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## **Kyoto Protocol**

### **1. Protocol Summary**

Revetec is listed with the National Stock Exchange of Australia (formerly the Newcastle Stock Exchange). Persons who wish to trade should visit the NSXA website [www.nsx.com.au](http://www.nsx.com.au).

The international agreement known as the Kyoto Protocol was adopted by the majority of countries in the world to regulate and minimise the world's emissions to combat global warming.

The Protocol's aim is to reduce greenhouse gas (GHG) emissions, namely carbon dioxide, and nitrous oxide and other gases which are emitted from combustion engines from industrial plants.

Whilst those participating countries have voluntarily signed this Protocol they are legally required to meet certain emissions target by 2012.

Eventually participating countries that do not meet the targets will be penalised.

### **2. Three Key Mechanisms Under the Protocol**

The Protocol provides three mechanisms that enable the acquisition of Carbon Credits:

**Joint Implementation (JI)** – under this mechanism an industrialised country, which has relatively higher costs, can establish a greenhouse reduction project in another industrialised country, which has a relatively low cost.

**Clean Development Mechanism (CDM)** - An industrialised country can adopt a greenhouse gas reduction project activity in a developing country where the cost of such project is substantially lower. Under this arrangement a developing country would receive the necessary capital for the project and "Green" technology to start up the project. In return, the industrialised country would be granted the credits for achieving its emission reduction targets in this project.

**International Emission Trading (IET)** – Under this mechanism, nations can buy and sell carbon credits in the International Carbon Credit Scheme. In other words, nations with excess carbon credits can sell the same to nations with quantified emission limitation and reduction commitments under the Protocol.



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## **Revetec's Carbon Credit Trading**

### **1. Trading Explanation**

Industrialised countries are struggling to meet the set targets because the cost of reducing Carbon Dioxide (CO<sub>2</sub>) is in the order of \$500 for every tonne of reduction of CO<sub>2</sub>, in contrast to \$25 per tonne for developing countries.

The developing countries emission levels are substantially below the target fixed by the Protocol.

Consequently, the developing countries are permitted to sell their surplus credits to the industrialised countries.

Furthermore, companies in the industrialised countries who are unable to meet their targets can buy credits from companies that have surplus credits from developing countries.

Whilst the Kyoto Carbon Credit System will commence in 2008, emission-trading exchanges are already formed and have commenced trading.

Sindicatum Carbon Capital a leading developer of CDM and JI projects has stated ([www.sindicatum.com](http://www.sindicatum.com)) that "the generation, sale and trading of Carbon Credits is a new global commodities market with more than €145 billion today".

### **2. Carbon Credit Trading Exchanges**

Currently there are two major trading exchanges that trade carbon credits, the Chicago Climate Exchange (CCX) ([www.chicagoclimateexchange.com](http://www.chicagoclimateexchange.com)) and the European Emissions Trading Scheme. Whilst Australia is not a signatory of the Kyoto Protocol, big business in Australia is increasingly participating in the trading schemes.

The New South Wales State Government in Australia has since 2003 established a voluntary trading scheme.

The carbon price is calculated at one (1) credit for one (1) metric ton of carbon dioxide emission reduced.

In recent years trading CCX Agricultural Methane Emission offsets have ranged from US\$1 to US\$3.25 per metric ton.

## **Revetec's Green Technology**

1. Revetec's technology which is regarded as "Green" engine technology not only uses less fuel but also greatly reduces carbon emissions compared with the current conventional combustion engine.

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2. The Revetec Controlled Combustion Engine is a downsized high torque unit that does not utilise the conventional inefficient crankshaft. This is achieved by using two (2) counter rotating trilobate cams which increase the overall mechanical efficiency of a combustion engine by over 25%. The increased efficiency that produces the higher torque, less fuel consumption and reduced carbon emissions.

3. The Revetec engine applies to all internal combustion engines used in land, marine and aerial vehicles, namely, automobile, light aircraft, agricultural, industrial engines, generators and marine use.

