

## THE RENEWABLE ENERGY CENTRE: KING REVIEW OF LOW CARBON CARS

In the continuing fight against climate change there have been an increasing number of targets set in the UK and internationally for varying types of energy use and generation. One of the most important areas in which the UK needs to reduce carbon emissions is the transport sector, but it has also proven to be one of the most expensive areas in which to make any significant technological development and improvements.

The King Review of Low Carbon Cars, announced in June as part of the 2007 Budget, was intended to build on the progress made in recent reports including the 2007 Energy White paper and examine the vehicle and fuel technologies which over the next 25 years could help to decarbonise road transport, particularly cars. Following the publication of the report issued by HM Treasury and led by professor Julia King of Aston University, Gordon Brown issued a call for evidence from all interested parties on how best to reduce emissions from road transport.

CO2 output. The Cambridge report produced this year, estimates that the UK will be unable to meet the reduction targets set following the Kyoto agreement in 1997.

The Biomethane for Transport organisation responded to the King Review and stated that the one of the most economically viable directions to take would be vehicle and fuel improvements that can be adapted to existing internal combustion engines.

Biomethane for transport had many advantages over many of the other technologies proposed. Biomethane has the lowest gas emissions of any biofuel and the capture, upgrading and burning of the gas actually produces fewer emissions than if the organic waste used was left to decompose naturally.

The organisation also suggests a way in which organic waste can be used more productively, whereby a waste management plant is linked with anaerobic digestion facilities to make use of the methane gas produced. This would provide a useful solution for organic waste, in turn reducing the amount of waste sent to a landfill and provides vehicles with a source of renewable fuel.

However, some argue that the results of this review will have little impact on the cars driven in the UK in the short term, particularly due to the fact that none of the major car manufacturing operations in the UK are British-owned anymore, and the review will only have limited influence on foreign-owned companies.

Biomethane should prove to be a very realistic part of the future alternative to fossil fuels but will only truly reduce the impact we are having on the environment if we realise that it cannot be used in isolation. It is important that we work towards more fuel efficient cars and reduce our often excessive use of vehicles.

Any individuals wishing to learn more about Biofuels, Biomethane and Renewable Energy should make [TheRenewableEnergyCentre.co.uk](http://TheRenewableEnergyCentre.co.uk) their first visit. As well as an introduction to the key types of renewable energy and practical advice on systems and installation, the website also offers a national and local directory of specialist products and suppliers, particularly useful for individuals to research the possible options available to them and helping them make an informed decision.

The deadline set by Gordon Brown for submissions of response was the 20th August, and an announcement on the legislative change surrounding low-carbon cars is expected in the pre-budget report at the end of the year.

For more information visit

[www.TheRenewableEnergyCentre.co.uk](http://www.TheRenewableEnergyCentre.co.uk)

[www.hm-treasury.gov.uk/independent\\_reviews/king\\_review/king\\_review\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/king_review/king_review_index.cfm)

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Notes for Editors:

[www.therenewableenergycentre.co](http://www.therenewableenergycentre.co).

The production of cassava starch processing wastewater is the most difficult yellow pulp wastewater, the wastewater is a high concentration of organic wastewater, cause serious pollution, handling difficult. If this part of a wastewater treatment, to resolve the cassava starch production wastewater treatment fundamental problems. So This paper focuses on Huang pulp wastewater treatment process.n

Current domestic use yellow pulp wastewater treatment technology is the main routes: the oxidation pond effluent treatment technology for agricultural irrigation line; Wastewater treatment and to some extent by the use of water from the proliferation of Sham or technical routes; Wastewater treatment to solid-liquid separation technology for the production line; EM bacteria; Huang pulp wastewater recycling of solid-liquid separation, protein used as feed additives, wastewater methane production by anaerobic digestion, biogas slurry discharge standard aerobic treatment technology routes. Starch production enterprises should be combined with the natural environment and building conditions and economic affordability and its possible routes to the technology used in analysis and comparison.

