

# ASX

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**Wasabi Energy Limited** 

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## **Announcement**

16 August 2012

#### Wasabi Energy extends its African operations through AAP Carbon

- Wasabi Energy increases its stake to 62.5% of AAP Carbon
- Kalina Cycle® license granted to AAP Carbon for Sub Saharan Africa
- Unique chemical and thermal energy conversion offering addresses a large market opportunity

#### Overview

Wasabi Energy (ASX: WAS, AIM: WAS, OTCQX: WSBLY) ("Wasabi" or the "Company") is pleased to announce that it has increased its stake in AAP Carbon Holdings Limited (AAP Carbon), a carbon asset management and engineering firm, from 25% to 62.5%. Together with Wasabi, AAP Carbon will be able to offer a powerful combination of chemical and thermal energy conversion to electricity for Sub Saharan Africa.

With real growth at 5% of GDP (World Bank, 2011), Sub Saharan Africa is one of the world's fastest growing regions. The provision of reliable power is a key component to ensure ongoing economic growth. However, energy issues are affecting the levels of industrial activity and there is an urgent need to develop energy conversion of waste heat to power for industrial applications.

Under the terms of the transaction, AAP Carbon will be granted a Kalina Cycle® license for Sub Saharan Africa which, together with its existing chemical energy conversion business, will deliver a unique offering to the African market. It is the intention of AAP Carbon to raise additional equity to fund its business growth either through a public listing or through the introduction of new equity partners.

As announced in March 2012 Wasabi purchased 25% of AAP Carbon, a group that engineers, builds, accredits and invests in clean energy projects that generate carbon credits under the Clean Development Mechanism (CDM) of the Kyoto Protocol. AAP Carbon's focus has been the energy intensive ferrochrome industry where it harvests the off-gases from furnaces for conversion into electricity by using gas-fuel reciprocating engines.

AAP Carbon's flagship cogeneration plant is the 20 MW International Ferro Metals power plant where carbon monoxide-rich waste gas is harnessed to produce in excess of 160,000,000 kWh per annum of low emission electricity for the International Ferro Metal's own use. Wasabi Energy has been in discussions with AAP Carbon regarding the installation of a Kalina Cycle® power plant that would utilise the waste heat from the reciprocating engines to produce up to 20% of additional electricity.

The International Ferro Metals project is being registered for Certified Emission Reduction credits (CER's) under the UNFCCC Clean Development Mechanism Framework. AAP Carbon will hold 25% of the project's CERs and manage the project on behalf of International Ferro Metals for a 10 year period. These CERs are expected to provide an annual revenue stream alongside other management fees earned by AAP Carbon.

In the year ended 30 June 2012, AAP Carbon reported turnover of AU\$ 511,978 and an after tax loss of AU \$519,541. AAP Carbon's net assets as at 30 June 2012 were AUD\$1.5m. As at 31 July 2012, the last practicable date prior to this announcement, AAP Carbon had net cash of AUD\$148,000.

#### **Transaction structure**

Under the terms of the transaction, AAP Carbon will issue 15.2 million new shares and 4.7 million warrants exercisable at AUD\$0.10 to Wasabi as consideration for an exclusive Kalina Cycle® license (excluding the cement and lime industry which has been granted to FLSmidth) and Wasabi's business development activities in Sub Saharan Africa which include the engineering study for two Kalina Cycle® power plants at ArcelorMittal's Vanderbijlpark steel works and several other projects in South Africa and Kenya.

#### **AAP Carbon Outlook and Opportunity**

AAP Carbon's aim is to become a power producer that develops, builds, owns and operates power plants in the industrial and renewable heat sectors in Sub Saharan Africa.

AAP Carbon has continued to develop its pipeline of opportunities including a feasibility study for a 28 MW chemical energy conversion plant for Hernic Ferrochrome (a Mitsubishi Corporation company) and advanced discussions with Mogale Alloys (a Ruukki company) and TATA Steel (a TATA Group company) amongst others. Each of these potential power plants creates an opportunity to add a Kalina Cycle® power plant to generate more power by utilising the exhaust gases.

#### **Sub Saharan Market Overview**

According to a recent study by the World Bank's African Energy Unit (AFTEG) of the 54 African nations, 25 face an energy crisis and experts estimate that unless stronger commitments are put in place to reverse current trends, half of the population of Sub Saharan Africa will be without electricity by 2030. A UN Environmental Program estimates that within Africa the power sector needs to install 7,000 MW of new power generation per annum.

