



# Validation of a **LOW CARBON** mobility pathway through collaboration, **systems thinking** and **co-innovation** - SA project

**THE INTERNATIONAL TRANSPORT INDUSTRY ACCOUNTS** for 13% of the world's carbon emissions and is one of the fastest growing energy-demand sectors, responsible for up to 60% of oil consumption in high-income countries (OECD).

According to the 2010 Carbon Disclosure Report, the global transportation industry could have a major long-term impact on climate change and world energy usage if strategic investments are not made.

"Transportation (mobility) is an essential part of society, but transport needs to become more efficient, more equitable and less disruptive – both environmentally and socially. Low carbon mobility holds tremendous opportunities for companies and entire supply chains, which turns sustainability into strategy." World Business Council for Sustainable Development (WBCSD)

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## LOCAL SUSTAINABILITY INITIATIVES ARE MAKING A DIFFERENCE

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IMPERIAL Logistics Refrigerated Services has embarked on a low carbon mobility proof of concept project (Katerva) that could lead to transformational innovation and sustainability solutions, for the local and global transportation industry. This project will be enrolled into the Katerva – Global Innovation and Sustainability Challenge.

The Katerva Challenge aims to enable sustainability breakthroughs, partnerships and innovations to reduce greenhouse gas emissions, for the betterment of the earth and mankind.

In recognition of sustainability excellence, the Global Challenge Institute has created various awards for the best sustainability efforts on the planet.

*The 2011 Katerva Challenge Sustainability Awards will recognise achievements in 10 areas, namely:*

- Behavioural change
- Poverty reduction
- Gender equality
- Economy
- Agriculture
- Forests
- Energy and power
- Construction
- Transportation
- Material

IMPERIAL Logistics Refrigerated Services' Katerva project is focused on the transportation area of sustainability.

Projects are assessed according to the WBCSD Vision 2050 report

([www.wbcd.org](http://www.wbcd.org)). The Challenge is being overseen by an advisory panel, with entries to be judged by a group of world-renowned experts and scientists.

“Today we have more knowledge, education and problem-solving power within our grasp than ever before. We’re excited to bring bright minds together around a single purpose each year for the betterment of mankind,” says the Chief Executive Officer and Founder of the Katerva Challenge, Terry Waghorn.

The winners of the Katerva Challenge will be announced at the next United Nations COP event in Durban, South Africa, in November 2011.

Details of the challenge can be found on [www.katerva.org](http://www.katerva.org).

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## THE TRUE BUSINESS CHALLENGE

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“Green initiatives should clear three hurdles. They must be financially, environmentally and socially acceptable. IMPERIAL Logistics has implemented various best practice processes and systems. To date, we have delivered results that enable reduction in CO<sub>2</sub> emissions, while unlocking significant cost savings,” comments Marius Swanepoel - Chief Executive Officer, IMPERIAL Logistics, a division of IMPERIAL Group (Pty) Ltd.

“For us, sustainability is an important part of being a responsible corporate citizen. We continuously implement award-winning initiatives that reduce both our customers’ and our own (i.e. supply chain) carbon footprint,” comments Attie Lubbe, the General Manager of IMPERIAL Logistics Refrigerated Services.

“Our team believes that there is substantial scope for productivity improvement, as well as sustainable energy and emissions reduction throughout fleet logistics operations. This low carbon mobility proof of concept project (Katerva) will provide a platform for the Katerva team to validate a unique low carbon mobility pathway in the road freight industry,” says Raldu Nel, Managing Director of Blank Canvas International and Associates, who is the overall programme manager for the project.

“This will specifically inform the adoption of current technologies (e.g. GreenFleet and GreenServ) as well as innovation and sustainability transformation models/toolsets, which are locally relevant, but globally scalable; whilst working in open collaboration with IMPERIAL Logistics Refrigerated Services.”

“The principle of high data cost vs. low data value has been selected as the basis of the project. This aspect has been identified as having great potential for decarbonisation projects across road freight operations, and is a sufficiently complex problem to enable thorough interrogation of fleet operations, methods and practice. There is currently insufficient operational visibility (i.e. performance visualisation dashboards) to validate and prove any emission reduction projects. The business challenge is to prove that a low data cost, high data value technology solution can be implemented with sustainable results”, says Mark Lilje, Managing Director of Energy & Combustion Services Technology Solutions Development.

Greenfleet technology, a unique fleet management solution designed to improve fuel efficiency, reduce emissions and track logistics is being

used. This technology delivers operational and performance information to the user. Operational information enables assessment of the current state of the fleet and the ability to gain control over operations via real time monitoring and tracking. Data gathered can be used to baseline and compare operations over time. The real value of the Greenfleet solution is that it provides conclusive proof of potential fuel, carbon or cost savings (business improvement, innovation and sustainability) achieved after precise baselining.

### Major focus areas for the Katerva project will include:

- Route optimisation
- Reduced emissions
- Reduced fuel consumption
- Optimize refrigeration
- Regular vehicle maintenance and calibration
- Optimum utilisation of trucks

“Joining forces to compete in this challenge is going to be a huge team effort, and will introduce many new team members, global best practice technologies, models on innovation and sustainability, as well as unprecedented leadership. At the same time it provides an opportunity for global communities to share knowledge and expertise towards a common challenge that is threatening the existence of the future generations,” explains Raldu Nel.

He says that the pilot project will be undertaken over three months. During January and February 2011, the team will deliver high-level planning, facilitation and scoping, as well as technical preparations. The pilot project will be conducted and completed in March, after which “we will produce the final results and findings of the low carbon mobility pathway project, for submission into the Katerva Challenge.”

