Austrian Masterplan for Cycling
Assessing Benefits - Applying THE PEP HEAT for Cycling

Robert Thaler
Head of Division Transport, Mobility, Human Settlement and Noise
Austrian Ministry for Agriculture, Forestry, Environment and Water Management
Austrian Masterplan Cycling
National strategy to promote cycling

- Positive contribution to attain environmental goals
  - Reduction of greenhouse gases (climate protection)
  - Reduction of air pollutants (particulates, NOx)
  - Reducing traffic noise
- Positive effects for health
- Increased quality of life
- Goal: doubling of the Austrian cycling modal share from 5% to 10% by 2015
“Masterplan Cycling”
7 areas of action, 17 concrete measures

<table>
<thead>
<tr>
<th>Infrastructure and organization</th>
<th>Motivation</th>
<th>Coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attractive and safe cycling infrastructure</td>
<td>Mobility Management for cycling</td>
<td>Intensified cooperation of authorities on all</td>
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<tr>
<td>Bicycle-friendly and safe traffic organization</td>
<td>Awareness raising and traffic education</td>
<td>levels for bicycle traffic</td>
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<td>Optimization of intermodal network with public transport</td>
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THE PEP Transport, Health and Environment Pan-European Programme
Implementation „Masterplan Cycling“

- **National cycling coordination and cooperations**
  - Nationwide cycling co-ordinator established at the Ministry of Environment in Division Transport
  - National Task Force of Ministries, Federal States and the bigger cities to enhance implementation of measurements on federal, regional and local level
  - Cooperation with traffic companies, economic representatives Chamber of Commerce, bicycle industry, NGOs
  - „Cycle – Summits“ of Minster with the Federal States and stakeholders of regions and communities
  - Internet platform und benchmarking [www.radfahren.klimaaktiv.at](http://www.radfahren.klimaaktiv.at)
Implementation Masterplan Cycling: Partnership with economy: Cycling - a Win Win for environment and economy

Joint initiative Ministry of Environment and Chamber of Commerce 2009: Calculation of the economic value of the cycling sector in Austria

- 882.5 mio. Euro added value
- 18,328 green jobs
- 10 Mio € investments in cycling infrastructure creates about 1000 jobs.

- Production of bicycles and e-bicycles, components and equipment
- Cycling business
- Repair service and rental systems
- Cycling tourism
- Sport activities
- Construction of cycling infrastructure
Implementation Masterplan Cycling: Partnership with economy: Cycling - a Win Win for environment and local supply

Joint initiative Ministry of Environment and Chamber of Commerce 2010:
Survey cycling and retail businesses
- 80% car rides for shopping are shorter than 5 kilometres
- 50% of shopping weight less than 5 kilogram
-> high potential to go shopping by bicycle
- Cyclists higher frequency of shopping (148 days p.a.) than car drivers (123 days p.a.)
- Shopping by bicycle for convenience goods
- Shopping amount p.a. through cyclists in some regions and rural areas equal to car users
-> cyclists are regular and financially solvent customers
Implementation Masterplan Cycling: 
Partnership with economy:
Cycling - a Win Win for environment and local supply

Survey cycling and retail businesses
- 2.5 billion Euro retail-trade-relevant purchasing power from cyclists
- 1% more occasional cyclists in Austria will induce 88 million Euro sales increase for local supply
- 1.3 billion euro increase in potential purchasing power for local supply if 15% car rides were shift to bicycle

>> Conclusion:
Promotion of cycling is a proper policy tool to support local supply and local economy
Implementation Masterplan Cycling
Calculating Health Benefits of Cycling
Applying THE PEP HEAT for Cycling

- THE PEP Health Economic Assessment Tool (HEAT) for Cycling (WHO)
- Austria Cofinanced the THE PEP HEAT Cycling
- Translation into Austrian version with Austrian figures and local parameters
- Applying THE PEP HEAT for Cycling in Austria and calculating the health benefits of implementing the Masterplan for Cycling
- Dissemination to cities, stakeholders planers, transport experts
Implementation Masterplan Cycling
Applying THE PEP HEAT for Cycling

- Health Economic Assessment Tool (HEAT) for Cycling
  - THE PEP (WHO/UNECE) toolbox
  - Science-based calculation tool
  - Based on analysis of 44 studies

- Risk of all-cause mortality 28% lower among regular cyclists (age group 20-60 year)

- Risk reduction of
  - all-cause mortality,
  - cardiovascular disease,
  - stroke,
  - colon cancer and breast cancer
  - Type II diabetes
Implementation Masterplan Cycling
Applying THE PEP HEAT for Cycling

- Excel Tool to assess the economic effect of cycling
- Based on reduced all-cause mortality

If x people cycle y distance on most days, what is the value of the improvements in their overall mortality rate?

