

**PLASMA GASIFICATION NEWS UPDATES – the world progresses with new technology whilst Hong Kong seeks to go backwards
TEESSIDE (2) – MERSEYSIDE –NOTTINGHAM – NAGPUR –SCOTLAND-THAILAND-INDONESIA-PHILIPPINES**

http://www.gazettelive.co.uk/business/teesside-shows-business-energy-minister-6038432?utm_source=Alter+NRG+IR+List&utm_campaign=d474cae18c-December_1_12_2_2010&utm_medium=email&utm_term=0_68202c0768-d474cae18c

Teesside shows Business and Energy Minister its drive and ambition

17 Sep 2013 10:40

Business and Energy Minister Michael Fallon MP toured Air Products' new energy-from-waste plant at Billingham on part of the Tees Valley Enterprise Zone



Tory Government Minister for Business and Energy Michael Fallon, centre, with Falck's Neil Rennie, right, and Alex Dawson of Energi Coast
Ian McIntyre

Business and Energy Minister Michael Fallon MP has seen first hand how the area is capitalising on new opportunities.

During his visit to Teesside - hosted by Tees Valley Unlimited - Mr Fallon toured the UK's largest advanced gasification energy-from-waste plant and a leading safety training facility, as well as meeting representatives from the renewable technology sector and business leaders.

"It has been very encouraging to witness first-hand the economic progress within Tees Valley and how companies in the area are at the forefront of emerging technologies and markets," he said.

"What I have seen is a clear sign that when Government and business work in partnership, Tees Valley firms have the ambition, talent and ability to succeed."

Mr Fallon toured Air Products' new energy-from-waste plant at Billingham on part of the Tees Valley Enterprise Zone

The facility, which involves a £300m investment, will provide enough reliable, controllable and renewable electricity to power the equivalent of up to 50,000 homes. It has created around 700 jobs during its construction and there will be 50 permanent positions once it enters commercial operation, expected next year.

It will divert up to 350,000 metric tons of non-recyclable waste from landfill per year helping to meet the UK's waste diversion targets, as well contributing to the UK's renewable energy targets.

He also visited Falck Safety Services, based at Haverton Hill, which offers training for sectors including the offshore and renewable energy industries.

Stephen Catchpole, TVU managing director, said: "Hosting a visit to Tees Valley by the Business and Energy Minister has allowed us to showcase the type of internationally-renowned, innovative and ambitious companies that we are attracting to our Enterprise Zone.

"We also were able to demonstrate how the area is taking advantage of opportunities from emerging sectors, how activities that will create a high value, low carbon economy are being co-ordinated and how we are working with a range of partners and stakeholders to create a diverse economic base."

Damian Meadows, Air Products' European asset manager, said: "We were delighted that the Minister accepted an invitation to tour our site and see how our facility will use the most advanced gasification technology in the world to generate renewable power."

Colin Leyden, managing director of Falck Safety Services, said: "We were delighted to showcase the strength of our position in our marketplace and the quality of our training assets and expert staff to the Minister."

Alex Dawson, chairman of Energi Coast who also met the Minister, added: "The visit afforded us the opportunity to further raise awareness of the investment made by the integrated supply chain that operates out of the region and how the North-east has the skills, innovation and technology to support offshore renewables developments in both domestic and international waters."

[http://www.thenorthernecho.co.uk/business/spotlighton/10653594.Where there s muck there s gas /](http://www.thenorthernecho.co.uk/business/spotlighton/10653594.Where_there_s_muck_there_s_gas_/)

Where there's muck there's gas . . .



1:53pm Wednesday 4th September 2013 in [Business: Spotlight On](#) By Steven Hugill



ON THE MOVE:

The gasifier arrives on Teesside at Teesport before being transported to Seal Sands

A pioneering waste-to-energy plant is slowly making an impression upon Teesside's skyline, as Air Products continues its work on an advanced gasification plant. Deputy Business Editor Steven Hugill spoke to the man overseeing the plans to find out what it will mean for the region

IT looks like the product of Thunderbirds creator Gerry Anderson's imagination. Pipework crawls along the road, the trailer's tyres keeping the precious load perfectly steady.

