DMC/GDP	80
Energy intensity	toe/GDP	80
Water intensity	m ³ /GDP	80
Import dependency from fossil energy carriers	%	75
Share of renewable energy sources in electricity generation	%	275
Energy efficiency of road transport	toe/tkm	80
Energy efficiency of railway transport	toe/tkm	85
Use of commercial packaging material	t	75
Municipal solid waste generation	t/cap	70
Recycling packaging waste	%	150
Generation of waste water	m ³	70
Population served by waste water treatment	%	125
Public and private expenditures for environment related R+D+I	GERD %	200
Distribution of energy saving devices and equipments	million HUF	250
Employment in environmental industry	%	200
Environment-related registered patents and trademarks, notifications	pieces	300
Export income from environmental industry trading	%	150



IDENTIFIED SECTORS

- Horizontal type technological innovations (key technologies and sustainable resource management)
- Waste
- Water (sewage treatment and water supply management)
- Air
- Noise and vibration
- Agriculture and soil protection (irrigation, environmentally sound cultivation technologies)
- Remediation
- Renewable energy
- Construction industry



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TARGETS FOR INNOVATION & DEVELOPMENT AREAS I.

Targets for innovation

Development areas

1. Horizontal type technological innovations

- sustainable resource management
- improvement of resources efficiency
- application/use of key technologies to decrease the environmental burden of relevant sectors

- resource efficiency increasing technological innovations, such as: application of nanotechnology in the field of energy-, environment- and production technology
- application of biotechnology in the field of agricultural, food production-, chemical-, energy sectors, environmental remediation
- use of photonics in renewable energy production technologies
- development of advanced materials,
- bio-based products

2. Waste

- reducing the waste production
- less hazardous waste
- selective collection of municipal waste
- recycling of paper-, plastic-, glass-waste, recycling of demolition waste
- decrease of the organic content of the municipal waste before disposal

- low-waste technologies
- separately collected waste processing, (particularly iron, steel, paper, glass, plastic)
- production of secondary raw materials from waste (e.g. construction and demolition, rubber, textiles)

3. Water

- decrease of the specific water use in industry and agriculture
- waste water recycling as nutrient and energy source
- ensuring high quality drinking water supply

- water-efficient technologies
- introduction and development of relevant key technologies
- water-saving agricultural technologies
- for drinking water: iron and manganese removal



TARGETS FOR INNOVATION & DEVELOPMENT AREAS II.

Targets for innovation

Development areas

4. Air

- | | |
|--|--|
| <ul style="list-style-type: none">• improvement of air quality of settlements decreasing the transport originated air pollution, specially the emission of PM 10• decreasing the air pollution coming from households | <ul style="list-style-type: none">• development of public transport vehicle fleets• improvement of traffic control; and settlement-development aiming reduction of transportation needs• upgrading heating and energy efficiency in households |
|--|--|

5. Noise and vibration

- | | |
|---|---|
| <ul style="list-style-type: none">• decreasing the noise pollution in settlements• vibration protection, with special attention to the transport | <ul style="list-style-type: none">• noise barriers• noise and vibration reducing traffic developments• sound insulation providing by building materials |
|---|---|

6. Agriculture and soil protection

- | | |
|--|---|
| <ul style="list-style-type: none">• decreasing the environmental load originating from agriculture• soil protection• improving efficiency of the water use• decreasing the use of pesticides, (enhancing the sustainable pesticide use)• reducing the soil pollution• reducing the waste production | <ul style="list-style-type: none">• agricultural technologies, -processes with lower environmental impacts• organic farming technologies• increasing efficiency of nutrients use,• irrigation and water recycling technologies• biological agents, integrated pest management techniques - IPM• agricultural waste energy recovery• use of geothermal energy in agriculture |
|--|---|



TARGETS FOR INNOVATION & DEVELOPMENT AREAS III.

Targets for innovation

Development areas

7. Remediation

- remediation of polluted compartments (soil, water) and monitoring
- giving priority to the „green” remediation

- bioremediation
- innovative technologies
- in-situ processes

8. Renewable energy

- efficient use of different renewable energy resources

- development of photovoltaic technologies, installations, equipments
- heat pump energy use
- waste heat capturing, waste heat capturing integrated (cascade), heat energy recovering systems
- geothermal energy use
- domestic use of solar energy in households
- sustainable use of biomass, wastes/by-products of food production
- small wind turbines
- developing options for energy storage

9. Construction industry

- environmental friendly construction
- sustainable resource management
- energy efficient buildings

- building materials from renewable sources
- use of secondary raw materials
- use of renewable energy sources
- thermal insulation



IMPLEMENTATION OF THE STRATEGY

Use it for planning:

- 2011-2013 current (financing) programmes
- Mainstream into other (national) strategies
 - National RDI Strategy (NKFIS)
 - Rural Development Strategy (NVS)
 - 4th National Environmental Programme (NKP)
- Future: 2014-2020 finances (MFF)



FIRST EXPERIENCES FROM THE IMPLEMENTATION (only the beginning)

- 1st review of implementation by 31.12.2013
- We have to improve the connection between targets and indicators and it is needed to review them
- Maybe set some new goals and use some new indicators, but only where data is available!
- Good monitoring system is very important, to collect the right data



FUTURE

Goals (to achieve):

- Sustainable development
- Increase the use of renewable resources
- Cooperation (companies, nations)
- Maximize happiness, satisfy real needs
- Develop regional/local economies





IMPLEMENTATION (financing)

We need 3 factors for good and effective implementation:

1. Money, money, money
2. Good strategic planning (good strategy)
3. Good cooperation, synergies
 - With other ministries, partners
 - Civil society
 - Universities
 - Companies



BEST PRACTICES FOR CLEANER PRODUCTION

Green Awards:

- Environmental Innovation Award
(1 example)
- Environmental Saving Award – KÖVET
(2 examples)



ENVIRONMENTAL INNOVATION AWARD

- ✓ Dalmand Zrt, & University of Debrecen
 - „climate change adaptation” project (agriculture)
 - Problem: uneven, unpredictable rainfall
 - keeping the autumn and winter precipitation for spring and summer in fish-ponds
 - Synergies between fish production and irrigation
 - Outcome:
 - optimized water use for irrigation and fish production
 - safer crop production, increased yield





ENVIRONMENTAL SAVING AWARD II.

2. Dreher Beer Factory

- savings on steam loss with a new technology
- payback period: within 3 years
- 9.500 Gm³ gas saved/year





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THANK YOU FOR YOUR
ATTENTION!



Your questions are welcome:
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