- HEAT tool for
  - assessment of a city/region (cycling share)
  - assessment of a cycle path (cycling infrastructure)
  - cost-benefit-analysis

- HEAT tool for
  - transport planner
  - traffic engineers
  - health economists
  - policy maker
Implementation Masterplan Cycling
Applying THE PEP HEAT for Cycling
Three simple steps

Step 1: enter your data

- number of cycle trips per day
  - traffic count
  - estimation for a new infrastructure

- mean trip length
  - traffic census
  - default value (2.0 km)
Implementation Masterplan Cycling
Applying THE PEP HEAT for Cycling
Three simple steps

Step 2: check the parameters (default values)
- mean number of days cycled per year
- proportion of ‘round trips’
- proportion of new cyclists
- mortality data working age population
- value of statistical life
- discount rate
- check timeframes for
  - build up of benefits
  - build up for uptake
  - calculation of mean annual benefit
Implementation Masterplan Cycling
Applying THE PEP HEAT for Cycling
Three simple steps

Step 3: read economic savings
- present value of mean annual benefit (Euros per years)
- ‘saved lifes’ per year

HEAT for Cycling available
www.euro.who.int/transport (english version)
www.radfahren.klimaaktiv.at (german version)
Implementation Masterplan Cycling
Applying THE PEP HEAT for Cycling
Three simple steps

Health Economic Assessment Tool for Cycling

Fill in the two fields in Step 1 with your values and read the corresponding results in Step 3. You can use the default parameters supplied in Step 2 or adjust them according to your needs. The population parameters used to calculate the results are displayed at the bottom of the sheet.

### Step 1: enter your data (all users must fill in the red fields)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of trips per day</td>
<td>2,469.96</td>
</tr>
<tr>
<td>Mean trip length (km)</td>
<td>2</td>
</tr>
</tbody>
</table>

### Step 2: check the parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean number of days cycled per year</td>
<td>365</td>
</tr>
<tr>
<td>Proportion of trips that are one part of a return journey (or 'round trip')</td>
<td>1</td>
</tr>
<tr>
<td>Proportion undertaken by people who would not otherwise cycle</td>
<td>0.1</td>
</tr>
<tr>
<td>Mean proportion of working age population who die each year</td>
<td>0.002646</td>
</tr>
<tr>
<td>Value of life (in Euros)</td>
<td>EUR 1,576,127</td>
</tr>
<tr>
<td>Discount rate</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

### Step 3: read the economic savings resulting from reduced mortality

**Maximum annual benefit**: EUR 1,517,500,000

| Savings per km cycled per individual cyclist per year | EUR 0.96 |
| Savings per individual cyclist per year | EUR 1,293 |
| Savings per trip | EUR 1,72 |

**Mean annual benefit**: EUR 1,283,592,000

**Present value of mean annual benefit**: EUR 1,152,000,000

**Population parameters used to calculate results**

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Population that stands to benefit</td>
<td>1,234,980</td>
</tr>
<tr>
<td>Mean proportion of working age population who die each year</td>
<td>0.002646</td>
</tr>
<tr>
<td>Expected deaths in the local population</td>
<td>9267.80</td>
</tr>
<tr>
<td>Protective benefit, according to actual distance traveled</td>
<td>0.25</td>
</tr>
<tr>
<td>Lives saved</td>
<td>524,56</td>
</tr>
</tbody>
</table>

**Notes on how to use this tool**

- For additional instructions, hold the mouse over any red triangle.
- How many trips are observed (or are estimated) on the specific route across a city or on a network, in any direction?
- What is the mean trip length (estimated or measured)?
- The default parameters in green are based on best available evidence and are to be changed only if local data is available.
- The estimated number of days per year that people cycle.
- What proportion of these observed cyclists do you expect will also be making a return trip later in the day?
- Proportion of these cyclists that are new users DIRECTLY as a result of the new infrastructure or policy.
- See local parameters page for explanation.
- What is the standard value of a statistical life used in the country of study?
- Discount rate used for future benefits. This is only used for the present value of mean annual benefits, see step 3.