The load, known as a gasifier, has been shipped from Malaysia. It dwarfs terraced houses and their residents on its way to becoming the centrepiece of a [Teesside](#) waste to- energy plant that its owners hope will leave competitors firmly in its shadow.

The advanced gasification plant, built by US firm Air Products, in [Billingham](#), near Stockton, will be one of the largest of its kind in the world.

It is the UK's first energy-from-waste power station to use plasma technology, which generates energy by burning domestic and commercial waste destined for landfill.

Bosses say it will take care of up to 350,000 tonnes of local waste every year, providing enough electricity to power about 50,000 homes, and they have plans to build a second plant on nearby land.

But it is not just North-East waste that the company has its eyes on – it is also assembling a 50-strong team from the region, including engineering and maintenance workers, to run the operation. Built on [Tees Valley](#) enterprise zone land, the development has also supported about 700 North-East construction jobs, including a £3m contract for Middlesbrough-based Redhall Engineering to make and install pipework.

While it still looks like a building site, its metalwork and piping in various stages of completion, bosses say they hope the factory will start production next summer.

A world away from the dust and dirt, in the company's smart Wynyard office, Andrew Connolly, Air Products' Tees Valley facility manager, said: "This is an incredibly exciting development for us and when I was asked to lead the project I had no hesitation at all.

"You only have to look at how the skyline is changing out there to see what is happening and what this will mean.

"This is bringing value to the community by hiring people to work at the plant, supporting construction jobs during the build, and providing work through its constant maintenance.

"Everything is going well, we are on schedule, and have already started bringing the team together who will play an important part as we move towards the final stages and get ready for operation.

"The interviews for the remaining posts are taking place this week and we will be looking for a number of people to fill positions like technical operators and engineers to help push us forward.

"Around springtime we will start the commissioning and bit by bit start to get up to operation."

Mr Connolly has worked across the world on Air Products' projects, overseeing new plants in Holland in the 1990s, before moving to California to become the company's Western America maintenance manager, and Houston, where he moved in 2009 to look after the company's Houston area plant, distribution and operations.

Born in Colchester, Essex, his travelling has now brought him to Darlington, and he says the draw of the North-East was also a big pull for Air Products.

The mechanical engineering graduate said: "The area was absolutely key for us, we have been working in Teesside for a number of years and know the importance of maintaining and supporting a strong local company.



Andrew Connolly, of Air Products

"We previously had a hydrogen plant at Wilton, near [Redcar](#), and former ICI factories in Billingham, so we know the area well and have a history here.

“We understand the capabilities of the workforce here and now we need to harness it again for this development, which is on an ideal site.

“But we also chose this area because of its historical links, availability of industrial land, good access to electricity networks and the National Grid, and excellent road links.

“We have also received terrific support from the local infrastructure and the attitude from everyone has been a positive one, from local people to the Government agencies, Stockton Borough Council and Tees Valley Unlimited local enterprise partnership.”

The plant is the spearhead of a proliferation of waste-to-energy factories that are set to create more North-East jobs and pump millions of pounds into the local economy.

The £8m Emerald Biogas plant, in [Newton Aycliffe](#), County Durham, will start converting food waste into energy later this year, creating eight jobs, while Earthly Energy now has permission to build a second plant at Wilton, with work already started on an anaerobic digestion plant in Middlesbrough.



Teeside-based Scott Brothers Group, alongside Devon company 02N, wants to create the UK's biggest facility of its kind, the £75m Billingham Energy gasifier, on the old ICI Billingham site at Haverton Hill, with Sita UK and Semcorp UK readying themselves to start a £1.2bn deal to turn more than 430,000 tonnes of Merseyside household waste into energy every year at Wilton.

Mr Connolly said the step was an obvious one, adding: “This isn’t something that has suddenly become fashionable, here we have something that can be used instead of existing and overused energy resources.

“There are big opportunities in this market and perfectly viable and valuable energy sources that mean we are not burning oil and gas.”

