



**VEPOWER
Limited**

VEPOWER Limited is a sustainable energy business focused on bioenergy. The Company is a technology practitioner, founded on years of proven industry experience serving international utility companies, financiers and finance houses, project developers, governments and their agencies internationally, the global process industry and others. To this end VEPOWER, having extensive expertise in delivering the full lifecycle (from the soil to process to combustion) of bioenergy, propose to provide the requisite services to deliver many clients' projects:

Bioenergy business services:

- Energy crop cultivation
- Oil production and stage 1 refining
- Used cooking oil
- Biodiesel
- Bioenergy for power and industry
- Sourcing and procurement
- Environmental permitting
- Finance
- Business management

Products and services:

- Feasibility studies and planning
- Master planning
- Business planning
- Fund raising
- Sourcing and Procurement
- Technical support or consultancy
- Project delivery

Bioenergy business services

VEPOWER has expertise in all areas of the lifecycle of bioenergy:

- Energy crop cultivation: VEPOWER has a broad knowledge of the issues surrounding the cultivation of bioenergy crops. This ranges from the planting and husbandry of such crops to the ecological demands of these. The application of this knowledge enables the efficient and sustainable cultivation of crop species such as *Jatropha curcas*.

Beyond the well known crops VEPOWER is working with leading international universities to explore alternative crop species and novel cultivation patterns, to stay at the vanguard of the industry. Such developments are expected to improve the health of a planting and add to the yield of these too.

In order to aid bioenergy crops in using degraded land VEPOWER is developing organic fortifiers to enhance the uptake of nutrients and improve drought resistance in arboreal crops.



VEPOWER Limited
6 The Mead Business Centre, Hertford, SG13 7BJ, UK
Tel: 020 3286 8771 Fax: 020 3137 1980
email: info@vepower.com Web: www.vepower.com

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- Oil production and processing: VEPOWER technologies can facilitate improved oil yields by means of enhanced expelling techniques. Proprietary methods allow for the release of greater amounts of oil without the processor's need to compromise on oil quality.

At the next stage VEPOWER technologies can assist the processor in reducing the natural contaminants.

- Used cooking oil: As well as virgin oil refining, VEPOWER has more than 20 years experience of used cooking oil (UCO, waste cooking oil, grease) processing and refining. The multi-stage process designed by VEPOWER is highly efficient and cost effective to employ. Processes can include filtration which can remove particles to a sub-micron, even nanometre scale and molecular sieve technology.

Next the oil can move in one of two principle directions: road fuel as biodiesel or energy/industrial fuel:

- Biodiesel: VEPOWER's principals have been responsible for the design, build and operation of many plants including one of Europe's largest biodiesel refineries. The plant processed 1,500 tonnes of fuel in a week consistently exporting top quality grade fuel- conforming to EN-14214 and with a carbon intensity of only 25gC/kg versus an industry standard for rapeseed biodiesel (RME) in excess of 50gC/kg.

The technological strides that enabled that performance can be made available to biodiesel producers everywhere. Under licence agreements operators of existing plants can improve energy efficiency, increase production, enhance quality and reduce downtime.

By way of an illustration, VEPOWER has designed and developed the full QA & QC (quality assurance and quality control) systems for plants which consistently exported fully qualified fuels, conforming to the EN-14214 biodiesel standard.

- Bioenergy for power and industry: VEPOWER technologies enable the use of the whole of an energy crop in the production of power and heat for industry or utility power. A dual approach adapts the engine and its ancillaries in readiness for the fuel. Fuel technologies ensure the fuel is suitably energetic and pure for efficient clean combustion.

VEPOWER advances in heat management enable the most efficient use of the 'waste heat' from combustion (as much as 65% of the energy from the fuel is otherwise lost). This heat may be employed in facilities management or in industrial processes.

Non-technical service:

- Sourcing and procurement: VEPOWER team members have a wealth of experience in trading and shipping vast quantities of raw biofuel materials across the Globe. Fuels and feedstocks have been sourced and purchased from many regions of the World in parcels from 1 litre samples through containerised batches to ocean going bulk tankers of oils.
- Environmental permitting: The VEPOWER team has a long experience in the successful applications for planning from UK local authorities and the national Environment Agency (EA), with a 100% success rate. To date, more than 20 successful applications have been made, including applications for new biofuel and raw materials plants, for minor and major variations, changes of use and so forth.

VEPOWER is fortunate to have members that have been senior in the EA and that have sat on Gov-



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ernmental panels convened to write or review policy.