Total value of lives saved (mortality only) assuming 'steady state' of health benefits achieved

This value takes the likely build up of benefit into account (see below)

Discount rate used for future benefits. This is only used for the present value of mean annual benefits, see step 3.

Based on number of individual cyclists calculated from data in steps 1 and 2.

**This reflects the relative risk of all cause mortality in the age groups that are most likely to cycle.**

Yearly deaths expected among the population of cyclists (assuming they are aged 25-64).

Relative risk of death among cyclists, adjusted for the actual distance cycled (assuming regular trips per year).

Reduction in number of deaths expected due to the modelled increase in cycling.
Implementation Masterplan Cycling
Applying THE PEP HEAT for Cycling
Austrian results

- Austrian national goal 10% cycling share until 2015
- HEAT for Cycling used to calculate the economic effects
- Set of Austrian parameter

Austrian results
- 811 Mio. Euro mean annual benefit
- 824 ‘saved lifes’ per year
- 1.253 Euro annual savings per cyclists

- Strong arguments for the promotion of cycling in particular for investments in cycling infrastructure
Implementation Masterplan Cycling
National program klima:aktiv mobil
Focus on promotion of cycling

- **National Consulting Program klima:aktiv mobil** financed by the Ministry of Environment motivating companies, regions and cities, tourism and leisure to promote cycling

- **National Financial Support Program klima:aktiv mobil** with a focus on cycling improvements and infrastructure financially supporting companies, regions and cities, tourism and leisure actors, transport operators as well as other associations

- **Awareness raising campaign klima:aktiv mobil** to improve image of cycling
**klima:aktiv mobil**
moves target groups towards sustainable transport

- companies and public administrations
- cities, municipalities and regions
- leisure and tourism
- real estate developers, investors in the building sector
- schools and youth
- press/media as opinion makers
- citizens as road users/traffic participants and consumers
klima:aktiv mobil structure

programs for consulting & technical support
- Mobility management for companies / administrations
- Mobility management for schools / youth
- Mobility management for leisure and tourism
- Eco-driving initiative
- Mobility management for municipalities & regions
- Mobility management for real estate developers

Awareness & information campaigns
- Eco-driving, alternative drives & fuels
- Focus on cycling

Financial support programs
- Federal environmental support schemes for companies
- Klima:aktiv mobil support scheme & climate and energy fund

Partnership, awards & certification
- Certification and education
- Competitions, awards

www.klimaaktivmobil.at
1. **klima:aktiv mobil programs**

Mobility Management focus on cycling

- **MM for companies:**
  > promoting biking to business, bike&ride, e-bikes

- **MM for cities and regions:**
  > improving cycling infrastructure, cycling lanes, paths, bridges, interurban “cycling highways”, cycling stands and lockers,
  > traffic calming for reducing car speeds (30km/h)
  > cycling friendly urban planning and street design
  > better intermodality: bike & ride
1. klima:aktiv mobil programs
Mobility Management focus on cycling

MM for tourism, leisure and youth:
> improving access for cyclists to local and regional recreation areas
> regional and urban rent a bike system
> signalisation and GPS navigation
> improving Bike&Rail, Bike&Bus, etc
> promotion of cycling for leisure, cultural and shopping trips

- MM for children, parents and schools: improving physical activity by better access for cycling pupils to school
1. **klima:aktiv mobil programs**
   Mobility Management focus on cycling

- Special Guideline for Promoting Cycling
- Recommendations for cycling planning and infrastructure
- Examples of good practice for cycling
- How to apply financial support programmes
2. **klima:aktiv mobil**

financial support program

>> offering financial support to

cities, municipalities and regions, companies and
transport operators, leisure and tourism, schools youth organizations

>> offering financial support for

investments in cycling, operating and planning costs

for mobility management, cycling infrastructure and logistics, alternative vehicles **NEW electric bikes**, regional and urban automatic rent-a-bike
Special offer 2010: Financial support for E-bicycles

