



More attention needed on the consequences of climate change

The UN Copenhagen conference on climate change has come and gone but the call for action in the engineering community is no less urgent and important in a post-Copenhagen 2010. EFCA's president believes there should be more attention on the technical problems and practical solutions of the climate changes now upon us and more awareness amongst decision-makers.

"As opinion leaders in our countries we need to seize the moment and make international decision-makers more aware of the consequences of climate change," says Mr Panos Panagopoulos, President of EFCA, in a call to his counterparts in non-European professional associations. "If we don't do this, the results could be catastrophic."

The problem is greenhouse gas emissions causing a rise in the earth's temperature. The ice is melting at the poles at alarming rates, and sea levels are steadily rising. "We are witnessing more heat waves and a greater intensity in rainfall all around the globe. If we don't take decisive action now to reduce the emissions", says Mr Panagopoulos, "the average surface temperature is likely to rise further in the 21st century causing the collapse, for example, of all estuarine ecosystems. The consequences would be serious for food security, the availability of water, and people's good health, especially in developing countries."

The European proposal

Fortunately, Europe had already committed itself to a 20% reduction (on 1990 levels) in its own emissions by 2020 even without an international agreement. It had also agreed to a 20% reduction in energy consumption by improving efficiency; to a 20% share of renewable energy in energy production (from around 9% today); and a 10% share of renewable fuels in transport.

The developed world has a responsibility to reduce its output of emissions (to below the 1990 levels) and to create and promote solutions. The developing world, much of it with fast-growing populations and economic development, but not having been able to enjoy an era of unhindered growth should, however, agree to limit the growth of their emissions by 15-30%. To do this, the amount of investment needed by 2020 could be €22-50 billion according to the European Commission. The European proposal to curb emissions and place direct investment alongside a global emissions trading scheme would be a balanced and equitable approach for the investments required.

Only with joint efforts

"Sufficient change can only be achieved by a joint effort of the world community," says Mr Panagopoulos. "There has been significant development in environmental technologies in the last decade but recently progress has shifted into high gear. Our industry offers innovative solutions to contribute to a sustainable future through a low-carbon economy, energy efficiency, renewable energy sources and responsible management of natural resources."

"Engineering consultants can respond to the changing needs of people brought about by climate change and migration," says Mr Panagopoulos, "by providing access to sanitation and drinking water, energy-efficient buildings, sustainable cities and greening transportation. We consider it our mission to contribute to a sustainable and energy-efficient development in the world."

NEWS IN BRIEF

Decision-makers are not going to be let off lightly for not agreeing more far-reaching and visionary changes in the world's legislative and financial environments. Consulting engineers, and especially the younger in the profession, are declaring the knowledge, the tools, and the opportunities already exist to build a sustainable future. The UN climate change conference in Copenhagen motivated EFCA members to voice their concerns.

➤ Young engineers with a mission to save biodiversity

Young engineers from the Netherlands are calling on governments to work together with scientific and business communities to preserve biodiversity. Governments, they say, should integrate biodiversity into their sustainability policy and set frameworks for business. Biodiversity is one essential aspect missing from the whole sustainability debate yet fundamental to ensuring the wide variety of products and services on which we depend. "We see it as our mission," they say, "to make that necessary link between science, policy and practice. And the first step is to put it on the political agenda."

[2010 is the International Year of Biodiversity].

➤ ... and create solutions for dry deltas

International decision-makers and politicians should also be aware of the real problem of dryness in a growing number of European deltas, according to the young engineers.

Planning, law, investment and social networking for sustainable cities

Policies are needed to ensure sufficient water supplies. "Even if climate change can result in periods of the year where there may be heavier rainfall, policy can no longer be based purely on channeling away excess water," they say. "More recently, southern European countries, but also Ireland and the Netherlands, have had to learn to cope with water shortages." New, creative, and multi-functional solutions are needed for large-scale water storage and the young engineers say they are standing by with the solutions. See www.nlingenieurs.nl

➤ Innovative political leaders needed

"We already have the tools to reduce society's carbon footprint," says the Danish Federation of Consulting Engineers, "we now need political leaders to set ambitious goals and acknowledge the need to rethink the processes of our society." To fight climate change, the Federation estimates global emissions of greenhouse gases should be reduced to 20 Gton by 2050 by combining carbon reducing efforts in related sectors – energy supply, transport, buildings, construction, agriculture, forestry, production and waste disposal. See www.frinet.dk

