

ASX Release | Chapmans Limited (ASX:CHP)**SYN DYNAMICS UPDATE****24 October 2018**

The Directors of Chapmans Limited (ASX: CHP) (Chapmans, the Company) are pleased to announce details of clean-tech company Syn Dynamics Australia Pty Ltd (SDA) plans to raise \$2 million to construct its first commercial production plant for its breakthrough waste-to-energy technology.

Syn Dynamics' first commercial plant represents a major milestone in the development pathway for its next generation plasma gasification technology (Plasma Hydrous Pyrolysis, PHP), which converts a wide range of waste materials into high value syngas.

The commercial plant will be designed to treat approximately 1,000 tonnes of high value hazardous waste from the oil and gas, resources and construction industries.

Chapmans has a majority, strategic 80% interest in SDA and is delighted with the continued progress achieved by SDA since its initial investment in SDA in 2016 (ASX announcement, 18 July 2016).

SDA's waste-to-energy PHP technology has the ability to remediate almost 100% of hazardous waste feedstocks (excluding any residual metals) into non-hazardous products including syngas. This compares favourably to other competing technologies which typically achieve significantly lower conversion rates, produce tars and toxic chemicals and have exceptionally high energy consumption requirements – all of which limit their mass scale adoption.

SDA's technology has been developed over 10 years including two years of intensive testing, validation and improvement by energy and gasification experts from Commonwealth Scientific and Industrial Research Organization (CSIRO) and Queensland University of Technology (QUT).

SDA's current capital raise will seek to raise \$2 million (with a minimum investment commitment of \$25,000), reflecting a pre-money valuation of \$6.25 million. SDA believes this pricing offers new investors a conservative, low entry-point to an investment opportunity with significant upside potential in the global waste treatment industry. Chapmans will not participate in the current raise and will be diluted to a 60.6% shareholding.

The capital raise is expected to close on or before 31 December 2018, and construction of the commercial plant is scheduled to commence in January 2019.

SDA has a 50:50 Joint Venture with leading APAC-focused waste and environmental services company Total Waste Management (TWM) to build the first commercial scale waste treatment processing plant. The design and engineering of the first plant has been completed by global consulting engineering group Worley Parsons Limited - via wholly-owned subsidiary Advisian Pty Ltd (CHP, ASX announcement, 5 October 2017).

The relationship with its joint venture and engineering partners has been of significant benefit to SDA in mitigating the operating and engineering risks associated with the design and construction of the commercial plant.

Background to Syn Dynamics' Technology

SDA's unique technology uses water-based conduction and generates plasma from carbon dioxide (CO₂) gas in a process called plasma hydro-pyrolisis (PHP). Previously, plasma gasification and hydro-pyrolisis technologies have been limited to mega scale installations such as coal fired power plants due to its huge power consumption characteristics, destroying 30%-50% of waste types such as CO₂.

SDA's innovations have addressed these scientific and engineering problems. Its solution offers the flexibility of smaller and modular plant sizing to deal with mobile and remote site requirements, and multiple waste stream processing capabilities. It also has zero emissions and toxic residual materials.

The technology has specific water treatment and processing efficiencies, enabling it to convert close to 100% of hazardous waste feedstocks into a clean renewable energy called syngas which can be either utilised to power the waste plant or be converted and redistributed back into energy grids.

Market Opportunity and Revenue Model

SDA is initially focused on waste stockpiles (and cost and environmental issues) in the energy, resources and petrochemical industries. These industry sectors represent an immediate market for SDA's waste-to-energy technology with the ability to expand plant processing capacity via the addition of further processing modules over time - plus the potential to build additional plants to service multiple locations for existing and new customers.

The SDA business model is designed to partner with reputable and experienced waste treatment operators and waste producers to leverage existing supplier and customer relationships. The revenue model is based on licensing its technology and delivering its plants to operate at a specified low target cost per tonne to treat high value waste types, and produce sustainable high margin revenues.

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About Chapmans Limited

Chapmans Limited (ASX:CHP) is an ASX-listed diversified investment company engaged in investments across a diverse range of industries, with a focus and expertise in the mobile and advanced industrial technology sectors.

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