



## **TERREX SEISMIC – PRESS RELEASE WORLD’S 1ST CARBON NEUTRAL SEISMIC CREW:**

### **“TERREX - ULTRALIGHT ENVIROVIBE CREW”**

On Monday 7<sup>th</sup> September 2009, Australian owned Terrex Seismic (TS) unveiled the ‘World’s 1st Carbon Neutral Seismic Crew’ on a Coal Seam Gas (CSG) exploration survey for Icon Energy near Goondiwindi, QLD, approximately 350kms southwest of Brisbane.

Terrex Seismic is Australia’s leading onshore seismic acquisition contractor with the capacity to operate five (5) Land Seismic Crews and currently employs approximately 150 skilled and experienced personnel. Critical to the TS initiative to reduce carbon emissions from Oil & Gas, CSG and Coal exploration onshore in Australia, is the configuration of a lightweight, small environmental footprint seismic crew. Compared with a conventional 2D seismic crew, the Ultralight Envirovibe Carbon Neutral Seismic Crew (Ultralight Crew) consists of:

- 2 or 3 x 8Tonne Mini Buggy EnviroVibes (instead of 4 x 20Tonne 6x6 Truck Vibrators);
- 19 people (instead of 24) and
- 9 Landcruisers (instead of 13);

The EnviroVibe Mini Buggy vehicles are manufactured in USA by Industrial Vehicles International (IVI). The EnviroVibe is a 4x4 articulated buggy mounted low impact vibrator system designed to produce a passive energy source that is used to map subsurface geologic structures. The system is optimised for operation around environmentally sensitive vegetation and close to existing pipelines, houses and infrastructure. The Ultralight Crew also minimises its footprint by using the lightweight man and vehicle portable Sercel 428XL Seismic Recording System.

Listed CSG explorer Icon Energy has recognised this innovation in hydrocarbon exploration and has been keen to partner Terrex Seismic in the deployment of the new concept. Indeed Icon Energy is the first Australian company to utilise the Ultralight Crew, highlighting their own concern for the environment and demonstrating the quest for low carbon emission exploration and development of their extensive CSG reserves in southeast Queensland.



Terrex Seismic has engaged consultants Carbon Neutral Ltd to assist in understanding and calculating the carbon footprint associated with the operation of one of its seismic crews. TS believes in taking positive action against climate change by encouraging individuals and organisations to reduce and offset their carbon emissions by working with organisations such as Carbon Neutral Ltd.

Carbon Neutral Ltd is a Perth based independently registered not-for-profit company and has worked with hundreds of organisations over recent times to implement environmental initiatives.

The first step for TS was to meet the team from Carbon Neutral Ltd and exchange ideas on how a carbon neutral seismic crew could be realised. Carbon Neutral Ltd's CEO Leo Kerr and Business & Finance Executive Ben Jones visited the Perth office of Terrex Seismic in May 2009 meeting with Managing Director Stephen Tobin and Greening Manager Leeton McHugh. Organisational histories and activities were exchanged and clarified with a clear Action Plan developed in order to implement a rigorous and transparent accounting of a Carbon Neutral "Ultralight EnviroVibe Seismic Crew".

*Action Plan;*

- Develop concept of a Minimal Carbon Emission "Ultralight Seismic Crew" – **Completed**
- Conduct Carbon Footprint Analysis and Offset Plan – **Completed**
- Identify Offsetting Requirements and Costs – **Completed**
- Purchase required Carbon Offsets (Verified Emission Reductions-VERs) – **Completed**
- Deploy and Monitor "Ultralight Seismic Crew" – **7<sup>th</sup> September 2009**
- Set Reduction Targets – **Evaluate November 2009**
- Organisational Benchmarking – to reassess and re-evaluate best practices to maintain continuous improvement – **In Progress**

TS with the assistance of Carbon Neutral Ltd has completed the calculation of the Ultralight Crew's carbon footprint and identified offsetting requirements. Terrex' Greening Manager Leeton McHugh is continually analysing emissions data from various suppliers and the Ultralight Crew. As the data is received from the field of operations, it is collated and checked for accuracy then sent to Carbon Neutral Ltd for further analysis. Acquired data is checked for consistency with relevant Australian Reporting Guidelines and the requirements of the World Business Council for Sustainable Development (WBCSD) & World Resources Institute (WRI) Greenhouse Protocol.

TS is offsetting its Ultralight Crew's emissions through the acquittal of Verified Emissions Reductions (VERs). Greenhouse Friendly™ Verified Emissions Reductions (VERs) can be used for immediate offset and are created from officially approved projects under the Greenhouse Friendly™ programme. **One VER equals one tonne of CO<sub>2</sub>e** that is already offset. Carbon Neutral Ltd will also plant 1 tree for each VER. Clients can donate to Carbon Neutral Ltd and the appropriate number of VERs will be acquitted on their behalf (which means that they cannot be resold). 1 VER may be acquitted with a donation of \$19.00.



