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PRESS RELEASE

WADE REPORT ON GLOBAL BAGASSE COGENERATION:

HIGH EFFICIENCY BAGASSE COGENERATION CAN MEET UP TO 25% OF NATIONAL DOWER DEMAND IN CANE PRODUCING COUNTRIES

*** BAGASSE COGENERATION – A HIGH EFFICIENCY FORM OF RENEWABLE HEAT AND POWER GENERATION**

*** GREATLY UNDER-UTILISED ENERGY OPPORTUNITY**

*** KEY TO ACHIEVING POTENTIAL IS PROVIDING FAIR VALUE ACCESS TO THE GRID**

According to a new report from WADE[1], bagasse-based cogeneration[2] could deliver up to 25% of current power demand requirements in the world's main cane producing countries. The overall potential share in the world's major developing country producers exceeds 7%. WADE estimates that no more than 15% of this potential has yet been realised.

The critical condition for the full exploitation of this major opportunity is that mill owners should be able to secure competitive rates for the electricity they supply to the grid or to other power consumers. Currently, these buyback rates only rarely reflect the fair value of the electricity to the system – disincentivising producers and preventing high efficiency cogeneration plants from being optimally sized to meet heat demand.

[1] *Bagasse Cogeneration – Global Review and Potential.* Available for download from www.localpower.org

[2] Bagasse cogeneration describes the use of fibrous sugarcane waste – bagasse – to cogenerate heat and electricity at high efficiency in sugar mills.

The WADE report indicates that there is abundant opportunity for the wider use of bagasse-based cogeneration in sugarcane-producing countries. Yet this potential remains largely unexploited. It is especially great in the world's main cane producing countries: Brazil, India, Thailand, Pakistan, Mexico, Cuba, Colombia and The Philippines. The table below lists the world's major developing country cane producers (excluding China) that together account for 70% of global cane production. Bagasse cogeneration could account for 25% of Cuba's demand, and over 7% of the average of this group of countries.

BAGASSE COGENERATION - MARKET POTENTIAL

	Sugarcane production (000 tonnes / year)	Share of global cane production (%)	Potential for electricity production (GWh)	Present National electricity demand (TWh)	Bagasse cogeneration potential as percentage of electricity demand
Assuming that:			1 tonne cane produces 100kWh of electricity	2001 data	
Brazil	386,232	28.60	38,623	335.9	**11.50**
India	290,000	21.48	29,000	497.2	**5.83**
Thailand	74,071	5.49	7,407	90.91	**8.15**
Pakistan	52,055	3.86	5,206	62.27	**8.36**
Mexico	45,126	3.34	4,513	186.7	**2.42**
Colombia	36,600	2.71	3,660	39.81	**9.19**
Cuba	34,700	2.57	3,470	13.38	**25.93**
Philippines	25,835	1.91	2,584	42.04	**6.15**
TOTAL	**944,621**	**69.96**	**94,462**	**1,268.21**	**7.45**

The benefits arising from the fulfilment of this potential would be extensive:

- Near-zero fuel costs (paid in local currency), commercial use of a waste product and increased fuel efficiency leading to an increase in the economic viability of sugar mills
- More secure, diverse, reliable and widespread supply of electricity for local consumers
- Minimal transmission and distribution (T&D) costs, and reduced network losses, as generation is located near important loads
- Greater employment for local populations.
- Lower emissions of CO_2 and other gases than from conventional fossil-fuel generation

The economic development potential of bagasse cogeneration should not be under-estimated. Most cane producing countries are poor or extremely poor, with high unemployment and low rates of access to electricity supplies. In addition, many

cane-producing countries are heavy users of coal or oil in the power generation sectors. Use of bagasse to generate electricity and heat can have a significant impact on emissions reduction.

For those countries, notably Brazil, that produce ethanol from sugarcane as a petroleum substitute, greater mill efficiency can reduce ethanol costs and so accelerate the rate of import substitution at a time when international oil prices are high.

The output of electricity from bagasse cogeneration plants is fundamentally dependent on the prevailing electricity market rules – inadequate buyback prices paid to mill owners by the utility company create a substantial disincentive to size cogeneration plants to meet mill heat demand. Conversely, higher rates can incentivise owners to upgrade their energy facilities to enable maximum on-site efficiency. This is the key to enabling the potential for bagasse-based cogeneration to be achieved.

This issue is now starting to be addressed in many countries, including Brazil and parts of India, where the introduction of biomass feed-in tariffs are ensuring that the external benefits of bagasse cogeneration are being recognised by markets. Analysis by WADE Chairman, Tom Casten, indicates that, in India, realisation of the 5,000 MWe potential for bagasse cogeneration could generate large savings in terms of both CO_2 (38 million tonnes per year) and infrastructure (US$10.8 billion). The most dramatic finding is that the cost burden to India will be significantly reduced, to the tune of almost a billion dollars a year, by incentivising sugar mills, through a buyback rate of 7 USc / kWh, to maximise the use of cogeneration.

WADE Recommendations

In order for bagasse cogeneration to achieve the potential outlined in this report, it is important that certain key measures are brought forward at the national and international level. Building on experiences in India, Brazil and elsewhere, WADE recommends that:

1. Planning and regulatory paths are cleared for the development of enhanced cogeneration facilities in sugar mills. This includes ensuring fair and easy access to the grid for both large and small generators as well as guaranteeing that incumbent generators and utilities do not hinder these processes.
2. Financial and tax incentives, in line with other incentives for renewable energy, are provided to boost the initial development of cogeneration facilities in sugar mills. This would allow generators to invest in the necessary equipment and infrastructure to maximise their electricity output

whilst making the most effective use of heat and electricity generated onsite. Financial incentives also include the provision, where possible, of renewable energy feed-in tariffs that reflect the benefits of onsite production and biomass combustion.

3. Where financial and tax incentives are currently unavailable, the CDM should be promoted and developed. The CDM could provide the incentive required for the upgrade or installation of cogeneration equipment in mills in a cost-effective manner whilst facilitating the meeting of Kyoto Protocol commitments by Annex 1 parties.
4. Further research is carried out into bagasse gasification to fully explore its potential, so that the best technologies can continue to be promoted and installed to reap the maximum benefits of bagasse cogeneration.

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