Biomass

Giant King Grass Photograph: Viaspace

Developer eyes giant grass for Thai biomass plant fuel

US-based Viaspace Green Energy has signed a memorandum of understanding with Thailand's Seema Energy to grow its proprietary Giant King Grass for the Thai company's proposed 90MW biomass plant.

Giant King Grass – which has similar characteristics to sugar cane and reaches four-metres-tall – is the highest-yielding biomass crop in the world, the company claims.

The Seema Energy plant , in the country's northeast, is expected to come into operation in 2014. Under the agreement, Viaspace would grow up to 930,000 tonnes of Giant King Grass a year to fuel the 90MW facility, creating 2,000 jobs for local farmers.

Seema director Pongchat Limvichit says the project "paves the way for Thailand to access a domestically developed and grown energy source, and provide an energy hedge against increasingly volatile conventional commodities such as gas and coal.

“This is especially important for Thailand, which faces difficulties in developing conventional energy projects – in particular coal-fired power plants," he adds.

The joint venture will see a trial plot cultivated, followed by a two-hectare testing facility to analyse Giant King Grass grown in the tropical Thai climate.

Viaspace is confident the crop will grow well in Thailand after favourable yields at a 110 hectare plot in China.

More than a million Giant King Grass seedlings planted in Guangdong Province in October 2008 are now two-metre-tall plants.

The company says it may do better in Thailand, where irrigation can lead to a full 12-month growing season.

The Thai government has shown itself well disposed towards biomass and the potential jobs that accompany the growing of crops for the energy source.

The government has set a target of 3.7GW of biomass capacity by 2022. Only 1.7GW has been awarded so far, with only a fraction of this capacity actually in operation.

Its cabinet has approved a move to a new feed-in tariff (FIT) regime with a priority to promote biomass generation.

Carl Kukkonen, chief executive of **Viaspace**, expects Thailand's new FIT to support energy crops such as Giant King Grass.

“Biomass provides jobs, and instead of sending money overseas to import coal or natural gas they would be spending it internally on their farmers,” Kukkonen says. “We expect energy crops will be treated well in what we expect to be aggressive policy revisions,” he adds.

Most of Thailand’s biomass plants are fed on agricultural waste, which is subject to seasonal feedstock-price fluctuations. These waste-fuelled power plants sometimes run seven months a year, rather than 12. “Your economics go to hell if you can’t run all of the time,” Kukkonen says.

“Since feedstock costs are generally 70% of your operating costs, or more, if the price goes up you’re not making money,” he says.

“The government is beginning to understand that. It will continue to promote agriculture waste [as a feedstock] but recognising the value of dedicated energy crops, and perhaps even giving additional financial support,” he predicts.

Kukkonen estimates power generated from King Grass-derived pellets is on average 20% more expensive than coal in the 35MW range, but is significantly cheaper than solar. He claims the latter source “will certainly give Thailand electricity, but the government looks at it and says ‘solar doesn’t create jobs or local income'”.

There is a substantial export market for biomass pellets. Currently, European power stations burn 16 million tonnes of pellets a year to meet their emissions-reduction commitments, paying $175 per tonne for pellets.

Viaspace in February 2011 formed a joint venture with General Biofuels of the US, under which the two companies agreed to explore the development of a large Giant King Grass plantation to feed pellet production for export to the European market.

Note: Amendment replaces final paragraph of earlier version of article, gives details of joint venture.

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