

Title:

BIO-FUEL CROPS PRODUCING BIO-DIESEL

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Summary:

A HEALTHY AND VIABLE FUTURE IN VIETNAM

GreenEnergy Ltd, is Vietnam's first mover in the scientific cultivation of bio-fuel crops. The founder of Green Energy Mrs.Tang Thi Kim Phuong is an entrepreneur, wife and mother and has devoted the last three years of her life to the conception, incorporation and licensing of GreenEnergy Ltd; Vietnam (GEV).

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Article Body:

The company now boasts 22 employees, including scientists, farmers, international businessmen, industrial workers and of course family.

GreenEnergy`s corporate mission aims to bring large tracts of rural land under scientific but basic cultivation of bio-fuel feedstocks, bringing with it employment and entrepreneurial opportunities to potentially thousands of Vietnamese rural poor, while providing inputs for GreenEnergy`s core business, the refining and marketing of bio-diesel.

It is a win, win situation for everyone because not only does cultivation of this vegetable oil require only marginally arable, war damaged or barren land, this also means its activities do not compete with other food production

which avoids putting upward pressure on food prices.

N.B (Vietnamese Government has identified seven million hectares as marginal, barren or war damaged land).

In addition GreenEnergy`s operations achieve a renewable and sustainable fuel source for Vietnam to continue its development with all the attendant social, economic and environmental benefits in producing clean energy.

Because of the scale and potential of the bio-diesel industry in Vietnam and indeed globally, where tens of millions of bio-fuel crops will have to be grown to substantially replace fossil fuels, a 'second green revolution' is possible, bringing with it true improvement in the lives of the rural poor and vegetable oils can play a significant role in helping to ameliorate global warming as a key aspect of climate change.

Global warming, a key aspect of climate change, now clearly recognized as a result of a concentration of greenhouse gases (GHGs) in the atmosphere - has the worst impact on the climate.

Carbon dioxide, the most common of GHGs, is emitted during the burning of fossil fuels.

The Kyoto Protocol gazetted in February 2005 requires participating countries to cut carbon emissions.

Further to this, rising crude oil prices and the need to reduce dependence on imported oil has made it necessary for net oil importers to think of alternative energy sources. The precarious situation with fossil fuel supplies coupled with the ability of bio-fuels to lessen that risk, makes it feasible for the global economy to

revert its focus towards agriculture and those traditionally engaged in it, thus offering a potential boon to Vietnam's rural sector.

Full bio-diesel use would reduce net CO2 by over 78% compared to petroleum diesel and up to 16% with the use of blends comprising 20% bio-diesel.

While both fuels are almost equally efficient at converting raw energy resources into fuels, bio-diesel has a larger part that is renewable. Similarly, bio-diesel is non-toxic and environmentally friendly as it produces substantially less CO2, ensuring sustainable environmental practices.

GreenEnergy has recognized this mammoth task and has adopted a dual strategy for attaining its goals in Vietnam.

1. Public - Aggressive initiatives to "jump-start" the production side of bio-fuel feedstocks by forming a partnership with Vietnams Central Government and People's Committees as well as aid agencies to help put large tracts of marginal land under bio-fuel crop cultivation quickly.

A memorandum of understanding and support was signed by the Peoples Committee of Binh Dinh Province and Green Energy Vietnam on the 8th of December 2006 and the 500 hectare Binh Dinh Research and Training Facility for the Cultivation of Biofuel Feedstocks has been established, known as BDF- FARMER ENERGY- a working laboratory devoted to developing the bio-fuel industry for the benefit of Vietnamese rural poor.

2. Private - Includes GEV investments to retain its 'First Mover' advantage by securing its proprietary feedstocks, expanding its physical

plant refinery presence and continuing to build its integrated supply-chain, complete with forward contracted suppliers and customers.

It is in this first arena, Public Initiatives, that GreenEnergy sees co-operation with aid agencies.

Some of the substantial and sustainable benefits that the cultivation of bio-fuels crops can contribute to Vietnam are:

1. Real cash growth, raising the annual income of \$820 to \$1,300 U.S. for thousands of marginalized rural families.
2. Private homesteading for the rural poor.
3. Stress relief and barren or war damaged land reclamation.
4. Enfranchisement of poor, rural women.
5. Retention of scarce foreign currency reserves and
6. Independence from the uncertainties of global mineral oil markets.

The People`s Committee of the Province of Binh Dinh and GreenEnergy, Vietnam, in full realization of the enormous impact this Research and Training Facility will have for all of Vietnam`s rural communities, cordially invites any and all organizations seeking positive change in the livelihood of rural Vietnamese to form an active Partnership in the development of this Research and Training Facility.

The Binh Dinh Facility wants to be a catalyst in harnessing this opportunity for all stakeholders and delivering:

. A path for the rural poor to climb out of their deprivation rather than fall further behind.

. A renewable, sustainable and viable alternative to fossil fuel for Vietnam's surging economy. and an industry that rejuvenates, rather than degrades the environment.

Introduction to the oil plant Jatropha.

The oil plant *Jatropha curcas* (L) (*Jatropha*) or physic nut, is multipurpose and drought resistant, growing to a height range of 2 to 7 metres for the Asian species and it not only flourishes in tropical and sub-tropical climate zones but even in areas absent of water.

Because its leaves and stems are toxic to animals it is often used as a protective hedge around farm houses, gardens and fields.

It also reduces soil damage caused by erosion from wind and water and traditionally the seeds were harvested by women for medical treatments and local soap production.

In Thailand, *Jatropha* normally flowers twice a year, in dry and rainy seasons with seed harvesting conducted approximately 60-90 days after flowering and the oil plant has a productive life of 20 years.

Because the market is probably not yet mature enough for the plant to generate enough income solely from oil extraction, a holistic rural development approach has to be taken into account in order to exploit all potential uses of the *Jatropha* plant. This approach is known as the *Jatropha* System.

The system focuses not only on the use of the source as a fuel, but rather as an element,

to activate a system combining ecologic, economic and income generating activities.

Consequently, the Jatropha System offers four main aspects of development aiming to better the livelihoods in rural areas, especially for women and farmers:

- . Renewable energy- bio-diesel
- . Erosion control and soil improvement
- . Promotion of women and
- . Income generation.

About one-third of seeds can be extracted as oil that has a similar energy value to diesel fuel. The oil is extracted by hydraulic pressure and then filtered through an intensive sleeve that can then be readily used without any complicated refinery process, directly available for small diesel engines as a substitution for diesel oil, without engine modification.

This oil can power engines, such as water pumps, tractors, hand mowers, other farm machinery and rice milling machines and by using this domestically produced oil as a substitution for imported oil, significant cash savings can be made.

GreenEnergy Ltd have already committed a considerable amount of time, money and resources to this environmentally sound and economically sustainable project in Vietnam and welcome further input from other interested parties.

It is also their belief that at an international level, stakeholders involved should perform a three pronged approach, with mutual knowledge, technology transfer, genetic development of

high oil content in the seeds and exchange of
Jatropha species, together with investment
and trade linkage.