TORINO 2006: Environmental sustainability in the frame of the Olympics

Olympic Forum
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Environmental Resources Management (ERM)
THE OLYMPIC SYSTEM
THE REFERENCE FRAMEWORK

Sport, Culture and Environment

**Agenda XXI** of the Olympic Movement

**“Green Card”** of the Bidding Committee Torino 2006

Required by the IOC within the Candidacy Dossier

**Charter of Intents**

Inspired by the IOC Code of Ethics
Charter of Intents

Official Approval
April 2002

1. Responsibility
2. Non discrimination and freedom
3. Life, health and safety
4. Solidarity
5. Minors
6. Culture
7. Sustainability and environment
8. Integrity and transparency
9. Dissemination
10. Participation
11. Scope
12. Application and control
STAKEHOLDER ENGAGEMENT

Sport, Culture and Environment

Cooperation with **UNEP**
- Memorandum of Understanding
- International Declaration on Cleaner Production
- Communication initiatives

Cooperation with **European Commission, DG Env**
- “Guidelines for the implementation of EMAS in sporting events”
- EU Eco-label for tourist accommodation services
- Communication initiatives
STAKEHOLDER ENGAGEMENT

Sport, Culture and Environment

Cooperation with Environmental NGOs

Environment Advisory Assembly: representatives of environmental NGOs and local authorities involved in the Games organisation.

Main environmental issues analysed and discussed, in order to find the “most sustainable solutions”.

Any legal claims were lodged during the design and construction of the Games infrastructures.
THE TORINO 2006 LEGACY

• The intangible legacy
  ➢ Innovative and systemic approach to the Olympic Games life-cycle
  ➢ Development of cutting-edge and comprehensive environmental tools

• The tangible legacy
  ➢ New infrastructures and restoration interventions aimed at improving the mountain environment and the life quality of the inhabitants
The Intangible Legacy

“An innovative and systemic approach”

- **Strategic Environmental Assessment**
  Required by the Italian Act 285/00 as a tool for assessing the environmental impacts of the Olympic Programme before the implementation

- **Environmental Management System**
  Implementation of ISO 14001 standard and EMAS (Eco-Management and Audit Scheme) European Regulation to guarantee the sustainability of the event

- Development of **Sustainability Projects**
Strategic Environmental Assessment

“overall sustainability” of the Olympic Programme subject to observance of a series of recommendations

Strategic Plans

- Inert Waste from excavations
- Sustainable Mobility
- Safety of workers and local inhabitants
- Water Management
- Prevention of natural risks
- Environment and landscape
- Guidelines for project sustainability of Olympic and Multimedia Villages

Environmental Monitoring Plan
Strategic Environmental Assessment

Projects sustainability in city venues - Olympic Village Torino (i.e.)

Environmental aspects identification
Design phase: spread use of eco-efficient technologies
Construction phase: auditing programme
Strategic Environmental Assessment

Projects sustainability in mountain venues – Biathlon (i.e.)

**Environmental aspects identification**
- **Design phase:** spread use of eco-efficient technologies
- **Construction phase:** auditing programme
Strategic Environmental Assessment

The Water Management Plan

Goals

- guarantee the local inhabitants drinkable water;
- guarantee the snow-making system water;
- rationalize water usage;

Achievements

- realised 9 water reservoirs for the snow-making system, instead of the 20 authorised by the Ministry for the Environment within the SEA process;
- improved waterworks and sewage systems;
Strategic Environmental Assessment

The Water Management Plan

Water Reservoirs data

<table>
<thead>
<tr>
<th>Name</th>
<th>Reservoir capacity (cbm)</th>
<th>Surface area of the expanse of water (Sqm)</th>
<th>Construction Site area (Sqm)</th>
<th>Excavations (cbm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lago_Lake Serra Granet</td>
<td>29.500</td>
<td>8.600</td>
<td>42.000</td>
<td>37.000</td>
</tr>
<tr>
<td>Lago_Lake Sagnalonga</td>
<td>7.250</td>
<td>2.580</td>
<td>8.800</td>
<td>17.165</td>
</tr>
<tr>
<td>Lago_Lake Italsider</td>
<td>31.100</td>
<td>6.462</td>
<td>20.000</td>
<td>19.660</td>
</tr>
<tr>
<td>Lago_Lake Golf</td>
<td>30.000</td>
<td>340</td>
<td>16.000</td>
<td>22.000</td>
</tr>
<tr>
<td>Lago_Lake Anfiteatro</td>
<td>40.000</td>
<td>8.560</td>
<td>25.000</td>
<td>29.370</td>
</tr>
<tr>
<td>Lago_Lake Pattemouche</td>
<td>30.000</td>
<td>7.370</td>
<td>20.000</td>
<td>22.000</td>
</tr>
<tr>
<td>Sportinia</td>
<td>26.600</td>
<td>6.410</td>
<td>11.000</td>
<td>33.000</td>
</tr>
<tr>
<td>Rougies</td>
<td>25.770</td>
<td>6.338</td>
<td>18.000</td>
<td>17.400</td>
</tr>
<tr>
<td>Melezet</td>
<td>13.000</td>
<td>4.700</td>
<td>8.000</td>
<td>32.000</td>
</tr>
</tbody>
</table>
Strategic Environmental Assessment