In the transport industry, the only way to reduce carbon emissions is to reduce kilometres, fuel consumption and improve vehicle utilisation. “IMPERIAL Logistics is taking its existing sustainability initiatives a step further through this project, by implementing key energy savings and significant CO<sub>2</sub> emission reductions across the entire supply chain.

“We believe that this project could lead to major savings (both environmentally and economically) for the company, but it is important to note that the low carbon mobility pathway project isn’t the first efforts that IMPERIAL Logistics Refrigerated Services has made in the sustainability sector, adds Nel. Recent examples include:

**Reducing “extra kilometres”:** In 2009, IMPERIAL Logistics, together with Cardiff University in the UK, undertook a study whereby extra distance travelled as a result of uncertainties in the supply chain was calculated. Introducing the concept of “extra distance” as a measure of uncertainty within the supply chain, various elements including network modelling, the elimination of “dead kilometres” and initiatives to reduce fuel consumption and limit waste were focused on. In one case, it was found that of the 207 000 kilometres covered in one week, 13 143 were “extra kilometres”. This would have amounted to an additional 727 175 kilograms of carbon released over a one year period.

The study also found that > 6% of the transport distance actually run does not add value to the end customer, with both economic and environmental

implications. The initiative, in collaboration with Woolworths, resulted in the piloting of an award winning (2009 LAA Enviro Award) initiative that addressed unnecessary fuel consumption.

**ecoFridges:** IMPERIAL Logistics' green focus is implemented from the inside out. Throughout the Group, member companies strive to optimally deploy resources, from vehicles to drivers and continuously baseline reductions when new enabling technologies such as the ecoFridge become available. IMPERIAL Logistics Refrigerated Services has taken delivery of three ecoFridge-fitted trailers and a rigid body truck. The new nitrogen refrigeration equipment has zero carbon emissions to the environment and has no noise pollution. In 2010, the company implemented four Euro V units that run on low sulphur diesel, with ad-blue that further reduces toxic emissions.

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**Strategic Katerva Challenge team members**

# IMPERIAL Logistics

IMPERIAL Logistics is a global logistics and supply chain leader that moves business and industry through innovation, inspiration and foresight. Through its established Southern African and International divisions, IMPERIAL Logistics' service delivery comprises fundamental logistics and end-to-end supply chain management solutions to blue chip customers in almost every industry. ([www.imperiallogistics.co.za](http://www.imperiallogistics.co.za))

**IMPERIAL Logistics Refrigerated Services:**

In July 2010, IMPERIAL Logistics Refrigerated Services was formed through the consolidation of IMPERIAL Logistics member companies, Fast 'n Fresh, Liebentrans, Kobus Minnaar Transport and the broking division of Wilco Transport. The new company, which has a national (SA) footprint provides FMCG brands requiring temperature control logistics with an integrated, end-to-end solution that includes primary and secondary refrigerated transportation, supply chain analysis, tactical planning and supply chain integration. ([www.imperiallogistics.co.za](http://www.imperiallogistics.co.za))

**Blank Canvas International:** A global sustainability design and transformation consultancy, specialising in cathedral thinking.

**Energy and Combustion Services (ECS):** A focused technology company delivering high performance energy and emissions management solutions to large industrial companies, and ECS-TSD is a company largely owned by ECS, formed to facilitate the development of technology solutions, specifically making use of mobile technology. Solutions are developed to improve operational business processes in instances where transitions take place, such as transport and logistics, van sales or direct store delivery, electronic job-carding, meter reading and road condition monitoring. These solutions are provided under the Greenfleet brand and supported by the Technology & Human Resources for Industry Programme (THRIP). THRIP is a project managed by the National Research Foundation (NRF) and

the Department of Trade and Industry (DTI). The programme's goal is to improve the competitiveness of the South African industry by supporting research and technology development activities, and by enhancing the quality and quantity of appropriately skilled people. ([www.enerserv.co.za](http://www.enerserv.co.za))

**Altech Netstar Fleet Solutions:** This technology driven company pioneered the stolen vehicle tracking and recovery industry in SA in 1994, and is the market leader in terms of size, product range and an unsurpassed private recovery infrastructure. Altech Netstar, a market leader in vehicle tracking and telemetry, is providing Imperial Logistics Refrigerated Services with critical information to increase their operational visibility. "IMPERIAL Logistics Refrigerated Services, together with Altech Netstar, will be leveraging a combination of process automation and technology to redesign distribution networks, thereby shortening distances travelled and consolidating shipments," says Attie Lubbe, General Manager of IMPERIAL Logistics Refrigerated Services. ([www.altech.co.za](http://www.altech.co.za))

**CS International (CSI):** An international award-winning full-service Lean Enterprise and Six Sigma provider. CSI is known for its ability to implement high impact improvement initiatives that deliver benchmark results, by aiming to delivering World Class Lean Six Sigma deployments. ([www.csintinc.com](http://www.csintinc.com))

**The Da Vinci Institute, Centre of Excellence for Sustainability Migration:** This organisation strives for excellence in the field of managing technology, innovation, and people (i.e., sustainability). Da Vinci's offerings are positioned consciously to develop a managerial leadership competence that goes beyond traditional approaches. ([www.davinci.ac.za](http://www.davinci.ac.za))

**25° in Africa:** A niche publication focused on energy issues, electricity problems, climate change and sustainability solutions. The company brings key players in the energy and environmental fields together, both in terms of the research, development and manufacturing of technologies and funding of projects. ([www.25degrees.net](http://www.25degrees.net))

