

March 4th, 2019

Company Name: NGK INSULATORS, LTD.
Listing Code: 5333
Stock Exchange Listings: Tokyo and Nagoya
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**Four companies in the Morimura group
(NORITAKE CO., LIMITED, TOTO LTD., NGK INSULATORS, LTD.,
and NGK SPARK PLUG CO., LTD.)
concluded a memorandum of understanding
regarding the establishment of joint venture for Solid Oxide Fuel Cell**

Four companies in the Morimura group (NORITAKE CO., LIMITED (President: Hiroshi Kato), TOTO LTD. (President: Madoka Kitamura), NGK INSULATORS, LTD. (President: Taku Oshima), NGK SPARK PLUG CO., LTD. (President: Shinichi Odo)) jointly concluded on a memorandum of understanding regarding the establishment of a joint venture (JV) for Solid Oxide Fuel Cell (SOFC) and agreed to make a concrete plan for the JV establishment as follows.

1. Purpose of the JV Establishment

SOFC, which each company possesses its technology, is expected to realize a high-efficiency power generation system even at small scale. Moreover, it is expected as one of measures to solve energy and environmental problems in various fields such as home use, business and industrial use and so on.

For example, in the field of household fuel cell systems, according to the METI (Ministry of Economy, Trade and Industry)'s "the Strategic Road Map for Hydrogen and Fuel Cell" (Published June 2014, Revised March 2016) (*1), it will tackle the autonomous spread of fuel cells toward 2020 and 2030 to be expected as one of an energy-saving equipment.

Development of SOFC is with high technical difficulty, such as using ceramic as the core material of power generation and operating in a high temperature reactive atmosphere. The main issues for commercialization and practical application of SOFC are low cost and high durability; however, research and development of lifetime evaluation and its corresponding technologies takes a long time to be realized. Moreover, it requires a considerable effort and cost until the commercialization. Under these circumstances, four companies will establish a JV company with a joint investment, with the aim of realizing immediate commercialization by integrating the respective resources such as SOFC technology and know-how that each company has cultivated.

Therefore, four companies in the Morimura Group will work together to maximize the JV's corporate value in order to increase the profitability of the JV.

2. Outline of the JV Company (planned)

Regarding a plan of the JV company to be established, four companies are under discussion. The details will be decided among the four companies after the conclusion of the agreement. We will promptly announce it as soon as we have officially decided. In addition, the execution of the transaction is conditional upon obtaining approval from the competition law authorities of each country as necessary.

(1) Name	TBD
(2) Location	2808, Iwasaki, Komaki, Aichi
(3) Representative Director and his/her Name	TBD
(4) Business	Business related to research, development, manufacturing, and sales of SOFC
(5) Capital	TBD
(6) Investment Ratio	TBD
(7) The scheduled date of the commencement of operation	December 1 st , 2019

3. The counterpart of the basic agreement

(1) NORITAKE CO., LIMITED

(1) Name	NORITAKE CO., LIMITED
(2) Location	3-1-36 Noritake-Shinmachi, Nishi-ku, Nagoya, Aichi, JAPAN
(3) Representative Director and his/her Name	Hiroshi Kato
(4) Business	1. Industrial Products (manufacturing and sales of grinding and polishing tools) 2. Ceramics & Materials (manufacturing and sales of ceramic related products) 3. Engineering (manufacturing and sales of industrial furnaces, etc.) 4. Tabletop (manufacturing and sales of tableware)
5. Capital	15,632 million yen
6. Date of Establishment	January 1, 1904
7. Number of Employees	Consolidated: 5,012 (as of March 31, 2018) Non-Consolidated: 1,805 (as of March 31, 2018)
8. Consolidated sales	117,928 million yen (ended March 31, 2018)

(2) TOTO LTD.

(1) Name	TOTO LTD.
(2) Location	2-1-1, Nakashima, Kokurakita-ku, Kitakyusyu-city, Fukuoka, JAPAN
(3) Representative Director and his/her Name	Madoka Kitamura
(4) Business	Manufacture and sale of Residential equipment, Ceramics (Precision Ceramics & Optical Components) , Green Building Materials, etc.
(5) Capital	35,579 million yen
(6) Date of Establishment	May 15, 1917
(7) Number of Employees	Consolidated: 32,428 (as of March, 2018) Non-Consolidated: 7,960 (as of March, 2018)
(8) Consolidated sales	592,301 million yen (ended March 31, 2018)

(3) NGK SPARK PLUG CO., LTD.

(1) Name	NGK SPARK PLUG Co., LTD.
(2) Location	14-18 Takatsuji-cho, Mizuho-ku, Nagoya, Aichi, JAPAN
(3) Representative Director and his/her Name	Shinichi Odo
(4) Business	1. Manufacturing and selling spark plugs and related products for internal-combustion engines. 2. Manufacturing and selling technical ceramics and applicable products.
(5) Capital	47,869 million yen
(6) Date of Establishment	October 26, 1936
(7) Number of Employees	Non-Consolidated: 5,851 (as of March 31, 2018) Consolidated: 15,322 (as of March 31, 2018)
(8) Consolidated sales	409,912 million yen (ended March 31, 2018)

4. Further Outlook

We will make an announcement as soon as the detail of this JV establishment has been decided. We will disclose it in a timely manner in the process of examining concrete contents in the future if it would have a significant impact on business performance.

Source

*1: METI, http://www.meti.go.jp/english/press/2016/0322_05.html