## Carbon Footprint Methodology

To examine the emissions from Ultralight Crew operations, a life cycle analysis has been undertaken, using a cradle-to-grave approach, rather than a Scope 1 & 2 analysis commonly used to examine the emissions from a single organisation. The Carbon Footprint Analysis and Offset Plan therefore includes mostly Scope 3 emissions: those emissions produced by organisations other than TS but which were produced as part of the supply of the product or service. The Carbon Footprint Analysis and Offset Plan was prepared by Carbon Neutral Ltd and presents operational data provided by Terrex Seismic, the emissions calculation methodologies and the greenhouse gas emissions estimation.

Carbon Neutral Ltd uses the methodology set out by the GHG Protocol produced by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). This methodology provides detailed guidance on corporate emissions.

A more recent standard from the International Organisation for Standardisation, ISO 14064, also provides guidance on corporate footprint calculation and emissions reporting. It builds on many of the concepts introduced by the GHG Protocol by providing explanations of the steps covered here.

The classification method used to group greenhouse gases (GHG) emissions, by the level of control an organisation has over them, are categorised into three main types of GHG emissions:

- **Direct emissions, Scope 1**, are those emissions which are related to fossil fuels burning, mainly gas, used for building heating, gas boilers for hot water or fuel for company vehicles or fleet. It also includes refrigerant leakages.
- **Indirect emissions, Scope 2**, these are from imported electricity from power stations.
- **Other indirect emissions, Scope 3**, are from products and services such as the emissions from the consumption of goods and services, waste, air travel etc. All Scope 3 emissions associated with the provision of the seismic crew that can be identified and estimated will be included. These will include emissions from raw material extraction through to disposal.

## Scope, Boundary and Data Collected

The operational boundary was set to include cradle-to-grave emissions for all activities and equipment used by the Ultralight Crew. Exclusions are listed throughout the Carbon Footprint Analysis and Offset plan. The following areas were examined;

- Embodied Emissions of Vehicles and Equipment
- Operation Emissions
- Diesel Fuel Consumption
- Overnight Accommodation / Meals Away
- Flights to/from Job Site
- Other Job Related Expenditure



## Operational Emissions Summary

Each quarter Terrex Seismic purchases sufficient emissions offsets (VERs) for 3 months of operations in advance, to ensure that any “Carbon Neutral” claims it makes can be justified on an operational day-by-day basis (ie from a carbon emissions perspective, the Ultralight Crew is always operating “in Credit”). At the end of each quarter TS will then need to reconcile its emissions against its estimations, and make up any difference. TS has developed tools to collect the data required to estimate its emissions accurately.

## Terminology

Carbon Dioxide or CO <sub>2</sub>	Carbon dioxide (CO <sub>2</sub> ) is a <u>gas</u> . Carbon Dioxide is just one of the <u>greenhouse gases</u> which impact on our climate and the weather patterns of the planet and has been found to contribute to the Global warming.
CO <sub>2</sub> e	There are six main greenhouse gases which cause climate change and each one of these has a different global warming potential. For simplicity of reporting, the mass of each gas emitted is commonly translated into a carbon dioxide equivalent (CO <sub>2</sub> e) amount so that the total impact from all sources can be summed to one figure.
Greenhouse gases (GHG)	Greenhouse gases occur naturally in the <u>Earth's</u> atmosphere and create a layer around the earth which keeps the planet warm. However if too many gases are released, as with CO <sub>2</sub> , the layer becomes thicker and prevents heat loss from the planet thus causing the Earth to heat up very slowly. The name for this is the <u>greenhouse effect</u> . Carbon is the most significant greenhouse gas. Other greenhouse gases are methane (which is produced from landfill or agricultural activities), and Nitrous oxide (as a result of transport and industrial processes). Greenhouse gases are natural (such as water vapour) and without them the earth would be 15-30° C colder and vegetation would not grow.
ISO14065	This is a global standard that can be used to measure ' <i>Greenhouse Gases Emissions</i> '. It should not be confused with other certification such as the Environmental Management Systems ISO14001, however it is a tool to ensure that businesses who use it to calculate their emissions using the same methodology. The standards are not aligned with any particular scheme, but are independent.
World Recourses Institute (WRI)	WRI is an environmental think tank that goes beyond research to find practical ways to protect the earth and improve people's lives. WRI have recognised climate change as a critical threat to people's lives and to the environment. WRI published the Greenhouse Gas Protocol for Project Accounting in 2005. The protocol takes the approach of identifying emissions by 'scope' (setting out Scope 1, 2 and 3).



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