

Report outlines vision for greener industrial system

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(PhysOrg.com) -- Industrialists, academics and government should join forces to drive a new industrial revolution which would help tackle climate change, says a new report.

The authors of *Towards a Sustainable Industrial System* are calling for an industrial equivalent of the human genome project in order to help business address the threat of global warming.

Some of the world's leading manufacturing experts, including Cranfield University's Professor Steve Evans, have combined to produce the report published by the University of Cambridge Institute for Manufacturing (IfM).

The ambitious venture aims to understand how essential elements of industrial systems - resources, processes and organisation - could be integrated to reduce environmental impacts while maintaining acceptable standards of living without damaging the planet.

A global co-operative research effort would provide an opportunity to pool expertise in industrial design, production research and regulation.

The project would help speed change through the rapid sharing and application of environmentally-sound manufacturing practices as well the systematic development of new green technologies and approaches.

The report, to be launched today, is designed to highlight the benefits

and opportunities which can flow from a more integrated approach to industrial sustainability.

It recommends a radical integrated approach to the analysis and design of industrial systems, many of which have grown in piecemeal fashion with little regard for overall impact.

Significant work has taken place targeting elements of the system, such as the use of raw materials, adopting frugal production processes and paying close attention to reuse and recycling.

But these can be dramatically enhanced if applied in the context of a broader view of the industrial system.

Following in the footsteps of the original human genome project, the project will take an 'open source' approach, enabling rapid dissemination of findings.

Initial areas of focus for the programme will include:

- the development of a handbook of examples of global best practice
- support for short intensive programmes to enable companies to make immediate 10% environmental improvements
- support re-education of existing workforce to swiftly implement changes
- facilitate rapid adoption of industrial sustainability principles in workplaces, schools and universities.

The report's authors are Professor Steve Evans of Cranfield University, Professor Mike Gregory of the IfM, Professor Chris Ryan of the University of Melbourne and Professor Margareta Norell Bergendahl of the King's Technical School, Sweden.

Lead author Professor Evans described the importance of the report: “Groups like the Intergovernmental Panel on [Climate Change](#) have identified the environmental problems caused by industrial activity, but they lack the expertise and knowledge of industry.

“For years industrial academics have focused on efficiencies and technologies to speed production and save cash, now there’s an opportunity to focus these efforts on solving the greatest issues of our time.

“The opportunity and responsibility to effect change rests with those of us who work within the industrial system and that includes industrialists, policy makers and academics.

“Companies like Toyota, Philips, Xerox have led the way, making huge strides towards sustainability, now we in academia need to join forces to speed the change.

"There are major opportunities for companies that learn to do more with less. Not only will it add more to the firm’s bottom line, but by learning these new ‘green’ skills it makes them more adaptable in the future.”

He said the vision for the new industrial revolution was to create a system which delivers commercial success but uses a quarter of the current resources.

The paper will officially be launched on September 23rd ahead of the Institute for Manufacturing's 14th annual Centre for International Manufacturing Symposium.

Provided by Cranfield University

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