The process has low running costs, less energy consumption, management advantages of simple, but such an approach requires greater oxidation pond size, the irrigation area; Because of the high concentration of organic compounds in the wastewater, natural biodegradable slow, if more than oxidation pond natural purification system processing capabilities, organic pollution with the accumulation of increasingly, various microbes in water, algae, aquatic plants, many deaths, the original natural oxidation pond purification system quickly undermine destruction. The wastewater discharges to the ground surface water runoff pollution from wastewater at the same time as low pH, soil acidification will long for irrigation, reduced crop yields. In addition, the proliferation of wastewater odor serious impact on the surrounding sanitation. Blockbuster Starch Ltd. Guangxi existing conditions while building a larger area of oxidation pond and sufficient irrigation land area, but the approach of treatment, the effluent discharge standards difficult to meet emissions requirements, the local ecological environment will cause enormous harm.

That refers to the use of natural dilution with water, self-purification and pollutant carrying capacity, Sham (IOC) emissions from the proliferation of the technical route. Wastewater is discharged into the future with a certain degree of flooding or ocean, with low operating costs, simple management features. The process water in the vicinity of the high concentration of capacity to accommodate the wastewater enterprise is not appropriate.

Huang pulp wastewater directly back to Java for the production of cassava alcohol production lines, mainly used as chicken-slurry. Guangxi individual manufacturers using this alcohol production lines, this method of cassava starch production of the remaining residue and yellow pulp wastewater can use, but needs investment in a new production line, but the production of ethanol is not high, its economic assessment to be.

EM technology with a high concentration of organic wastewater (including alcohol wastewater and wastewater starch), is currently Guangxi individual manufacturers to test run. EM method is to increase the water for a variety of biological cells, it can help in water consumption of biological organisms in water. Due to the number of bacteria in water is very limited, so EM method in the water can play a role is also limited. Using this method, the existence of the following shortcomings: take a large surface area (several million square meters); Require long-term retention time (3-4 months or longer); High-starch concentration of wastewater, and must first be processed in a day to consume large amounts of lime; Must Dilute with a lot of dry before processing; input wastewater daily to a certain number of cells. At the same time, because of the wastewater treatment process open, strongly influenced by environmental factors, and environmental factors beyond its control, the process is often halfway termination failure, it is difficult to process requests. This method required a great deal of processing volume, while actual effect is not ideal, would put the local ecological environmental damage.

Before the 1990 s, in the yellow pulp anaerobic wastewater treatment, acid production faster than the speed of methane production, causing acidification-stage anaerobic treatment, organics removal rate is not high, aerobic treatment stage operation cost too much, so that this technology has been seriously hampered. The company is a net-F strain has grasped technology, anaerobic treatment of organic removal rate is not high technical problems have been resolved. Low levels of pollutants anaerobic effluent can be treated by aerobic emissions standards. Aerobic treatment methods include activated sludge and biofilm process, domestic high concentration of organic wastewater treatment using more mature technology. Its main use is the process of flotation machines modified starch wastewater solid-liquid separation, place most of the yellow slurry of protein and suspension, the ash used as feed or heap Retting do farm manure, wastewater in the remaining suspended solids does not affect anaerobic treatment, the solid-liquid separation process, after the modified starch through anaerobic wastewater - Aerobic Treatment using water standards. While anaerobic treatment process will generate large amounts of methane as a source of energy and therefore the process of being adopted by many manufacturers at home and abroad. Some domestic manufacturers, not only wastewater discharge standard, but also for the gas plant production, the use of live eased the energy shortage of contradictions, at the same time to bring the convenience of workers, create good economic returns, entered the social benefits, economic benefits, environmental benefits coordinated development of a benign cycle stage. The biofilter is mainly used in wastewater anaerobic bacteria to digest the organic matter degradation, the entire wastewater treatment process lower energy consumption. It has the following features: an area of provincial, project investment; Organic removal, water quality standards may emissions; Operation management simple, low energy consumption and save operating costs; The biogas can be used in the production of boiler combustion and civilian, thereby saving the cost of production and create economic benefits.