Some of the issues facing Sub Saharan Africa, cited by the AFTEG, are poor reliability of the system with power outages estimated on average as 56 days per year translating into an estimated loss of 6% to 20% of revenue. The cost of electricity is increasing and is higher than in the developed world. Within Africa the average tariff is US\$0.13 per kilowatt hour compared to US\$0.04 to US\$0.08 in developed countries. This is largely due to the use of expensive diesel generators as primary and back-up power supply.

South Africa has ongoing energy shortages which are driving higher energy prices. The pressure on the existing infrastructure continues with Eskom, the major utility, appealing for urgent reductions in energy demand by 10% or some 3,000 MW to enable it to ramp up planned maintenance activities and create capacity for continued economic growth.

Demand side management is a strong feature of the energy reduction programs which encourage waste heat to power conversion.

In addition to industrial waste heat applications, the Kalina Cycle® can be utilised with heat from renewable sources such as geothermal and solar thermal using a binary power plant. Currently there is approximately 217 MW of geothermal energy produced in Africa with most coming from flash steam power plants using high temperature sources from the geothermal fields in Kenya (202 MW) and where there is also a 140 MW

geothermal plant under construction. The remainder of the geothermal power in Africa is largely coming from Ethiopia (Geothermal Energy Association, 2012).

Geothermal development in Kenya is facilitated by the Geothermal Development Corporation (GDC) which aims to generate 1,650 MW in the next six to seven years. The GDC was established in 2004 to fast-track geothermal resource development with an ultimate goal of reservoir development to support 5,000 MW of geothermal. The state-owned company conducts up-front exploration and drilling with its own geothermal drilling rigs. GDC assumes a significant portion of the risk associated with geothermal development, and is then able to open up geothermal resources to the private sector for further development.

The East African Rift System has a known potential for 10,000 to 20,000 MW of geothermal power generation and extends approximately 6,500 kilometres from the Dead Sea to Mozambique, including much of the area throughout the Democratic Republic of Congo, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, Rwanda, Tanzania, Uganda, and Zambia. The market opportunities and resource is defined for many potential applications of the Kalina Cycle® for geothermal power generation within Sub Saharan Africa.

The Sub Saharan African market offers abundant opportunities for the development of AAP Carbon with its portfolio of chemical and thermal energy conversion for both the industrial waste heat and renewable heat sectors.

#### **Executive Chairman of Wasabi Energy, Mr. John Byrne commented:**

"Wasabi Energy has been working closely with AAP Carbon since early 2012. We are impressed with the opportunities available to the group in South Africa and Sub Saharan Africa with a number of projects being well advanced.

The joining together of AAP Carbon with Wasabi Energy's business development activities provides a powerful combination of expertise, proven track record in the development and implementation of projects and a unique offering with the combination of chemical and thermal energy conversion with the use of the Kalina Cycle®.

We look forward to the growth in AAP Carbon and the development of a leading African power company.

Southern Africa is not alone in its requirement for reliable power, and the demand from around the world for the Kalina Cycle® continues to grow. We are therefore confident that through this and other licensees our growth targets will be achieved."

## For further information, please contact: Wasabi Energy Limited

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#### **About Wasabi Energy**

Wasabi Energy Limited is listed on both the Australian Securities Exchange (ASX: WAS) and the AIM market in London (AIM: WAS) as well as American Depository Receipts trading on OTCQX Market (OTCQX: WSBLY). Wasabi Energy is an emerging power producer that also invests in sustainable technologies. Its power business is based on the proprietary Kalina Cycle® power generation technology which utilises low grade, waste heat from industrial facilities or geothermal sources to produce electricity. In a typical industrial application of the Kalina Cycle® technology can increase energy efficiency in an industrial plant by up to 20%. Through its strategic investments Wasabi Energy owns a 79.2% interest in Aqua Guardian Group, the developer of the AquaArmour<sup>™</sup> a water management, conservation and algal control product. Aqua Guardian Group also has a 22.7% interest in the air, water and minerals ASX listed company CleanTeq (ASX: CLQ). Wasabi Energy also owns a 12.2% interest in Australian Renewable Fuels, a separately ASX listed company (ASX: ARW) which produces liquid biofuels from a variety of non-food grade feedstocks.

Additional information:

www.wasabienergy.com