And while the skyline may be changing, and the plant moving ever closer to operations, Mr Connolly says he is just getting into one of the most exciting parts of his role that will really lay the foundations.

He said: “I love interviewing people and being able to create jobs, which a lot of people don’t have the opportunity to do, is something that I enjoy and take a lot of satisfaction from.

“Just look at what we are building; money is coming into the community, there are new posts for workers, and people have the chance to progress their careers.

“A big part of what makes this project is the people, and the human capital is just as important as the physical work itself.”

Stephen Catchpole, Tees Valley Unlimited managing director, said the plant was a major coup for the North-East.



An aerial shot of Air Products' new Teesside plant. The gasifier is in the top right hand corner

He said: "I was fortunate to visit the site recently and was impressed to see how well it is progressing.

"Looking at plans and artist's impressions is one thing, but to experience the sheer size and scale of the equipment being installed on the site is quite breathtaking.

"The site was buzzing with construction workers and representatives from numerous support services and the team at Air Products said their initial recruitment process has been successful using the enthusiasm and support from the local supply chain and its skills and expertise.

"There cannot be many projects of this size under construction anywhere else in the UK.

"Tees Valley is once again showing how well we do large-scale development, how we help the country in terms of energy production, and how we lead the way in the advancement of a low carbon agenda using new technology.

"Renewable energy is an exciting opportunity for Tees Valley.

"It fits with our green agenda offering jobs and investment in the immediate term and could in the future help our existing process sector in terms of power and feedstock availability.

"It is encouraging to see traditional engineering skills being at the heart of a brand new reinvention of the Tees Valley area."

http://www.rebnews.com/scrap-ex/waste_to_energy/2012/waste2tricity_announce_first_uk_project.html

WASTE2TRICITY ANNOUNCE FIRST UK PROJECT

by Paul Sanderson



A 10.2MW gasification facility has been announced as Waste2Tricity's first UK project.

The company plans to situate the plant at Bilsthorpe Industrial Park, Nottinghamshire, which is the site of the old Bilsthorpe Colliery.

It will be working with the owner of the land Peel Environmental, along with engineering associates AMEC and Foster Wheeler.

In a statement, Waste2Tricity said: "Our research has shown an abundance of available waste feedstock sources in the local region, meaning the fuel for this power station will be locally derived and negate the need to transport material over long distances. This is beneficial from both a cost and carbon emissions reduction point of view.

"The Bilsthorpe project is based on the Waste2Tricity technology template. This involves using waste derived feedstock to generate synthesis gas (syngas) through plasma gasification.

"This syngas will then be passed through various clean-up processes before exporting 10.2MW of electricity to the national grid from internal combustion engines. This template is an alternative to more traditional energy from waste ventures such as incineration.

"Also, in line with the Waste2Tricity technology template, the Bilsthorpe project is being developed to be fuel cell ready, with plans in place to pilot around 1MW of AFC Energy's Alkaline Fuel Cells on the site once they have reached commerciality.

"This process will involve the production of hydrogen from syngas, which will then be used to generate highly efficient (above 55 per cent) low carbon electricity. **The fuel cell model will be deployed in the future by Waste2Tricity, replacing the internal combustion engines in further projects.** This will be a game-changing power station template in the energy from waste sector."

Nagpur company to set up hazardous waste treatment plant at Dharbandora

http://articles.timesofindia.indiatimes.com/2013-07-06/goa/40406401_1_goa-industrial-development-corporation-state-pollution-control-board-gidc?utm_source=Alter+NRG+IR+List&utm_campaign=1ced4435d4-December_1_12_2_2010&utm_medium=email&utm_term=0_68202c0768-1ced4435d4-

PANAJI: The Industrial waste management association of Goa (IWMA) has selected Nagpur-based SMS Envorcare private limited to set up a hazardous waste treatment plant (HWTP) in Dharbandora and is waiting for the state government to transfer the land.

The IWMA, a body representing industries, has been given the responsibility to develop the plant in coordination with Goa industrial development corporation (GIDC).