➤ Transparency, comparability and energy efficiency

The sustainability of buildings has received significant attention recently with the further development of European standards and harmonised evaluation systems. The European Committee for Standardisation (CEN) is creating a voluntary, integrated way to present environmental information relating to the construction of buildings – including embodied data and covering the total life-cycle of buildings. The SB Alliance, an international mix of certification and standardisation organisations from Europe, Brazil and the US, is working towards bringing diverse assessment systems together and to share and promote them within a common framework. It will be possible not only to evaluate but also to compare different projects and, for example, their use of energy, climate impact, land-use, water and waste management, enabling the possibility of market rewards for the most sustainable. See www.cen.eu and www.sballiance.org

Strategic systems thinking and a multi-disciplinary approach are essential to the way today's Swedish architects, urban planners and engineers work. So say the young professionals from the Swedish engineering association Svensk Teknik och Design (STD*) excited by the vision of a sustainable future that could have politicians, urban planners, investors and social networkers working together.

By 2050 we could have more than 9 billion people on the planet – most of whom will live in urban areas. If we cannot handle the stress that urbanisation puts on the environment, the additional forces of a changing climate will mean disaster for hundreds of millions of people, wherever they live, but particularly for the one sixth living in informal settlements.

However, it seems we may already have many of the answers to an improved world situation. "With our knowledge in urban planning and sustainable design we have the tools to solve many of these problems," say members of STD. They, too, are calling on decision-makers and politicians to create conditions and a framework and declare that solutions should be applied in four areas: planning, investment, legislation and behaviour.

"By accepting this package of suggestions you, the decision-makers, would give us, the engineers and architects, the working conditions we need to solve some of the great problems we're facing today."

Planning

To make better use of resources, planning approaches should be multi-disciplinary and integrated: green areas should be integrated with water structures, technical systems with biological, there should be mixed-use urban functions. Strategies and solutions should be on a city scale with pedestrians, cyclists and public transport prioritised over cars.

"Between 1990 and 2006 Swedish carbon emissions fell by 9% while GDP grew by 44% – decoupling economic growth from carbon emissions is possible."

Sweden has concrete examples of progressive large-scale urban developments such as those in Malmo and Stockholm. Swedish consultants are now bringing their experience to international urban planning projects such as Caofeidian International Eco-City in China.

Investment

Investment is needed to encourage a move away from high energy and resource use and

towards their optimisation and the production of renewable energy – but it must be accompanied by a market framework designed for the long-term and based on lifecycle costs. With appropriate legislation and planning the market economy can catch the opportunities.

"It doesn't have to cost more to live sustainably. In the long run the new ecologically sound economy will be just as profitable as the old fossil one."

Legislation

Many clients of the engineering community are not willing to pay premiums for sustainable solutions. Alongside economic incentives, the law should be used innovatively to help create a sustainable built environment. It should insist on a zero energy demand for heating in new buildings, a gradually reduced energy demand for existing buildings, and the gradual mandatory use of renewable energies. EU energy certificates are an encouraging first step and eventually will help obtain rewards for developers and contractors aiming for truly sustainable projects. The next step should see a move from a voluntary to a legal basis.

"New buildings should be designed and built to produce, not consume, energy."

Behaviour

Citizen participation is a powerful tool in driving positive change. Inhabitants should be listened to and their ideas used. The linear industrial thinking of "cradle-to-grave" [where a product begins life as a raw material and ends as waste], should be replaced by cyclical thinking of "cradle-to-cradle" [where a product ending its life becomes the start of something new].

There exists a broad and deep competence in creating sustainable urban areas but this now needs to be shared as widely as possible – through established links, or possibly through the dynamic world of social networking. Young people especially already have well-developed networks of friends, family and colleagues across the globe that could be used to good effect.

"Citizens need to understand their part in the making of sustainable cities."

Given the right legal, financial and policy conditions to work in, the Swedish consultants see themselves as an important part of creating sustainable urban areas and fighting climate change in the future.

These topics were presented for debate at two recent events organised by EFCA, with a view to share best practice on procurement in the area of development assistance.

*See: www.std.se

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EFCA has member associations in 26 countries, and is the sole European federation lobbying on behalf of engineering consultancy and related services, a sector that employs around one million staff in Europe. EFCA contributes with a strong and cohesive input to legislative actions of its national associations on issues affecting market conditions. Furthermore, the organisation works as a Europe-wide platform for national associations and their member firms to gather relevant facts and discuss issues with their counterparts.