- Finance: Sustainable, clean and efficient bioenergy schemes are meritless if they are not cost effective and profitable. VEPOWER's business team is at the disposal of clients wishing to refine their business plans and or seeking finance.

Over their careers the business team have raised more than 100 million in investment for a wide range of projects to date. This wealth of experience has taught the team how to present data, and understand what the experts look for and what they consider to be frivolous adornment.

Using the company's technical expertise business plans can be dissected and examined in fine detail ('critical friend approach'). This will highlight any points that can be strengthened or where the due diligence exercise of an investor will raise questions, before the documents are presented.

VEPOWER has a wide range of experience in assessing whole projects and suppliers of goods or services in due diligence processes for both the Company and clients. A wide range of questions have been investigated in establishing the credentials of such suppliers.

- Business management: Profitability can be measured and then enhanced given the correct skills and tools. VEPOWER's business team has developed tools for the analysis of businesses with a view to evaluation of current practice. Given this evaluation, recommendations are made to improve or build on current strengths.

Where a business is financed by equity holders, VEPOWER can assist in the preparation of timely and appropriate information which may be reported to investors. This can help to maintain the share holders' confidence and potentially attract increased investment.

Products and services

VEPOWER is in place to assist the energy industry, industry in general, the carbon markets, construction and facilities management and others in establishing and developing their bioenergy businesses at various levels:

- Feasibility studies and planning: before undertaking a project it is wise to conduct a study evaluating the many various aspects of a plan. This may include the potential for rudimentary profitability, supplies (land, fuel, labour etc.), the suitability of a site, the costs and sales values of materials and products and the legal aspects of a plan (e.g. local and national authority permissions). VEPOWER can conduct such a study under various arrangements and the data yielded used to create a business plan (see the section 'Business planning) or permission application.
- Master planning: VEPOWER has developed a method for the feasibility of a generalised plan for the implementation of bioenergy facilities within a country or state. A master plan takes average figures for all the aspects covered in a feasibility study and projects them across a number of potentials scenarios that may be encountered in a country or state wide plan.

Both a feasibility study and master plan only contain rudimentary financial equations used to assess basic profitability or financial efficacy. A full and properly formatted business plan is required for any plan to be presented to investors.

- Business planning: Taking data from one of the above or that which is provided by a client, the VEPOWER business team can devise a business plan on which a new business can be built or an existing business can be developed.



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VEPOWER provides a critical look at the plans as they are already developed, assesses the potential for success and compiles a presentation that may be used in presenting to financial institutions or investors.

This new service has been taken up by numerous projects in various parts of the World. VEPOWER planning has enabled some of these already to attract serious interest from major financial institutions and their agents.

- Fund raising: VEPOWER's business professionals have raised many millions in investment in to projects and can do the same for any well made business plan. Plans submitted are first assessed for suitability for presentation. Where possible good plans are presented to investors as soon as the time is right. Some though need to be developed further and are referred for business planning (see above).

VEPOWER's team has built up a network of investors and financial institutions that respect their expertise and judgement. This can greatly improve both the probability of adopted projects being funded and also the time it takes for that process.

- Sourcing and Procurement: VEPOWER can place the Company's skills and experience in product sourcing and transport at a client's disposal. Fuels and feed stocks can be sourced from across the globe and/or locally as required. If required, VEPOWER can then organise the shipping of those materials from door to door.
- Technical support or consultancy: while VEPOWER is a technical practitioner the company can provide various support services as needed by clients. However this can include various projects where hands-on work is not involved but the Company's expertise is well applied. Such works have included, but are not limited to, market assessments, advice on the applicability of fuels to exotic plant and means to preserve volatile fuels.

Within the Company there are experts in environmental law, mechanical engineering, finance, process engineering, ecology and sustainability, plant husbandry and much more. VEPOWER due diligence services are a special case. Here the Company undertakes to assess a potential project or supplier for fitness and the ability to deliver the proposed product or service.

- Project delivery: VEPOWER's broad range of knowledge and experience makes the Company ideal for total project management, design and delivery. For example, the Company is developing a multi-facet bioenergy plant for a client in London, UK. The plant will include fuel processing and storage facilities, power generation equipment, heat recovery and implementation equipment and much more.

Another example is the commissioning of VEPOWER to deliver full turnkey bioenergy facilities taking the fuel from plant to generator. This model is to be repeated across that Country, each time adapted to the prevailing local conditions. Similar has been requested by national governments in three other developing countries.

Projects can be single phases (e.g. building a biodiesel plant) or multifaceted, as above. VEPOWER approaches each project with the same attitude and diligence whether big, small, complex or simple.



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