The association has written to Goa industrial development corporation (GIDC) and requested to expedite the process of drafting a suitable lease deed for transferring the land to the association as soon as possible so that the association can begin the process of creating the facility at the earliest. GIDC has forwarded the file to the state government for final drafting of the deed.

The plant would be set up in 1,07,000 sq m area. There are about 160 industries that generate industrial hazardous waste in the range of 3,500-4,000 metric tonnes per year.

Speaking to TOI, IWMA president Joseph D'Souza said that SMS Envorcare private limited company has been in the business over the last six years and they have advanced technology in terms of incineration. "This company uses **plasma gasification** technology for incineration," he added.

The association is in the process of completing all paper work required for setting of the HWTP at Dharbandora. "The work is moving parallel with the government procedure and in one or two months all work would be hopefully completed," D'Souza said, adding that the time-frame to complete the detailed project report is three months and then the cost of the project will also become clear.

The project was granted environmental clearance in 2008 but it languished due to opposition from locals. The Union ministry of environment and forest (MOEF) had also given a grant of 2 crore for the project and the Goa state pollution control board (GSPCB) had given its clearance.

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The power of plasma

Scotland is set to enter the world of waste gasification, says **Richard Higgins**.

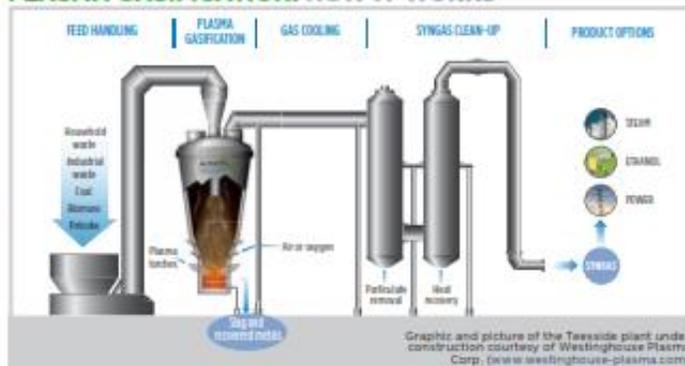
CKD GALBRAITH has recently received its first instruction to acquire a site for an energy-from-waste facility in Scotland. The client is an international concern seeking to develop three large plants that will use plasma gasification technology.

The process of converting organic matter into synthetic gas is commercially proven, with plants operating in Japan and India, but plasma gasification is a new technology for the UK. One site is currently being built by Air Products on Teesside in north-east England.

Our client wants to develop up to 10 acres, taking up to 330,000 tonnes of mixed waste a year. This will be converted into a synthetic gas which will be used to drive a gas-fired turbine at the site and generate about 34MWh a year to the grid.

Little waste is produced. It amounts to an inert slag which can be used as an aggregate

PLASMA GASIFICATION: HOW IT WORKS



in the building and ceramic industries.

Plasma gasification is not incineration. Rather, it is the treatment of waste using very high temperatures, and the total amount of emissions in a year are approximately the same as a normal garden barbecue.

There are clear benefits to local communities and Scotland as a whole in using waste which would normally be sent to landfill to generate clean electricity. Gasification produces useful waste by-products that

do not need to be landfilled. The plant would help Scotland to fulfil its zero waste policies, and it is an exciting opportunity for us to be involved in.



Richard Higgins, a partner at CKD Galbraith, is based in the firm's Stirling office.

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Second Plasma Gasification Plant for Teesside Following Government Deal

12 April 2013 <http://www.waste-management-world.com/articles/2013/04/plasma-gasification-waste-to-energy-air-products-teesside-uk-government.html>

By Ben Messenger

Managing Editor of Waste Management World magazine

Air Products is to build a second 350,000 tonne per year waste to energy plasma gasification facility on Teesside following the signing of a 20 year power purchase agreement with the UK government's Cabinet Office.

According to the government the deal is worth 2% of government's energy spend and is expected to deliver £84 million in savings over the life of the contract through a fixed agreement that will provide stability in what the public sector pays for energy.

