News Release

INCJ to invest in LE System Co., Ltd, Kurume-based Venture company

- LE System supplies vanadium electrolytes at a low cost – a key element to the spread of redox flow batteries
- Contributes to the expansion of renewable energies and the stabilization of electric power supply through the spread of redox flow batteries
- Improves international competitiveness through open innovation and cooperation with large businesses

Tokyo, November 14, 2017 – Innovation Network Corporation of Japan (INCJ) and QB Capital LLC announced today the decision to jointly invest in LE System Co., Ltd., (LE System) a venture company that develops and manufactures electrolytes for redox flow batteries. INCJ, QB Capital and other co-investors have decided to invest a total of 580 million JPY – of this, INCJ has invested 400 million JPY in growth capital through a third-party allocation of shares.

LE System has developed technology to recover vanadium from electrostatic precipitator (EP) ashes produced as an industrial byproduct at thermal power plants, and produce vanadium electrolytes for use in redox flow batteries at a low cost. It is currently transitioning to the mass production stage. The majority of the current investment will be utilized in the construction and operation of a mother plant for the production of vanadium electrolytes and the recovery of vanadium.

Recently, the introduction of renewable energy such as solar or wind power has been accelerating at a global level for creating a low-carbon society. However, renewable energy generation can be unstable and the duration and amount of power generated depends on the natural environment including the weather. Therefore, there are issues such as adverse effects including frequency fluctuation and voltage fluctuation which may occur in electric power systems. In order to resolve this issue, we expect that high-capacity batteries capable of storing significant amounts of electric power are needed.

Compared to other practical high-capacity batteries, redox flow batteries can be operated in a stable manner over a long period of time, and there is no limitation on the number of charge and discharge cycles. The flexibility in expansion and of the stability offered by redox flow batteries is superior to other options. The concept behind the redox flow battery was announced in the 1970s, and development has since progressed both in Japan and overseas,

with some cases of practical use. However, since the electrolytes use rare metals, there are challenges with regards to high cost and unstable supply, which prevent the spread of redox flow batteries.

LE System has partnered with Taiheiyo Cement Co., Ltd., a leading company in the cement industry, in its recycling business (material recovery, utilization of cement raw material, etc.). Through this collaboration, LE System has advanced joint development of technology to recover vanadium from industrial waste. This has made it possible to procure vanadium raw materials at a stable and lower price, and is expected to greatly contribute to alleviating the bottleneck to the spread of redox flow batteries.

Through its investment in LE System, INCJ aims to create success stories of redox flow batteries that are highly competitive in the global market, as well as promote the use of renewable energy and the adoption of redox flow batteries. INCJ will support the partnership between a leading Japanese company and a venture company in order to create and promote open innovation.

Redox Flow Battery

A redox flow battery is a storage battery that can be charged and discharged through redox reactions of ions such as vanadium, which creates a cyclical solution. The redox flow battery is operable at room temperature, and is secure as it does not use any combustible or explosive substances. Measuring the open circuit voltage of the electrolyte enables accurate monitoring and control of electric energy stored in real-time. Therefore, it is possible to utilize surplus electricity at night and is suitable for absorbing irregular and fluctuating renewable energy generation output (solar, wind power, and so on.)

About LE System Co., Ltd.

Established:	January 2001
Business Outline:	Renewable energy-related business and redox flow battery business
Headquarters:	Kurume, Fukuoka Prefecture
Technical Centre	Tsukuba, Ibaraki Prefecture
Representative:	Junichi Sato, CEO
URL:	http://www.lesys.jp/

About Institute for QB Capital LLC

Established:	April 2015
Headquarters:	Fukuoka, Fukuoka Prefecture
Representative:	Takeshi Sakamoto, Takashi Hondo
Investors:	The Nishi-Nippon City Bank, Ltd., Kyushu TLO Company, Limited, Others
URL:	http://qbc.co.jp/

About Innovation Network Corporation of Japan (INCJ)

INCJ was established in July 2009 as a public-private investment company that provides financial, technological and management support for next-generation businesses. INCJ specifically supports those projects that combine technologies and varied expertise across industries and materialize open innovation. INCJ has the capacity to invest up to JPY2 trillion (approx. US$20 billion).

INCJ's management team is drawn from the private sector with diverse experience in investment, technologies and management. Through its Innovation Network Committee, INCJ assesses investment opportunities that contribute to industrial innovation in Japan in line with criteria set by the government.

URL: http://www.incj.co.jp/

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・QB Capital LLC Nagahama Tel. (092) 832-6200

LE System

Target: LE System Co., Ltd.
Business Outline: Development, manufacture and sales of electrolytes for redox flow batteries
Authorized Investment: 800 million JPY (maximum) – of this 400 million JPY has been invested
Date of Announcement: November 14, 2017

INCJ

Investment
Management
Support
Dispatch of
external directors

QB Capital LLC

Investment
Management
Support
Dispatch of
external directors

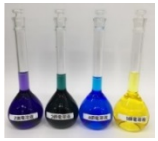
Other Co-Investors

Investment
Management
Support

LE SYSTEM CO., Ltd.
LE SYSTEM Co., Ltd.

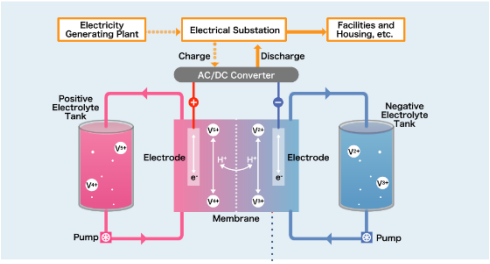
- Redox flow battery use electrolyte development and production venture based in Kurume, Fukuoka Prefecture
- **Development of technology and techniques to recover vanadium in a stable way from industrial waste at a low price**
- Supply vanadium at low electrolytes at low prices, which has become a bottleneck for the spread of redox flow batteries

＜Electrolyte＞



provide

＜Redox flow battery＞



Joint development
Cooperation on
Vanadium recovery

Taiheiyo Cement Corporation

Joint development
Cooperation on
electrolyte sales

Major Electrical Manufacturers

Joint development
Business partnership

Other companies

- Contribute to the expansion of renewable energy and stabilization of electric power supply through the spread of redox flow batteries
- Improve international competitiveness through open innovation and cooperation with major manufacturers