



International
Road Federation
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The International Road Federation (IRF), founded in 1948, is the only world forum advocating better and safer roads through better road design and construction bearing in mind the user. It is a unique institution that brings together members active in road infrastructure from both the private and public sectors.

The IRF promotes roads that are safe, economically viable and ecologically friendly. The IRF believes that a sound road infrastructure brings prosperity, fights poverty, furthers education and gives better access to health services. IRF promotes sustainable mobility taking into consideration the socio-economic context, the needs of the users and promoting co-modality whenever possible. The IRF is an international not-for-profit organisation with UN consultancy status.

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Action on core environment issues

IRF's 2nd International Conference on Roads and Environment reveals how to make roads greener, cleaner and healthier, and follows through with action recommendations

IRF's Conference in Geneva on 10-11 November, 2008 put four issues in sharp focus: innovative materials to save energy and other resources, inspiring solutions for water management; an integrated approach to noise and air pollution; and greenhouse gas (GHG) emissions monitoring, accounting and offsetting.

Some 140 delegates from 36 countries listened to presentations from 25 acknowledged international experts in their various fields, and discussed the latest insights and innovations in technology, equipment and materials aimed at reducing the impact of road infrastructure on the environment.

MATERIALS

Under the chairmanship of Carl Reller of the New Zealand Transport Authority, delegates heard how life-cycle analysis can lead to sometimes unexpected, but sound, conclusions for the development of one product, or method, over another; how road pavements can become part of a vast heat-exchange system; how the production and application of some asphalt mixes can save precious energy; how pavement binders can be made from sustainable agricultural sources; of the manifold potential of reflective sheeting replacing electric powered road signs and signals; how anti-smog technology can transform roads into air purifiers rather than pollution sources; and, of the requirements of the international standard ISO 14001 on Environmental Management, in developing benchmarks.

WATER MANAGEMENT

Jean Beauverd of Colas Switzerland chaired the session in which it was made plain that water management had not been accorded its rightful place in the environmental pantheon until relatively recently. It was now a leading concern of the World Business Council for Sustainable Development, of the World Meteorological Organisation, of national transport authorities and of academic research. With climate change, unusual storm events are becoming increasingly frequent. Good design has to cope with this, in addition to ameliorating the effects of normal run-off into sensitive receiving environments through better drains, and finer filters and chemical collectors.

NOISE AND AIR POLLUTION

Under the chairmanship of Dr Carl Thodesen of Ecopath, USA, delegates learned that air quality and noise environment evaluation can and should extend to those occupied in servicing road traffic, particularly on motorways; of tyre noise characteristics within the balance of vehicle/tyre performances required for sustainable mobility; of complete environmental traffic management systems; of dynamic speed limits for better local air quality; and, of a combined global agenda linking safety and the environment by promoting road financing and design that takes better account of non-motorised users.



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planning, construction and management does improve the environment.

The many cases presented showed that business is part of the solution. The private sector should be strongly encouraged and recognised for its commitment to the environment. The sector's ecological products and processes should be given due attention and priority when planning construction and its research supported by adequate funds. Support for the adoption of carbon and energy saving technologies is a priority. And so, life-cycle-analysis methodology should be adopted in all material/technology assessments. The IRF's Greenhouse Gas Calculator should be widely used to measure, monitor and thus help control, emissions. Accounting for emissions performance must become part of the bidding process for all projects.

For emissions control, the use of tools to determine the carbon footprint of road infrastructure and traffic must be encouraged. They are vital to reduce those footprints through good design and optimised logistic chains in the transport industry. Emissions saving processes such as warm and cold asphalt must be encouraged. In urban areas, road plans are needed that give special consideration to pedestrians, cyclists and public transport. Such planning will improve air quality and reduce CO₂ emissions.

Water pollution from roads and traffic must always be assessed to enable prevention and mitigation of - and compensation for - harmful effects. Roads themselves need to be made climate-proof and flood risks carefully assessed and addressed when planning new roads or upgrading existing ones.

Asphalt recycling technologies and applications need to be further developed and applied: they have proved to be effective in addressing environmental concerns. Exchange of best practices on application and maintenance of ecologically friendly road signs and markings should be favoured. They reduce energy consumption, water pollution and GHG emissions. Paved surfaces as sources of energy should be further investigated. Tested technology such as asphalt solar collectors should be promoted.

Keep traffic flowing is the mantra for local transport policy in urban areas. Limiting road capacity does not keep it flowing. Intelligent Transport Systems help reduce emissions and are essential for a sound traffic management. They should be installed systematically. Noise pollution needs an integrated approach, taking account of the interaction of pavement, tyre and vehicle. Silent pavements can contribute as much to noise reduction as tyres or vehicle engines.