- E-bikes make cycling more attractive for new target groups even for longer distances and in mountainous areas

- **New: financial support rate for E-bicycles by klima:aktiv mobil**
  - for companies, municipalities, touristic associations
  - 400,- Euro support for E-bicycle when using green electricity (100% Renewables)
  - 200,- Euro for normal electricity

- Investments in cycling stimulate economy and green jobs
klima:aktiv mobil Lessons Learned
Promoting Cycling

- Within only 5 years more than 200 klima:aktiv mobil project partners implemented cycling measurements

- Annual CO\textsubscript{2} reduction of more than 60,000 tons due to cycling projects

- Financial support of 16.8 mio. € for measures to improve cycling inducing investments in cycling infrastructure of more than 76 mio. € and creating around 1000 green jobs

- E-Bike boom: 2008 3000 E-Bikes sold, 2009 12,000 E-Bikes, 2010 20-25,000 E-Bikes (forecast)
Styrian cycling programme 2008-2012
Goal: Double the level of cycling

- Extension of the bicycle path network: 71 kilometres planned
- Awareness Raising campaigns
  - „Motivation and information“
  - Cycling activities and events
  - Styrian „Fahrradgipfel“
  - Sompetition „Wer radelt gewinnt“

- A saving of 6.500 tons CO₂/year
klima:aktiv mobil Projectpartners
Examples for Promoting Cycling in Cities
City of Salzburg

- **Development of cycle infrastructure**
  - Mobile bicycle parking facilities for big events (e.g. EM2009)
  - Self-Service stations
  - Parking facilities at the central station and parking facilities to lock (boxes) for the shared common space

- **Marketing activities**

- **Organisational Measurements**
  - Cycling against the one-way-streets
  - Bicycle coding

- **Austria’s bicycle capital**
  - Factor of success: bicycle agent
  - Factor of success: cycling mayor
A-H-SK Pilotprojects
Environmentally Sustainable Transport and Tourism in sensitive Areas –
Lake Neusiedl/Fertő-tó Region (Contribution to THE PEP)

nextbike Burgenland: first automatic regional bicycle lending system
Lending terminals all over the region:
at train stations, ferry ports, points of interest in cities
klima:aktiv mobil Projectpartners
Examples for Promotion of Cycling in Companies
Mondi Business Paper Austria AG

- Bike2business winner 2007 category large scale manufacturer
- Campaign „Fit for the job“
- Company bicycles also for those employees commuting (way to railway station)
- Bicycle repair shop checkrooms
- Special cycling activities for employees
- Involvement in the construction of a 9 kilometre long cycling path
3. klima:aktiv mobil Cycling Campaign
Cycling Stakeholder Summit Series
> bringing together all regional stakeholders
> jointly with the Austrian Federal Provinces, Chamber of Commerce, Cities and Municipalities
> first e-bike race on the highest mountain pass in Austria - the Großglockner (2400m)
4. klima:aktiv mobil
awards and certification

- Project partners awarded by the Federal Minister of Environment
- Awarded by receiving a certification
- Promotion of the partners in the media (Website, booklet, events, …)
Visit the climate stars all over Austria:
868 klima:aktiv mobil partners save 358,000 To CO2 a year

www.maps.klimaaktiv.at
klima:aktiv mobil Strategic Coordination

- **STRATEGIC COORDINATION**
  Austrian Federal Ministry of Agriculture, Forestry, Environment and Water
  Division V/5 – Transport, Mobility, Human Settlements and Noise
  Head of Division: Robert THALER
  Project Co-ordinator: Iris EHRNLEITNER
  Email: robert.thaler@lebensministerium.at
  www.lebensministerium.at

- **CYCLING COORDINATOR**
  Austrian Federal Ministry of Agriculture, Forestry, Environment and Water
  Division V/5 – Transport, Mobility, Human Settlements and Noise
  Martin Eder
  EMAIL: radfahren@lebensministerium.at
  http://radfahren.klimaaktiv.at

- **OPERATIONAL MANAGEMENT**
  Austrian Energy Agency
  Willy Raimund, Andrea Leindl, Christine Zopf-Renner
  Phone: +43 1 586 15 24-0
  EMAIL: klimaaktivmobil@energyagency.at
  WEB: www.klimaaktivmobil.at
Thank you for your kind attention!