TAIYO NIPPON SANSO
The Gas Professionals

News Release

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TNSC Puts Low-Cost Biogas Refining Unit on Market

Taiyo Nippon Sanso Corporation has recently marketed a compact, low-cost unit for refining biogas from small-scale distributed-type biomass plants.

Biogas is a by-product of small- to medium-scale dairy and food processing plants, which livestock manure, food waste and so on are placed in the fermentation tanks, principally to produce fertilizer. The use of fuel such as biogas (which is a mixture of 60% methane and 40% carbon dioxide) requires combustion equipment that is relatively expensive -- both to purchase initially and to maintain it. As a result, gas generated in such fermentation tanks is not sold, as this would not be an economic proposition, thus the gas is simply released into the atmosphere.

If biogas is refined to the level of purity (combustion efficiency) as to the gas currently supplied in Japan via piping networks by the gas utility companies (mostly natural gas), it can be used as a fuel by combustion equipment currently on the market without the need for expensive conversion work. To this end, refined biogas could serve as an alternative to fossil fuels, and could even be used to fuel vehicles through conversion to compressed natural gas (CNG).

With the price of crude oil being at their current high level, and amid a growing awareness across the whole spectrum of society for the need to help slow global warming, the moves to actively employ biogas as a fuel are expected to become increasingly common.

The low-cost biogas refining unit recently developed by TNSC uses standard atmospheric pressure, as opposed to the conventional units, which employs lower air pressure to process biogas. Conventional biogas refining units utilizes the pressure swing adsorption (PSA) method which requires a vacuum pump and a pressure booster for the finished product. The new system renders the fore mentioned equipment unnecessary, thus the manufacturing cost can be reduced. Additionally, power consumption is approximately half that of TNSC's existing equipment, therefore the running costs are lower.

In the near future, we plan to expand sales of these units through the collaboration with makers of small-scale biomass fermentation tanks, and envisage sales on the order of several dozen units per annum.

TNSC will continue to actively engage in technological development in this field with the aim of promoting the widespread use of biogas.

Summary of Equipment:

- Input of untreated biogas: $12m^3/h$
- Output of refined biogas: $5\ m^3/h$
- Percentage of methane in refined biogas: 98% or higher

TNSC’s low-cost biogas refining unit