The Sustainable Mobility Plan

- Nearly 100 natural gas-powered vehicles (TOROC fleet)
  - Piedmont Region funding
  - Budget 3 millions €
  - Post Games: vehicles to Local Authorities

- Hydrogen-powered and natural gas-powered buses (GTT)

- HysyRider (hydrogen-powered scooter) showcase in Games Time
Strategic Environmental Assessment

The Environmental Monitoring Plan

The plan consisted of 16 environmental indicators regarding:
water cycle, air quality, land use, energy consumption, waste production, eco-systems, transport, landscape, urban environment.
Environmental Management System (EMS)

A tool for pursuing the sustainability of the Olympic Programme, coordinating the activities in progress and communicating the performance to the stakeholders

**ISO 14001** certification

**EMAS (Eco-Management and Audit Scheme)** registration
Sustainability Projects
HECTOR (Heritage Climate TORino)

• Climate Change a principal role when it comes to environmental matters.

• The Kyoto Protocol entry into force was ratified on 16\textsuperscript{th} February 2005.

• The future of Winter Sports is strictly dependent on climate conditions
The HECTOR project had two main goals:

- To **raise awareness** on climate change issues. Large scale events like the Olympics are the best platform to raise awareness on global environmental issues.

- **Offset greenhouse gases** produced during the Torino 2006 Olympic Winter Games, through financial investments in reforestation, energy efficiency or renewable energy sources projects.
Sustainability Projects

HECTOR - Emissions evaluation and system boundaries

**ARRIVALS**
- By air
- By rail
- By road

**TRANSPORTS**
- By air
- By rail
- Inland

**DEPARTURES**
- By air
- By rail
- By road

**CONSUMPTION**
- Electricity
- District heating
- Fuel (power)
- Fuel (heating)
- Natural gas

**ACCOMMODATION/FACILITIES**

**WASTE**
- Recyclable multimaterial
- Recyclable paper
- Composting
- RDF
- Residual RDF

**COMPETITIVE VENUES**
- Temporary structures (TS)
- Permanent structures (PS)

**NON COMPETITIVE VENUES**
- Preparation phase (TS)
- Operation phase
- Dismantlement phase (TS)

**Sustainability Projects**
- HECTOR - Emissions evaluation and system boundaries

**Temporary structures (TS)**
- Preparation phase (TS)
- Dismantlement phase (TS)
Sustainability Projects

**HECTOR - Emissions evaluation and data**

**Subjects considered:**
Athletes, coaches and team officials, IOC, National Olympic Committees and Federations, judges and umpires, journalists and media operators, sponsors, TOROC personnel, volunteers. Spectators were excluded from the system boundaries.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Emissions (ton CO₂ eq)</th>
<th>% on total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation to/from Torino - AIR</td>
<td>22.156</td>
<td>21,4</td>
</tr>
<tr>
<td>Transportation to/from Torino – RAIL &amp; ROAD</td>
<td>818</td>
<td>0,8</td>
</tr>
<tr>
<td>Transportation on the Games area</td>
<td>5.692</td>
<td>5,5</td>
</tr>
<tr>
<td>Waste management</td>
<td>475</td>
<td>0,5</td>
</tr>
<tr>
<td>Accommodation</td>
<td>7.200</td>
<td>7,0</td>
</tr>
<tr>
<td>Torch relay</td>
<td>66</td>
<td>0,1</td>
</tr>
<tr>
<td>Olympic cauldron</td>
<td>1.570</td>
<td>1,5</td>
</tr>
<tr>
<td>Venues operations - ELECTRICITY</td>
<td>34.919</td>
<td>33,7</td>
</tr>
<tr>
<td>Venues operations – DIESEL GENERATORS</td>
<td>19.723</td>
<td>19,0</td>
</tr>
<tr>
<td>Venues operations - HEATING</td>
<td>10.897</td>
<td>10,5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>103.516 ton CO₂ eq</strong></td>
<td></td>
</tr>
</tbody>
</table>
Sustainability Projects

HECTOR - Donors’ contributions for offsetting GHG emissions

- The **Regione Piemonte** allocated 5.000.000 € for financing renewable energy and sustainable energy use projects.

- The **United Nations Environment Programme (UNEP)** realised in March 2006 a tree-planting event “Plant for the Planet” all over Kenya.

- The **City of Pinerolo** realised energy efficiency and carbon sequestration projects.