After two to three sedimentation ponds, most of which will be easy separation of suspended sediment. This method is simple, low cost of operation. But because of cassava less protein precipitation, sedimentation ponds larger footprint, higher investment; At the same time if the residence time of

cassava longer vulnerable to corruption metamorphism, not only from factories smell of the air, but will also affect the quality of recovery to economic benefits greatly reduced.n

In addition to yellow pulp wastewater, the wastewater plant with the other water, high concentrations of suspended solids, biochemical characteristics of the poor, such industrial wastewater, the general Hydrolysis + aerobic treatment process. Acid Hydrolysis using bacteria to the water into small macromolecular organic decomposition of organic matter (whose main ingredient is organic acids, alcohols), the degradation of pollutants in wastewater, sewage and improve the biodegradability of waste water soluble increase biodegradability and reduce aerobic treatment more difficult.n

One through five pairs of starch production of the yellow line pulp wastewater treatment technology analysis and comparison, we can see that yellow pulp wastewater treatment process, the first five technical route than other technical route has a very clear advantage. Huang pulp wastewater as a high concentration of organic wastewater, a separate anaerobic treatment, mixed to low-concentration wastewater treatment system used Hydrolysis, aerobic joint approach at home and abroad, have long-term design, construction and operation of management experience with reliable, effective handling characteristics.n

Through the production of starch production in the wastewater treatment process are analyzed and compared against various wastewater water, the water situation at home and abroad and high concentration of organic wastewater treatment technology development and our practical experience, the use of flotation separation + + methane producing anaerobic digestion based aerobic treatment process, combination Hydrolysis and physicochemical treatment methods to ensure emissions standards for the wastewater treatment technology is feasible route is more appropriate. This type of line is the best to handle such wastewater, the process line in the home also has many successful experiences.n

A net - is the company s technical strengths: high concentration of organic wastewater treatment (such as starch wastewater, wastewater and alcohol), and the anaerobic digestion by the use of biogas production. Currently, my company in this technology Habitat leading domestic level by the project is the largest example.n

But in the process to identify specific, not easily used theoretical calculations and the small test data, and there should be more focus on engineering examples of operating data; In dealing with advanced and the applicable issue to give priority to practical and economic stability and reliability to prevent mistakes in decision making.n

Biological Process, briefly, which is natural water purification process strengthened. Water self-purification ability to have a critical point over this critical point, the self-purification ability of the water would be lost. This issue should start from the production brought great attention. Then if after water has been corruption (loss of self-purification capacity), and began treatment, we should use 10 times the cost of restoring water to be self-purification capacity. With less money for wastewater pollution can be control, starch wastewater treatment project to be carried out as soon as possible, no question oxidation pond water corruption (loss of self-purification capacity) after a treatment. As to the future governance caused unimaginable difficulties.n

Enterprises should incorporate the specific circumstances such as: a relatively low premium, the use of oxidation pond can be adapted to a variety of advanced application processing building and equipment, portfolio optimization. Only in this way can we ensure that the project is integrated technical indicators Habitat domestic advanced level.

## About the Author

From [www.earthtoys.com](http://www.earthtoys.com):

Science Fair Projects and the Poly Digester page give ideas about smaller projects and Anaerobic Digestion gives a bit more detail and information. Anaerobic digestion is particularly suited to wet, organic material and as such has been used for the treatment of sewage sludge.

Monsal are a specialist environmental technology business offering technology, products, processes and services for the water and waste industries. Stabilization of waste sludge to the degree necessary for disposal can be accomplished by either aerobic or anaerobic.

The primary benefits of anaerobic digestion are nutrient recycling, waste treatment, and odor control. Except in very large systems, biogas.

Anaerobic digestion is a biochemical process in which particular kinds of. Anaerobic digestion of the manure slurry releases biogas as the material.

Management practises for organic wastes include feeding them to animals, using them directly as a fertilizer, composting and anaerobic.

Anaerobic digestion. They have published a handbook and. decision support software package to. maintains current information about anaerobic.