

Novacem Chairman Stuart Evans is attending the World Economic Forum in Davos 24-29 January 2012 as a Technology Pioneer. He can be reached at:
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Novacem, the carbon negative cement company, is developing a new cement manufactured from magnesium silicates. We offer the cement industry a scalable alternative to the current carbon-intensive production of Portland cement. Novacem was selected as a Technology Pioneer for 2011 by the World Economic Forum, and also featured on MIT Technology Review's list of the world's ten most important emerging technologies for 2010. The company is a spin-out from Imperial College London.

Cement's carbon problem

Cement is a vital strategic commodity with current annual production of 2.9 billion tonnes set to increase to 5 billion tonnes by 2030. However, it is already responsible for approximately 5% of man-made CO₂; production of one tonne of Portland cement (the industry standard) typically emits 800 kg of CO₂. Emissions are driven by processing limestone (a carbonate – so with carbon as a principle component), other raw materials, and the use of fossil fuel energy.

In the shift to a low carbon world the cement industry has to reduce emissions or else pay a high price. The world's leading cement companies already form the Cement Sustainability Initiative, which has produced a Technology Roadmap to 2050. This report confirms that existing Portland cement is a mature technology with limited potential to reduce emissions further, and highlights Novacem as a new technology to watch.

Our carbon negative cement

Novacem cement is based on magnesium oxide manufactured from magnesium silicates, with worldwide reserves estimated at more than 20 trillion tonnes. No carbon emissions are released from our raw material; we leave limestone and its stored carbon in the ground. Additionally, low carbon fuel such as biomass can be used in the production process, which also includes the creation of magnesium carbonates that absorb CO₂. For every tonne of Portland cement substituted by Novacem cement, CO₂ emissions will be reduced by up to 850kg.

We already operate a first laboratory pilot plant and are working towards the development and construction of larger scale pilot plants. The first commercial scale plants will follow from around 2017/18. We aim to offer cost and performance parity with Portland cement.

Novacem is following a global strategy, reflecting the nature of the cement market where growth is concentrated on BRIC and other emerging markets. Our business model is to license the manufacture and use of our carbon negative cement.

Our partners

Novacem continually seeks to expand our relationships with relevant companies and organisations across the cement value chain.

We are currently leading a £1m Technology Strategy Board (TSB) project with partners Laing O'Rourke (the largest private UK construction firm) and BRE (the Building Research Establishment). The project aims to expand Novacem's performance testing programme by

utilising Laing O'Rourke's expertise in concrete manufacture and BRE's world-class independent cement and concrete testing capability.

Additionally, we previously led an earlier £1.5Mn TSB project with partners including Rio Tinto (a global mining company) and Laing O'Rourke, alongside Imperial College. We have also had financial support from Lafarge, the world leader in building materials, and additional grants from the Climate-KIC (EU) and Carbon Trust (UK).

Our team

We have assembled a world-class team of entrepreneurs, scientists, engineers and advisers to drive our development. Our Board and Management include:

- **Stuart Evans** – *Executive Chairman & co-founder*. A technology entrepreneur since 1984, he was founding CEO at Plastic Logic and Cotag International. Early career at IBM and McKinsey & Co, following a Harvard MBA. He is a Chartered Director of the Institute of Directors and has twice been a Technology Pioneer at the World Economic Forum.
- **Dr Nikolaos Vlasopoulos** – *Chief Scientist, co-founder & Director*. PhD and MSc from Imperial College, following MEng at Democritus University of Thrace in Greece. Received Technology Venture Fellowship at Imperial College Business School in 2007.
- **Dr Alan Keasey** – *Non-Executive Director*. Previously Chairman of Titan Methanol (a BP joint venture) and held senior research and operational roles in BP Chemicals and Biofuels Corporation. PhD from Sheffield University.
- **Jon Page** – *Non-Executive Director*. Director of New Ventures at Imperial Innovations where he has been involved with over thirty start-ups. Previously worked at PricewaterhouseCoopers and NatWest. MBA from London Business School.
- **Dr Andrew Mackintosh** – *Non-Executive Director*. CEO of the Royal Society Enterprise Fund. 20 years at Oxford Instruments, where he became group CEO. He was then CEO of a biotechnology instrumentation start-up. PhD from Cambridge.
- **Dr John Prendergast** – *Strategy & Planning Manager*. Previously a management consultant at McKinsey & Co. A Gates Scholar at Cambridge, with a PhD in Structural Engineering.
- **Prof Chris Cheeseman** – *Senior Scientific Advisor & Co-founder*. Senior academic at Imperial College. Chris was Nikolaos' PhD supervisor, during which the Novacem technology was invented. DPhil from Oxford.
- **Dr Graham Butler** – *Senior Technology Advisor*. Previously held technology and strategy leadership roles in BP with a track record of creating value from new technologies. DPhil from University of Sussex.

Our investors and investment status

Novacem's initial funding came from the Royal Society Enterprise Fund, Imperial Innovations and SME Wholesale Finance (previously, the London Technology Fund). In 2010 Lafarge and Laing O'Rourke joined the investor group. Total investment to date has been supplemented by funding from industrial partners and EU/UK grants.

The company is now planning its next round of investment. We plan to broaden our investor group with international financial and corporate investors/collaborators.

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