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Furukawa Electric Co., Ltd.

Astomos Energy Corporation

Futura Fuels

### **MOU Signed for a new collaboration in the field of renewable LPG**

Astomos Energy Corporation (“Astomos”) announces a new collaboration with Furukawa Electric Co., Ltd. (“FEC”) and Futuria Fuels (SHV Energy Group) to collaborate in international development of solutions for bioLPG production routes.

- FEC has developed a proprietary process together with catalysts that can convert manure-derived biogas to syngas and then to LPG with propane in high yield.
- Astomos is a leading LPG trader and importer founded in 2006 by the merger of two different companies LPG division, Idemitsu Kosan and Mitsubishi Corporation. Astomos provides their wide capability to import, transport and supply to the worldwide.
- Futura Fuels, is the dedicated business unit of SHV Energy for the development of sustainable fuels including bioLPG and rDME . SHV Energy is a leading global distributor of off-grid energy such as LPG and LNG.

The focus has been to develop a technology to convert biogas into LPG by applying the developed metal catalyst fixing technology. LPG produced, by using this technology, from carbon dioxide and methane obtained from livestock manure is easy to store and transport, and can be used as energy in ordinary households and in industrial sites such as dairy farming, as well as in the event of a disaster.

The ultimate ambition of the collaboration is to establish a supply of millions of tonnes of renewable bioLPG via multiple plants converting syngas from bio-and recycled carbon feedstocks to serve the present and future geographical customer-base of Astomos, Futuria Fuels and others by commercializing and supplementing the technological developments of FEC.

First steps will be to complete techno-economic analysis, further lab verifications and process design development.

Hideya Moridaira, Furukawa’s President, said : “We believe that the technology we

develop with our core technologies not only contributes to a carbon-neutrality but also to the formation of a circular and ecological economy by promoting local consumption of local production on energy assisting the new social infrastructure of the region.”

Mitsuru Yamanaka Astomos Energy’s President, said : “These developments fit perfectly with the vision we have for Astomos Energy. With the changing environment in mind, we, as the leading company in the industry, will keep challenging to achieve the brighter future for LPG.”

Rebecca Groen, Futuria Fuels’s CEO, said : “We recognize the excellent work already done by the Japanese consortium partners in this innovative approach and are excited to collaborate to help accelerate the development both for Japan and other countries around the world.”.

