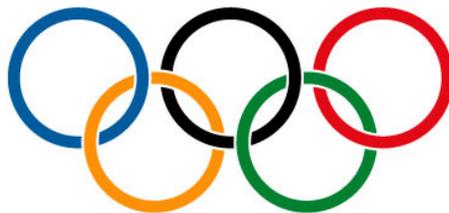


torino 2006

TM





TORINO 2006: Environmental sustainability in the frame of the Olympics

Olympic Forum
Barcelona, 13 November 2007

Paolo Revellino

**Senior Consultant
Environmental Resources Management (ERM)**



The Olympic System

THE OLYMPIC SYSTEM





Reference
Framework

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

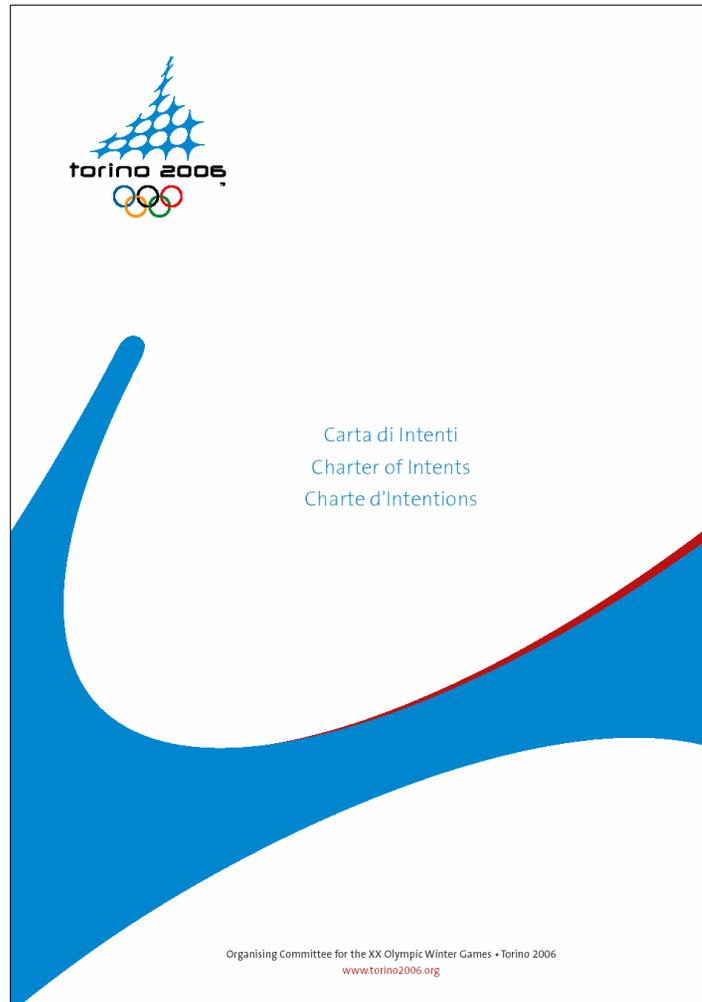
Inspired by the IOC Code of Ethics



Charter of Intents

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



Reference
Framework

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



Reference
Framework

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 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

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**



SEA

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



SEA

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





SEA

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





SEA

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

Tabella 1: Bacini artificiali per l'innervamento programmato

Table 1: Artificial basins for snowmaking systems

Nome	Capacità dell'invaso (mc)	Superficie dello specchio d'acqua (mq)	Area di cantiere (mq)	Sbancamenti (mc)
Name	Reservoir capacity (cbm)	Surface area of the expanse of water (Sqm)	Construction Site area (Sqm)	Excavations (cbm)
Lago_Lake Serra Granet	29.500	8.600	42.000	37.000
Lago_Lake Sagnalonga	7.250	2.580	8.800	17.165
Lago_Lake Italsider	31.100	6.462	20.000	19.660
Lago_Lake Golf	30.000	340	16.000	22.000
Lago_Lake Anfiteatro	40.000	8.560	25.000	29.370
Lago_Lake Pattermouche	30.000	7.370	20.000	22.000
Sportinia	26.600	6.410	11.000	33.000
Rougies	25.770	6.338	18.000	17.400
Melezet	13.000	4.700	8.000	32.000