4. This engine can be adopted for petrol, diesel, ethanol, CNG and heavy fuel.

5. The Revetec engine is relevant to carbon credit in two (4) main areas:

i. Revetec, in the design and supply of engines, can arguably claim carbon credits. This will involve the engine being evaluated and certified. As a carbon credits producer Revetec can potentially trade its credits in the various exchanges. This is expected to occur as soon as Revetec starts selling or licensing the engines. With the high volume of engines being produced in the long-term the company's revenue from carbon credit trading will be significant.

There are reports suggesting that a car with a conventional crankshaft produces five (5) metric tonnes of CO<sub>2</sub> each year. The efficiency gains of the Revetec engine can reduce emissions to approximately 3.5 metric tons of CO<sub>2</sub>.

This will provide each Revetec engine with a saving of 1.5 tonne of CO<sub>2</sub> per year. The Chicago Climate Exchange has been trading credits at about \$2.16 per tonne of CO<sub>2</sub>. This trading price is expected to increase as Kyoto Protocol implementation gathers pace. However, the above is subject to formal testing and evaluation of each engine type.

ii. One of the key greenhouse gas reduction projects being undertaken in both industrialised and developing nations is the Landfill Renewable Energy Project. These landfill projects comprises of a gas extraction system to extract landfill gas with an internal combustion engine utilising the landfill gas to generate electricity. The electricity generated at the plant can be sold back to the local electricity grid. Projects of this type can also claim carbon credits which entitles the operation to trade in carbon credits from the combustion of extracted gas.

iii. The Revetec Generator (Genset) is expected to play a significant role in these landfill projects or any other projects which require the use of a generator. The Revetec engine will not only be more efficient and will reduce emissions but will be cheaper to operate as it uses much less fuel than a conventional combustion engine. We expect that landfill project operators will find our technology attractive to their projects. This will give the operator a much higher profit margin in addition to an increase in carbon credits.

iv. It is Revetec's contention that landfill projects using a conventional generator to produce electricity will negate some benefits as the inefficient generator itself will produce carbon emissions. The Revetec generator will to a large extent reduce these problems.

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## Revetec's Carbon Credit Trading

1. Revetec's strategy is to collaborate with organisations which specialise in carbon credits to assist Revetec to achieve CDM and other approvals which will enable Revetec to claim credits.

2. There are many international banks which are now specialising in funding and managing greenhouse gas reduction projects. It is Revetec's objective to seek funding to enable Revetec and its partners to raise the necessary capital for various projects.

Revetec's engine technology could be employed as a useful tool to assist banks clients' in its projects.

Large companies are increasingly becoming aware of this issue. They are beginning to either invest in projects which reduce carbon or just buy carbon credits.

3. Revetec will also operate closely with various organisations and engineering firms that specialise in providing renewable energy systems, especially where an internal combustion engine is integral to its operation in the generation of electricity. These organisations using Revetec's technology will provide additional benefit not only to themselves but also to their clients.

It is the intention of Revetec to undertake joint projects where Revetec will supply the necessary Genset to generate power.

There are a large number of projects for instance, which seemingly reduce carbon emissions such as the electric car but these projects do not produce any overall net gains, they are simply shifting pollution elsewhere. In the case of the electric car, the city might reduce pollution but it will correspondingly increase the pollution where the electricity is produced through power stations located in the countryside. Revetec's technology is not a shifter of emissions. It is a highly efficient engine that reduces carbon emission.

## Revetec as a Carbon Credit Investment

As a likely producer of Carbon Credits, companies wishing to hedge against the increasing cost of reducing emissions may well be attracted to investing in Revetec. The race for carbon credits will encourage the corporate and or sophisticated investor who wishes to include the production of carbon credits as part of its carbon credit trading strategy.

Revetec with a prospective income stream from its engine sales and royalties from its licensing program coupled with carbon credit trading will become a more attractive investment to investors.

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