These conference recommendations are the essential guidelines for the road industry and our future actions at the IRF. We and our members are determined to take them forward and to collaborate in sharing ideas, research, technologies and best practices. ■

• Go to www.irfnet.org to learn more about the conference and to order the conference proceedings

EMISSIONS

For any activity, today, the world's environmental focus tends to be concentrated on emissions. Road building and maintenance is not among the largest direct sources of emissions - unlike the immediate users of its services. Nevertheless, the road industry takes emissions very seriously. Under the chairmanship of Dimitris Mandalozis of the Attica Tollway Operations Authority, Greece, presentations covered the CO₂ modelling of transport, the link between road design and emissions, using the environmental footprint of vehicles for road pricing, and monitoring and accounting of GHG emissions from road infrastructure - the IRF GHG Calculator.

ACTION RECOMMENDATIONS

The Conference stressed the need for sound and realistic policies and measures to address the environmental challenge. In solving the dilemma between economic development and environmental protection price mechanisms alone are unlikely to be politically and socially acceptable, nor sufficient to address the challenge in full. Therefore, cost/benefit analysis should be the basis of any political, regulatory or fiscal measure aimed at protecting the environment. A solid traffic policy is a key starting point; "stop-and-go" traffic conditions produce very high emission levels and "keep the traffic moving" is a key objective of any traffic management system. Limiting road capacity does not improve environmental conditions. Setting guidelines and green rating systems for road infrastructure

**Eva Molnar, Director
Transport Division, UNECE,
gives a keynote address**

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Anticipating new trends, the IRF organised a high level panel discussion on the promising and fast-growing market of carbon trading in the margins of the 2nd. International Roads and Environment Conference hosted in Geneva, Switzerland on 10-11 November, 2008. Now is the time for the road builders to add trading to their armoury of carbon-reducing measures. Carbon trading has moved from the margins to centre stage.

World economic growth may be stalling or going into reverse, but the search for post-Kyoto climate solutions is not slowing. Carbon trading is an undeniable market trend but is not exempt from criticism.

According to the World Bank's Carbon Finance Unit, 374 million tonnes of carbon dioxide equivalent (tCO₂e) were exchanged through projects in 2005, a 240% increase relative to 2004 (110mtonnes CO₂e) which was itself a 41% increase relative to 2003 (78mtonnes CO₂e). In its 2008 survey, the World Bank has estimated the size of the carbon market as US\$11 billion in 2005, \$30 billion in 2006, and \$64 billion in 2007.

Looking at this huge growth, and taking into account the current factors behind the global financial crisis (among them a reluctance of commercial banks to lend, particularly to each other) the panel discussed the validity of these new financial instruments and the risks inherent in a volatile market.

Certainly, there is now unpredictability in pricing, but experts foresee that this will diminish in the longer term as the price increases from €20 (\$26) in 2009 to a probable €37 (\$48.5) per tonne by 2012. Much will depend on the supply, where governments will continue to exert great influence and must therefore show great constraint and leadership.

Such statements inevitably lead to a questioning of the influence of governments and a hidden motivation behind cap and trade and allowing the market to find its own level in dealing with it. The audience was not convinced that emissions certificates are not just a concealed tax which ends up by being just another source of revenue to governments, with no necessary link to environmental efficiency.

Currently, the price of one tonne of carbon varies greatly according to where the offset

takes place. A price range of \$2-200 was mentioned. This led to a discussion on the "right" price for carbon.

According to the experts, the price depends on the following criteria: the place of trading, the kind of credit traded (VER or CER), the nature of the projects which various organisations are sponsoring and the quality, recognisability and verifiability of those projects. However, the question of what is the "best" investment remained. It was highly recommended to discuss this in detail with commodity traders.

Ultimately, as the market becomes more mature, the "right" price for carbon will become the price at which real change is driven. That is, the price at which large numbers of economic actors see a viable choice between buying "cheap" credits or making direct investments, themselves, in greener technology or methods - the abatement cost. One panelist's estimate of an average current price based on abatement cost was €45 per tonne.

What should IRF members do, now? They should know their own abatement cost; they should think about buying/selling their carbon emissions, depending on that cost; they should keep watching the market and engage with the market players; they should be more, rather than less, ambitious in their targets and be proactive. Above all, they should be prepared for changing legislation.

IRF was pleased to welcome for this panel discussion the following experts: H.E. Abdullah A. Al-Mogbel, Deputy Minister of Transport for Roads, Kingdom of Saudi Arabia; Patrick Birley, Chief Executive- European Climate Exchange (ECX); Michael Brennwald, Director First Climate; Henry Derwent, President & CEO - International Emissions Trading Association (IETA); René Estermann, Director General - Myclimate.org; Ben Lashkari, Director Environmental and Commodity Markets - Swiss Re, and Axel Pierron, Senior Vice President - Celent.

