PROJECT

EWENT

Extreme Weather impacts on European Networks of Transport

Funding: European (7th RTD Framework Programme)
Duration: Dec 2009 - May 2012
Status: Complete with results
Total project cost: €1,915,794
EU contribution: €1,478,981

Call for proposal: FP7-TPT-2008-RTD-1
CORDIS RCN: 93531

Background & policy context:
The project addressed the EU policies and strategies on climate change, with particular focus on extreme weather impacts on the EU transportation system.

Objectives:
The project goal is to estimate and monetise the disruptive effects of extreme weather events on the operation and performance of the EU transportation system.

EWENT will cover most transport modes (including passenger and freight): road, rail, aviation, waterways and light (pedestrians, cycling). The transport system will be viewed from three angles: infrastructure, operations, and indirect impacts to third parties. The project will evaluate the efficiency, applicability and finance needs for adaptation and mitigation measures which will minimise the costs of extreme weather impacts.

Methodology:
The methodological approach is based on a generic risk management framework that follows a standardised process. It starts with the identification of hazardous extreme weather phenomena, followed by impact assessment and concluded by mitigation and risk control measures.

In detail, the project set out to:

- Identify and define the hazards on EU transportation systems caused by extreme weather phenomena and develop relevant scenarios;
- Estimate the probabilities of harmful scenarios caused by extreme weather;
- Estimate the consequences of extreme weather events based on developed scenarios: first on EU transport infrastructure, then on operations and finally on supply chains and mobility;
- Monetise the harmful consequences per transport mode both on infrastructure and operations (including mobility and supply chain impacts);
- Evaluate measures and options for negative impact reduction, control and monitoring in short and long-term.

The short-term viewpoint was focused on monitoring processes and forecasting and warning/alarm services on weather phenomena. The long-term view provides the starting point for planning and standard setting.

Related Projects:
See the IRWIN project (2010), initiated by ERA-NET ROAD.

**Parent Programmes:**
FP7-TRANSPORT - Transport (Including Aeronautics) - Horizontal activities for implementation of the transport programme (TPT)

**Institute type:** Public institution
**Institute name:** The European Commission
**Funding type:** Public (EU)

**Lead Organisation:**

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<tr>
<th>Teknologian Tutkimuskeskus Vtt</th>
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| **Address:** TEKNIKANTIE 4 A  
02044 VTT ESPOO  
Finland |
| **Organisation Website:** http://www.vtt.fi |
| **EU Contribution:** €489,674 |

**Partner Organisations:**

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<tr>
<th>Organisation Meteorologique Mondiale</th>
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| **Address:** 7 Bis Av. De La Paix  
1211 Geneve  
Switzerland |
| **EU Contribution:** €89,200 |

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<tr>
<th>Via Donau - Entwicklungsgesellschaft Mbh Fuer Telematik Und Donauschifffahrt</th>
</tr>
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| **Address:** Donau-City-Strasse 1  
1220 VIENNA  
Austria |
| **Organisation Website:** http://www.via-donau.org |
| **EU Contribution:** €68,936 |

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<th>European Severe Storms Laboratory E.v.</th>
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| **Address:** Muenchner Str 20  
82234 Wessling  
Germany |
| **EU Contribution:** €75,930 |

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<th>Deutsches Zentrum Fr Luft Und Raumfahrt E.v</th>
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| **Address:** Linder Hhe  
12489 KLN  
Germany |
### Transportokonomisk Institutt

**Address:**
GAUSTADALLEEN 21  
0349 OSLO  
Norway

**Organisation Website:**
http://www.toi.no

**EU Contribution:** €151,600

### Ilmatieteen Laitos

**Address:**
Erik Palmenin aukio 1  
00560 HELSINKI  
Finland

**Organisation Website:**
http://www.fmi.fi

**EU Contribution:** €216,548

### Cyprus Meteorological Service

**Address:**
Nikis Ave 28  
1086 Nicosia  
Cyprus

**EU Contribution:** €78,000

### Foreca Consulting Ltd

**Address:**
Tammasaarenkatu 5  
FI-00180 Helsinki  
Finland

**Organisation Website:**
http://www.forecaconsulting.com

**EU Contribution:** €107,255

### Technologies:

- Unclassified
- Non-technology

### Key Results:

EWENT addressed the policies and strategies related to climate change, with a particular focus on extreme weather impacts on the EU transportation system. The EWENT project estimated and quantified, in monetary terms, the disruptive effect of extreme weather events. Following that, the project assessed the effectiveness of required investments for different mitigation strategies: e.g. new weather information services, new models, new engineering guidelines for infrastructure, etc.

The project results have indicated that the most effective and cost efficient measures against extreme weather risks are continuous cooperation of transport sector actors with national weather services and
environmental authorities with persistent development of specific weather warning services. Education and training of transport managers and transport users is also important. Better monitoring systems and forecasting methods are required. The action plan devised for mitigation and adaptation identified the need to enhance weather information services supply in general. However, for truly extreme events the key to successful mitigation is cooperation. Current cooperation models are not working and are insufficient.

**Innovation aspects**

An innovative suggestion is the Weather Hazard Skill Management Certificate. This certificate is particularly applicable with high benefit/cost ratio and should be made mandatory in Europe for all transport operators and managers. Benefits would be for all transport modes and for all extreme weather events. The EWENT project requests the European Commission to take this idea into consideration.

**Technical Implications**

Further research is particularly needed on transport network’s vulnerability, reliability and resilience. Furthermore, quantitatively verifiable tools should be developed for diagnosing the European network’s state of preparedness to withstand different classes of extreme weather phenomena and their impacts.

**Policy objectives**

Innovating for the future (technology and behaviour):

- Service quality and reliability
- Acting on transport safety: saving thousands of lives

Documents:

[Conference Paper 18th World Congress](#)

**STRIA Roadmaps:** Network and traffic management systems, Infrastructure

**Transport mode:** Multimodal transport

**Transport sectors:** Passenger transport, Freight transport

**Transport policies:** Decarbonisation, Societal/Economic issues, Environmental/Emissions

**Geo-spatial type:** Other