- Other funds collected from **individuals** were used to buy VERs from certified projects in Mexico, Sri Lanka and Eritrea.
Sustainability Projects
HECTOR - Carbon credits available at April 2006

<table>
<thead>
<tr>
<th>Partner</th>
<th>Project</th>
<th>Period of credits production</th>
<th>Carbon credits (ton CO₂ eq)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regione Piemonte</td>
<td>district heating</td>
<td>4 years</td>
<td>8.588</td>
</tr>
<tr>
<td>Regione Piemonte</td>
<td>district heating</td>
<td>4 years</td>
<td>4.680</td>
</tr>
<tr>
<td>Regione Piemonte</td>
<td>cogeneration</td>
<td>until 2012</td>
<td>2.292</td>
</tr>
<tr>
<td>Regione Piemonte</td>
<td>cogeneration</td>
<td>4 years</td>
<td>32.116</td>
</tr>
<tr>
<td>Regione Piemonte</td>
<td>district heating</td>
<td>4 years</td>
<td>20.100</td>
</tr>
<tr>
<td>City of Pinerolo</td>
<td>various</td>
<td>until 2012</td>
<td>896</td>
</tr>
<tr>
<td>UNEP</td>
<td>tree-planting</td>
<td>4 years</td>
<td>905</td>
</tr>
<tr>
<td>Other individuals</td>
<td>various</td>
<td>-</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total carbon credits (ton CO₂ eq) given to HECTOR</strong></td>
<td></td>
<td></td>
<td>69.601</td>
</tr>
</tbody>
</table>

The greenhouse gases emissions balance (generation and offsetting) was certified by an independent Body according to a voluntary scheme based on the main principles of the Kyoto Protocol.

As for April 2006, the offsetting rate was 67.2%. 

Sustainability Projects

Promotion and implementation of the EU Ecolabel for tourist accommodation services

Goals

- to make the Olympic Winter Games a driving force for the diffusion of the EU Ecolabel in the tourist sector

Main results

- TOROC supported about 15 accommodation structures in the EU Ecolabel implementation
- 7 of them have been awarded with the logo (February 2006)
- Implementation of the EU Ecolabel in the Olympic Media Village Università
Sustainability Projects

Sponsor and Sustainability

Goals

- to promote environmental awareness to the Olympic Partners
- to share commitments and actions and promote the results

How

- Sponsors joined the programme on a voluntary basis
- TOROC evaluated the environmental commitments
- TOROC awarded the “sustainable partners” with the logo Ambiente 2006
Sustainability Projects
Sponsor and Sustainability
Logo awards at February 2006
Sustainability Projects

Waste management

Goals

- to minimize waste production (less than 1,600 tonnes)
- to achieve high **recycling** rates:
  - 70% to materials recovery
  - production of RDF (Refuse Derived Fuel)

How

- **Compostable materials** (corn starch) for disposable products in catering activities
- **Separate collection** system
- Official **agreement** with the Italian Authority for Packaging (CONAI)
- **Communication campaign** addressed to spectators and other participants
Sustainability Projects

Waste management

Waste production and separate collection results

<table>
<thead>
<tr>
<th>Material</th>
<th>Quantity (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>118</td>
</tr>
<tr>
<td>Plastic</td>
<td>29</td>
</tr>
<tr>
<td>Organic materials</td>
<td>115</td>
</tr>
<tr>
<td>Glass and Aluminium</td>
<td>10</td>
</tr>
<tr>
<td>Wood</td>
<td>21</td>
</tr>
<tr>
<td>Not recyclable</td>
<td>920</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,212</strong></td>
</tr>
</tbody>
</table>
The Tangible Legacy

“An improved land”

- Water system management
- Territory lay-out
- Forestry works
- Mountain villages restoration
Water system management

Realized *more than*...

- 9 interventions on waste water treatment plants
- 6 interventions on mountain villages’ *waterworks*
- 11 interventions on *sewage systems*

And 9 *water basins* in the mountains both for snow making and civic and agricultural use
Territory lay-out

In the mountains, realized *more than...*

- **12** interventions to *avoid land sliding*,

- **2** interventions to *reduce the risk of avalanches*, and

- **2** land *reclamation drainages*

- **15** securing interventions on *rivers’ channels* to prevent floods
Forestry works and Mountain Villages Restoration

Restored 4 mountain villages, to improve the quality of life and to enhance their fitting into the natural environment.

Realized:

- **about 27 forestry works in the mountains**, to preserve the natural ecosystems alpine identity.

- **3 intervention for natural Olympic Valleys landscape improvement**.
Sustainability Reporting

An annual, non-technical report addressing environmental, social and economic issues entailed by the Olympic event and illustrating initiatives that give concrete form to TOROC commitments stated in the Charter of Intents.

A corporate governance tool aimed at sharing information with stakeholders, facilitating dialogue and therefore improving the sustainability performances of the Committee.