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**





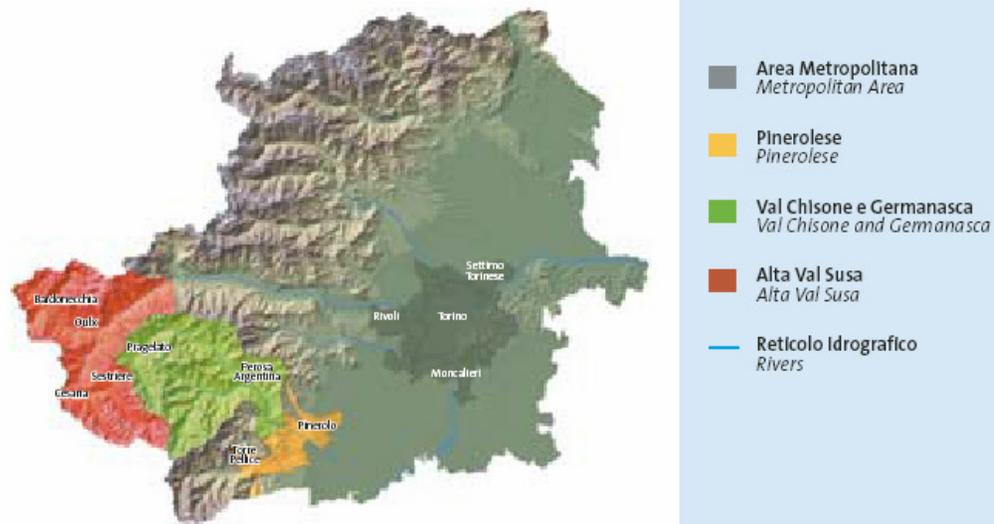
SEA

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.





EMS

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 16th February 2005.
- The future of Winter Sports is strictly dependent on climate conditions





Sustainability Projects

HECTOR - Goals

The HECTOR project had two main goals:

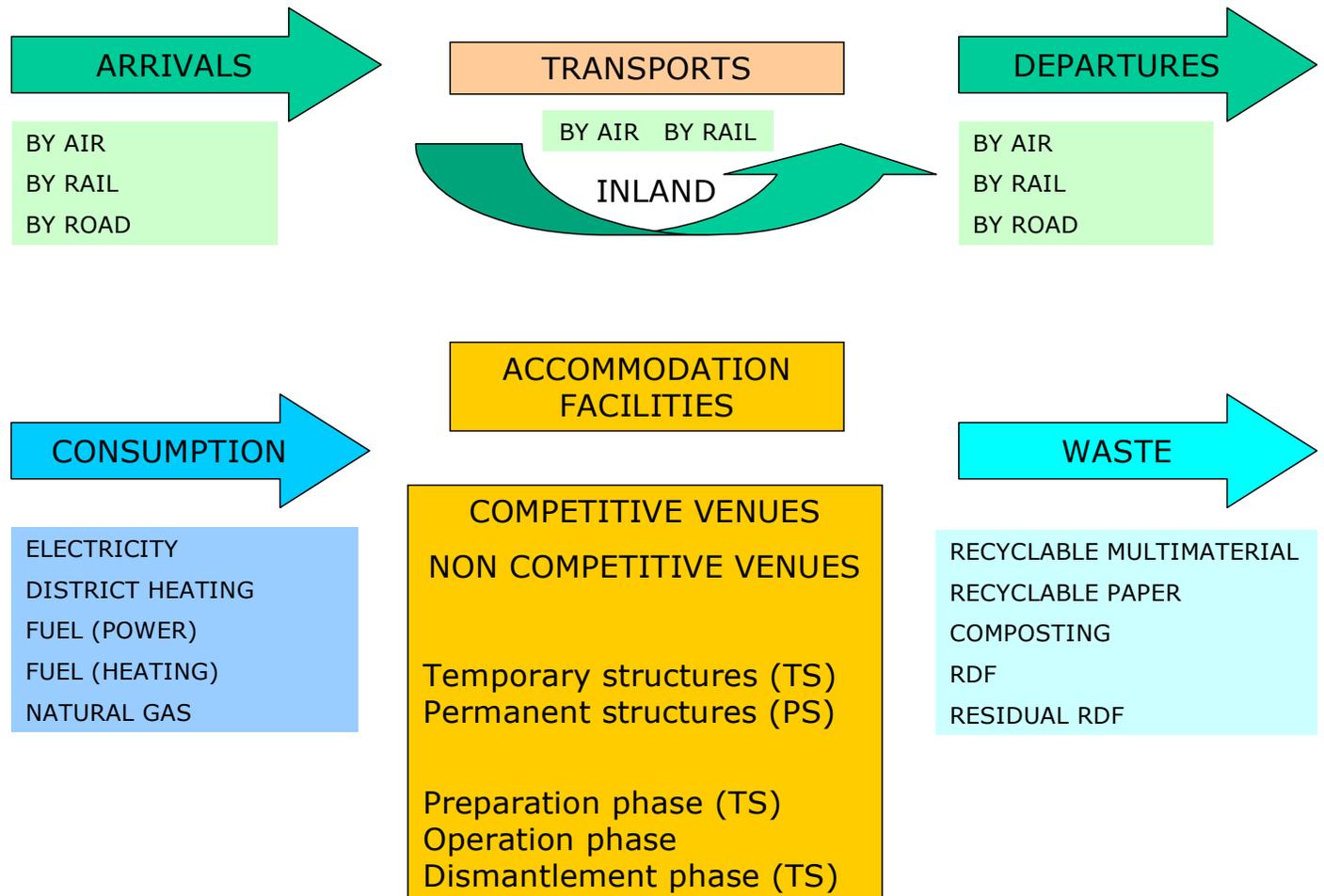
- To **raise awareness** on climate change issues. Large scale events like the Olympics are the best platform to raise awareness on global environmental issues.
- **Offset greenhouse gases** produced during the Torino 2006 Olympic Winter Games, through financial investments in reforestation, energy efficiency or renewable energy sources projects





