



ASX/Media Release
14 December 2016

CHAPMANS TAKES MAJORITY 80% INTEREST IN SYN DYNAMICS

HIGHLIGHTS

- Chapmans, via subsidiary COL, has increased its equity interest in breakthrough clean-tech business Syn Dynamics Australia Pty Ltd (SDA) from 19% to a majority 80%.
- SDA is a plasma gasification waste-to-energy business that converts a wide range of hazardous and unwanted carbon-based waste materials into a high-value synthetic gas, or 'syngas'.
- SDA has entered into a highly successful development and commercialisation project with CSIRO Energy – results validate and confirm SDA's breakthrough technology.
- SDA is engaged in commercial discussions with a number of prospective large multi-plant customers in Australia and internationally.
- SDA's potential to secure large scale, long term commercial contracts for its plasma gasification waste treatment technology positions COL's investment to be highly value accretive.
- Plasma gasification is a next-generation extension of gasification, a globally proven and adopted process by which carbon based material is converted in to syngas.
- Syngas is a global commodity with a wide range of commercial uses including various forms of renewable energy and as a fuel or feedstock for chemical manufacturers.

The Directors of Chapmans Limited (ASX: CHP) (Chapmans, the Company) are pleased to provide the following update on breakthrough plasma gasification clean-tech business Syn Dynamics Australia Pty Ltd (SDA).

In July Chapmans subsidiary company, Chapmans Opportunities Limited (COL), made a strategic \$600,000 investment in SDA (ASX announcement, 18 July 2016).

SDA has developed a next-generation plasma gasification technology that converts a wide range of waste material into a high value syngas product. Unlike other brown-to-green gasification technologies, SDA's technology can convert 100% of waste material feedstock into syngas. Other competing technologies typically achieve conversion rates of 30% - 50%, operate only at mega station scale (such as power stations) due to their high energy consumption, and produce tars and toxic chemicals which limit their adoption.

SDA's patented plasma hyropyrolysis technology is designed to address the performance, efficiency and scale characteristics of existing gasification technology with the objective of optimising conversion, cost and accessibility requirements of global waste mass markets.

COL Increases Holding in SDA to 80%

COL advises that it has increased its equity interest in SDA from 19% to 80%, following the acquisition of 100% of the holding of major shareholder Ovannac Pty Ltd (Ovannac), plus the acquisition of a number of minority interests. Ovannac previously held a 39.94% interest in SDA.



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COL has secured its majority interest in SDA at a substantial valuation discount; investing \$425,000 to acquire an additional 61% interest. Combined with its initial \$600,000 investment, COL's total investment in SDA is now \$1,025,000 and gives it a shareholding of 9,882 shares of a total 12,353 shares on issue.

The remaining 20% equity interest in SDA is held by the original technology founders.

A part of COL's additional investment and increased shareholding in SDA, Chapmans executive chairman Peter Dykes has been appointed to the SDA board as a Non-executive director.

COL is delighted to have secured this increased holding in what it views as a ground breaking clean-tech opportunity. SDA is well positioned to enter the commercialisation phase, and its technology has a massive potential global market.

CSIRO Partnership - Results Confirm SDA's Breakthrough Technology

Since entering into its Agreement with COL in July, SDA has completed a significant body of supporting IP development and patent work, and has also successfully completed the first stage of a 12 month plasma-based waste gasification development and commercialisation project with CSIRO Energy.

During this first, 'Installation & Operability', stage, CSIRO successfully commissioned SDA's batch processing plant facility at its Queensland Centre for Advanced Technologies (QCAT) in Brisbane. This included installation of the plant into QCAT's gasification research facility, plus upgrading and optimisation of hardware and software, to enhance the plant's capabilities as a foundation for further development and commercialisation work.

Preliminary operating tests to demonstrate the plant's ability to generate a plasma that converts a carbon based electrode into a syngas of quantifiable composition have also been completed. This is a key aspect of confirming the plant's ability to successfully convert a wider range of waste materials.

The second project stage, 'Hazardous Waste Feedstock & Performance Characterisation', has now commenced. This consists of;

- Further commissioning tests using bituminous (thermal) coal and complete instrumentation of the plant facility, in particular installation of a state-of-the-art gas analysis system;
- Further development and analysis on the performance capabilities of the plant;
- Testing and analysis on a series of prospective customer hazardous waste feedstocks; and
- Ongoing engineering work on continuous processing plant design and modelling.

SDA and CSIRO is well-placed to continue the development of the SDA technology as part of a longer-term plan for scale up and commercialisation.

Customer Discussions for Large Scale Commercial Opportunities

Based on the continued advancement of SDA's technology and the success of its development and testing with CSIRO, SDA has progressed commercial discussions with a number of prospective large multi-plant customers in Australia and in international markets.

COL believes that the opportunity for SDA to secure large scale, long term commercial contracts for SDA's plasma gasification waste treatment technology in 2017 and beyond positions its investment in SDA to be highly value accretive – and consistent with COL's investment model.

SDA is well placed to capitalise on the significant market opportunities to solve widespread financial, environmental, and health and safety issues caused by large stockpiles and continuous production of hazardous waste materials via the commercialisation and deployment of its waste processing and conversion technology.



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About Plasma Gasification and Syn Dynamics Technology

Gasification is a process by which carbon based material is converted into a gaseous fuel, namely a mixture of carbon monoxide, hydrogen and carbon dioxide – also known as synthetic gas or syngas.

Plasma gasification is a next-generation extension of the gasification process and has undergone a surge in interest and commercial application over recent years. It uses an ionized gas (a plasma) to convert the organic matter into syngas or solid waste.

It has the advantages, relative to other gasification systems, of having no formation of tars which are detrimental to gasification systems and no toxic chemicals (such as dioxins) produced in the gas stream.

Syngas is a global commodity in its own right and represents a key building block of modern chemical industry, with a wide range of commercial uses and applications. These include electricity generation and as a liquid fuel source.

Syn Dynamics' plasma gasification technology has two compelling technical advantages;

- Its extremely high waste-to-syngas conversion rate which contributes to its cost effectiveness; and
- Its ability to treat a wide range of waste material including hazardous waste, biomass and landfill, in addition to solid hydrocarbons such as coal.

Combined, these factors open up substantial global commercial market opportunities in the corporate and government sectors, as large organisations seek new waste utilisation and storage solutions.

Initial Target Market

SDA's initial target market will be hazardous waste from oil refineries and chemical plants. This represents a large global market, as the oil refinery and chemical manufacturing industries are confronted with chronic storage, compliance, environmental and public health risks in relation to the storage and treatment of waste from refinery and processing plants.

ENDS

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About COL

Chapmans Opportunities Limited (COL) is a subsidiary of ASX-listed diversified investment company Chapmans Limited (ASX: CHP). It is an investment entity focused on making non-controlling investments in small to medium Australian companies, predominantly providing active expansion capital in the technology sector. COL plans to seek an ASX-listing in due course.

About Chapmans

Chapmans (ASX: CHP) is an ASX listed diversified investment company engaged in special situation investments across a diverse range of industries, with a focus and expertise in the mobile and advanced industrial technology sectors. It seeks to be an active strategic investor in high growth areas of the market, and to identify and work with emerging high growth companies. The Company's investment philosophy and approach are based on a unique mix of high conviction and special situation features, characterised by advisory and equity investments structured around specific events and assets for both public and large private corporates.