As part of the deal, the government said that Air Products expects to invest an amount similar to that of its first plant, around £300 million, to build a second waste to energy facility in Tees Valley, Teesside to supply the agreed 37 MW.

The government said that the agreement means that through its Government Procurement Service (GPS) it will buy a portion of its energy directly from a UK-based generator at a low fixed price, rather than buying entirely through short-term wholesale markets which are subject to unpredictable price fluctuations.

New model for government procurement

"This is the beginning of a pioneering approach to how government uses its collective buying power and long term demand to buy energy," said the Minister for the Cabinet Office, Francis Maude.

"Not only have we secured £84 million of savings for taxpayers by signing a new, low cost energy deal with Air Products, but we're also helping the UK compete in the global race by investing in growth and creating hundreds of new jobs through the construction of a new 'energy from waste' plant," he added.

Lisa Jordan, Air Products' business manager for Bio-Energy Europe, commented: "By buying the electricity we produce, the Cabinet Office will help Air Products divert up to 350,000 tonnes of non-recyclable waste from landfill every year, which we will turn into reliable, controllable, renewable energy."

According to the Cabinet Office said that the new approach will lead to more engagement with the energy industry to assess opportunities for further energy procurements over the next five years.

The government claimed that this could mean a significant increase in generating capacity in the UK and help drive down bills for everyone through increased competition.

Linked In Poll – Is Waste Gasification Coming of Age?

Read More

Is Waste Gasification Finally Coming of Age?

Spurred by government incentives and a stable regulatory environment, Air Products has begun construction of a 50 MW plasma gasification facility in Teesside. With the company already planning a second such plant at the site - as well as others around the country - is the waste industry entering the age of gasification?

13.6 MW Plasma Gasification Waste Project to Demo Fuel Cells

London, UK based Waste2Tricity, which specialises in advancing the use of plasma gasification technology to treat waste, as well as the integration of fuel cells to generate electricity is to start a Concept Design Study for the development of an advanced waste to energy plant.

We are the EPCm contractor for Air Products PLC's energy-from-waste facility on Teesside. This ground-breaking facility is the world's largest plasma gasification project and the first of its kind in the UK. Construction is now in full swing, with major equipment deliveries and installation for the power generation section almost complete.



"The installation of the gasifier was the culmination of an integrated effort by all our construction contractors on site. We had to use precision surveying and custom-made shims to allow the gasifier vessel to be installed to the required tolerances. The professional approach by everyone involved made this happen safely and on schedule."

Barry McConnell
Resident Site Manager, Foster Wheeler



Left: Main gasifier vessel
Above right: Lifting of gasifier into position at site



The heart of the process is the plasma gasifier that will daily convert 950 tonnes of municipal solid waste to syngas, which will then be consumed in the power generation section. In May, the site took delivery of the main gasifier vessel which was transported carefully from the Tees River to site along three miles of narrow local roads.