Sustainability Projects

HECTOR - Emissions evaluation and system boundaries





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.

Activities	Emissions (ton CO ₂ eq)	% on total
Transportation to/from Torino - AIR	22.156	21,4
Transportation to/from Torino - RAIL & ROAD	818	0,8
Transportation on the Games area	5.692	5,5
Waste management	475	0,5
Accommodation	7.200	7,0
Torch relay	66	0,1
Olympic cauldron	1.570	1,5
Venues operations - ELECTRICITY	34.919	33,7
Venues operations - DIESEL GENERATORS	19.723	19,0
Venues operations - HEATING	10.897	10,5
Total	103.516 ton CO₂ eq	



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

Partner	Project	Period of credits production	Carbon credits (ton CO ₂ eq)
Regione Piemonte	district heating	4 years	8.588
Regione Piemonte	district heating	4 years	4.680
Regione Piemonte	cogeneration	until 2012	2.292
Regione Piemonte	cogeneration	4 years	32.116
Regione Piemonte	district heating	4 years	20.100
City of Pinerolo	various	until 2012	896
UNEP	tree-planting	4 years	905
Other individuals	various	-	24
Total carbon credits (ton CO₂ eq) given to HECTOR			69.601

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





Waste
management

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



Waste
management

Sustainability Projects

Waste management

Waste production and separate collection results

Material	Quantity (tons)
Paper	118
Plastic	29
Organic materials	115
Glass and Aluminium	10
Wood	21
Not recycdable	920
TOTAL	1.212



The Tangible
Legacy

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

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**



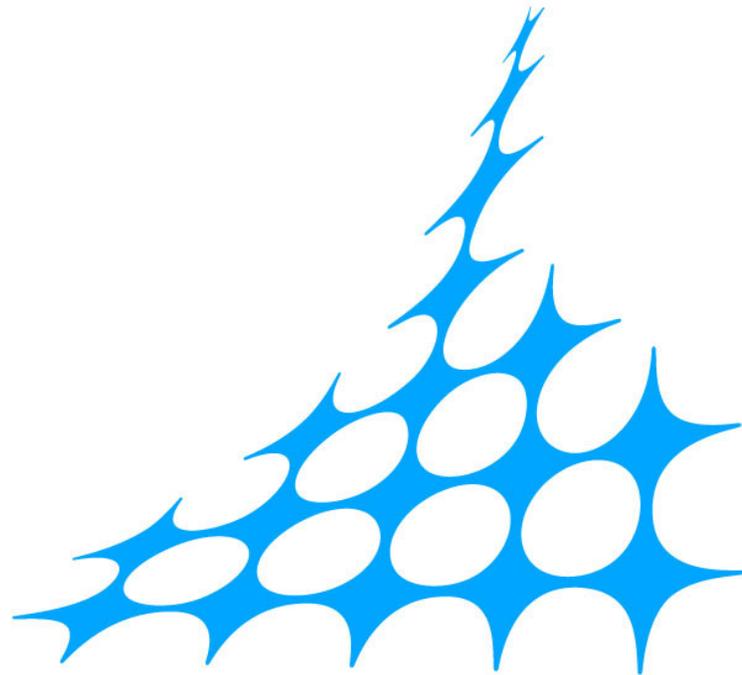
Sustainability
Reporting

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 Intent.

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





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