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.”
Planning, law, investment and social networking for sustainable cities

**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 force 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*