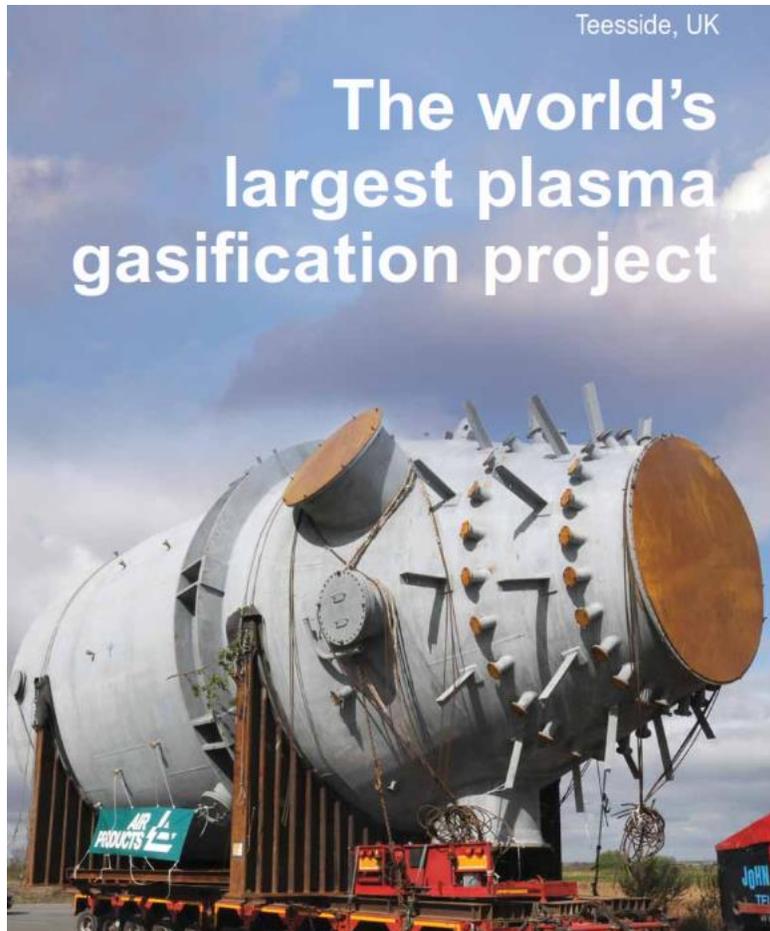
To celebrate the gasifier installation and for the achievement of 250,000 hours worked on site safely with no recordable incidents, Foster Wheeler and Air Products senior management teams took the opportunity to host a safety celebration breakfast at site to thank the workforce. The celebration included HSE presentations and awards for the site workers who have demonstrated excellent commitment to our Zero Harm philosophy.

Once operational in 2014, the plant is planned to generate 50 MW of power to provide renewable energy for up to 50,000 homes.

We are also pleased to be working with Air Products on its plans for building a second energy-from-waste plant which is subject to relevant approvals later this year.

We are also assisting Air Products in generating a mechanical integrity programme for the site. Our operations and maintenance team is gathering engineering data to enable Air Products to implement this programme, covering pressurised systems that are new to Air Products.

Images: Courtesy of Air Products



Waste2Tricity announces international expansion

15 Apr 2013 | By [Stuart Radnedge](#)

<http://www.gasworld.com/news/regions/west-europe/wate2tricity-announces-international-expansion/2002053.article>

Waste2Tricity (W2T) is pleased to announce international expansion with the launch of its wholly owned subsidiary Waste2Tricity International (**Thailand**) Ltd; and the opening of its offices in the Rajchathewi district of Bangkok.

W2T hopes to take advantage of the subsidies that exist in the Thai region and the natural opportunities that exist in its expanding economy that has inherent issues with waste management and a shortage of power.

Waste2Tricity International (Thailand) Ltd will be seeking a number of opportunities to deploy the Alter NRG Westinghouse plasma technology in multiple locations; and is in advanced discussions with several potential partners. There has also been substantial interest in the future deployment of the AFC Energy fuel cell which will significantly enhance return on capital employed.

Waste2Tricity International (Thailand) Ltd is headed up by Piangkwan (PK) Thummukgool, a graduate engineer from Leeds University and a Thai national with extensive knowledge of both the Westinghouse plasma system and AFC Energy fuel cells. W2T is currently in the process of raising pre-IPO funding of up to £1 million with the intention of an AIM listing later in 2013; subject to market conditions.

Peter Jones, Chairman of W2T says, “Thailand presents an excellent opportunity for the immediate deployment of the **Alter NRG technology**. This will be in conjunction with conventional power island technologies similar to the Air Products Tees Valley programme, which is currently being built in the UK. We liken the opportunities for development of this technology in the Thai market, as being at least on a par with the UK market. With the future prospect of the AFC Energy fuel cell technology achieving commercial roll out by 2016, the prospects for investors in Waste2Tricity are very exciting.”