They provided valuable insights on the risks and opportunities of this fast growing financial market and explained how to shape short and long-term investment strategies despite constant changes in the legislative framework. ■

Carbon trading moves from margins to centre stage





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The 2008 trophies

IRF honours outstanding 2008 achievements at its annual awards banquet

The IRF presented 12 Global Road Achievement Awards (GRAA), the 2008 Student Essay Competition winner, and three Lifetime Distinguished Service Awards at its Annual Awards Banquet at The Mayflower Hotel, Washington DC on 12 January.

Patrick Sankey, CEO and Director General, IRF-Washington, welcomed guests to the event and introduced IRF-Washington chairman Brian Harris as the presenter.

"As engineers and road builders, I don't think we're so good at self-promotion," said Harris. "But, as you can see from these awards, we have a lot to be proud of as a road building community. In these tough economic times it is easy to be fearful; nevertheless our industry continues to provide innovation and solutions."

GRAA PRESENTATIONS

Founded in 2000, this programme recognises the exemplary projects and organisations that place the road industry at the forefront of social and economic development. An independent panel of judges from around the world with expertise in the roadway development industry selected the winners for this year's competition.

IRF presented crystal trophies to the 12 award winners after a video presentation of the winning project.

Clark Martin, of the Federal Highway Administration (FHWA) Office of Professional and Corporate Development, praised the event and the presentations.

"The video presentations of the winning projects were outstanding. This was a great programme," he said.

The winners of the 2008 GRAA Competition are:

Category: Advocacy & Lobbying
ARTBA for its project National Work Zone Safety Information Clearinghouse

Category: Construction Methodology
Utah DOT for its project I-215/4500 South Structure Project

Category: Design
The Louis Berger Group/J.A. Brennan Associates for their project, Ohmi-Ohdori Bridge

Category: Environmental Mitigation
Attica Tollway Operations Authority for its project Attica Tollway (Attiki Odos)

Category: Innovative Finance
Brun-Way Highways Operations and New Brunswick Highway Corporation for their project Trans-Canada Highway Project

Category: Maintenance Management
New Zealand Transport Agency for its project Alpine Highway Challenge

Category: Programme Management
Parsons for its project Louisville Southern Indiana Ohio River Project

Category: Quality Management
Resource International for its project Various Projects in Ohio

Category: Research
Nippo Corporation for its project Development of Solar Heat Blocking Pavement

Category: Safety
Telegra for its project Powering Safety for Roadways

Category: Technology, Equipment & Manufacturing

CECA Arkema for its project CECABASE RT: Additives for Warm Mix Asphalts

Category: Traffic Management and Intelligent Transportation Systems
Ministry of Transport, Kingdom of Saudi Arabia for its project Intelligent Transport System Master Plan

STUDENT ESSAY COMPETITION

In 2008, IRF launched its Student Essay Competition. Essays were submitted from students at nearly two dozen universities on the theme of Road Safety. Allison Daniello, a junior mechanical engineering student at Virginia Tech University was the winner.

Daniello completed her essay, 'Motorcycle Guardrail Crashes: How Can the Risk of Severe Injury and Fatality be Reduced?' under the supervision of Dr. Clay Gabler.

Mike Dreznes, vice president, Barrier Systems, presented Daniello with her first place prize of \$3,000, and Dr. Gabler was also rewarded.

"I am constantly amazed and impressed by the enthusiasm, creativity, inventiveness, and discipline of these young professionals," said Dreznes. "It gives me great hope for the future."

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OVER 200 ROAD PROFESSIONALS AND GOVERNMENT OFFICIALS GATHERED FOR THIS ANNUAL EVENT TO CELEBRATE THE ACCOMPLISHMENTS AND SUCCESSES OF THE ROAD INDUSTRY. ”

LIFETIME ACHIEVEMENT

This year, IRF honoured Marion C. Dietrich, John O. Gehrett, and Dana E. Low for their lifetime of service and dedication to the road industry.

"These three men have gone above and beyond in their service, have shown a sustained commitment to IRF's core values, demonstrated leadership and sacrifice for the betterment of the global road community, and have given their time, energy, and money to support IRF's mission," said Harris.

Unfortunately, Mr Dietrich passed away on 30 October, 2008 and Mr Low was unable to attend the Awards Banquet.

Mr Gehrett was present and received a standing ovation from the audience. Mr Gehrett thanked IRF for the honour and recalled fond memories of IRF.

"I've had many wonderful opportunities in the IRF family to meet great people from all over the world and form lasting friendships. This is a wonderful organisation. In my life I have had two families. My first, and most important, is the one with my wife, kids, and grandkids. My second has been IRF, with my dear friends Marion and Dana."

As the ceremonies came to a close, HE, Deputy Minister Abdullah A. Al-Mogbel, thanked IRF on behalf of all the award winners.

"This programme is of the first importance. It promotes the many great benefits we provide to economies and communities around the world," he said.

Harris closed the ceremony by encouraging all in attendance to submit their outstanding projects for the 2009 IRF GRAA Competition.