About Waste2Tricity

Waste2Tricity is a structured solutions provider for the waste to energy sector. Its shareholders include Ervington Investments (UBO **Roman Abramovich**), Age of Reason Foundation and Eturab, all of whom are substantial shareholders in AFC Energy and/or Alter NRG Westinghouse and represent approx. 30% of each company. For more information, visit Waste2Tricity at www.waste2tricity.com

INDONESIA – PERTAMINA - SOLENA GAS PLASMA

Date	March 1, 2013
Publication	Tribunnews.com
Readership	2.000.000
AVE	2.248.600
Headline	Pertamina to Build Waste Power Station

- PT Pertamina and PT Godang Tua Jaya have agreed to cooperate with Solena Fuels Corporation as the technology provider partner in Waste Power Station (PLTSA) project in Bantargebang integrated disposal place, Bekasi. The focus of the cooperation is making the details of feasibility study to utilize city waste into a renewable energy in the form of gasification plasma. The energy is believed could create 120 megawatt (MW) of electricity by using 2,000 tons of waste/day. The PLTSA project will need around US\$300 million of investment and will start produce electricity starting 2016. Pertamina Director Karen Agustiawan said that through the cooperation, Pertamina as the company that concerned on environment problems could realize its participation as “Friend of The Earth” by utilizing an environment-friendly energy resource optimally.

Pertamina Bangun Pembangkit Listrik Tenaga Sampah

tribunnews.com - Jumat, 1 Maret 2013 13:50 WIB



SAMPAH TERDAMPAR DI PANTAI TANAH TUMBUH - Sejumlah anak kecil mencari sampah plastik di antara ceoran sampah yang terdampar di kawasan pantai Tanah Tumbuh, Makassar, Kamis (28/2/13). Sampah karman dan anjungan pantai losari tersebut akibat pembuangan sampah sembarangan dan masyarakat sehingga dikhawatirkan dapat memberi citra buruk. (TRIBUN TIMURISANOVRA JR)

<http://www.businessmirror.com.ph/index.php/en/news/top-news/19980-450-million-waste-treatment-plant-pushed>

\$450-million waste treatment plant pushed

Published on Thursday, 26 September 2013 21:34

Written by Joel p. Mapiles

CITY OF SAN FERNANDO—A US-based firm plans to invest more than \$450 million for the establishment of a Provincial Plasma Waste-Treatment Facility for the processing and disposal of the municipal and industrial solid waste of Pampanga.

The **plasma technology gasifies** materials like coal and industrial waste at 5,000°C to 7,000°C, then converts them to electricity. For every metric ton of garbage, about 800 kilowatts up to 1 megawatt of electricity can be produced.

The plan will be pursued through a joint-venture agreement between the provincial government and Quantum International Group Inc.

The \$450 million will finance the construction of the plant, the purchase, importation and setup of all plasma equipment and the compensation for the technology required in the plasma processing.

Merlinda Cantero, vice president of Quantum Philippines Property Holdings and Management Inc., said the proposed plasma-gasification plant would need at least 2,000 metric tons (MT) of municipal and industrial wastes daily and is expected to produce power supply not only in the province but also in some parts of Central Luzon.

Cantero said they were willing to discuss the proposal and investment with the concerned local officials and Gov. Lilia G. Pineda.

Cantero said the plant has the capacity to process and treat wastes that would help address the concern over the growing volume of municipal and industrial solid wastes in Pampanga and nearby provinces.

She identified the chief executive officer of the company as Al Johnson. It was learned that they were expecting to put up at least 10 plasma-gasification plants and close the deals —mostly with local government officials in their target provinces—within two years.

Cantero said the US-based firm led by Johnson is hoping that the local government units would be able to see the value of the technology, which could address not only garbage-disposal problems but also power-supply concerns. She said the processing of 2,000 MT of wastes could generate 2,000 megawatts. But she said the local governments could choose what products they want to produce from the plasma-gasification plant. The plant could be used to produce not only electricity but also gasoline, kerosene and biofuels. She said Quantum is open to partnership arrangements with local companies. But the US-based firm could also proceed with the project alone as it has the technical and financial capacity.

Cantero quoted Johnson as having said the only thing they require from the local government unit is their garbage, as they need a long-term contract for a minimum of 2,000 tons per day.

“Quantum needs to sell electricity at market rates. We believe the more electricity we generate from the plasma facilities, prices will come down eventually,” she added.