SoftBank's Renewable Energy Business and Asia Super Grid (ASG)

July 23rd, 2018

Shigeki MIWA
General Manager, CEO Project Office SoftBank Group
Representative Director & CEO, SB Energy Corp.
Established RE business base in Japan, India and Mongolia

- July, 2011
  Japan Renewable Energy Council
  Aug, 2011
  Renewable Energy Institute

- October, 2011
  RE developer in Japan
  SB Energy
  SoftBank Group

- July, 2014
  High-altitude wind gen.
  ALTAEROS energies

- October, 2012
  RE developer in Mongolia
  Gobi Green Energy

- July, 2013
  Fuel cell business
  Bloom Energy
  JAPAN

- December, 2014
  RE developer in India
  SB Power
  Clean Energy Asia

- December, 2015
  PV developer in India
  SB Energy
  Saudi Arabia LLC

- April, 2018
  Lithium mining & refining
  NEMASKA LITHIUM

Great Earthquake
March 11th, 2011

Power retail Business in Japan
International Workshop held in March 8, 2018

Business Progress on

“Getting Power from Wind and Sun”
SB Energy (Japan)

Total 650 MW
(42 sites)
As of Feb 16, 2018

Total 660 MW
(43 sites)
As of Jul 23, 2018
Bloom Energy Japan (Fuel Cell)
(SoftBank group:50%, Bloom Energy:50%)

New System of Distributed Power Generation

Total 2.3 MW

Total 10.7 MW

Provide clean, reliable and affordable energy to Japan
Gobi Green Energy (Mongolia)
(Newcom:51%, SB Energy: 49%)

Tsagaandelger Site
40,000 ha

Bulgan Site
83,000 ha

Khurmen Site
56,000 ha

Tsogt Tsetsii Site
7,000 ha

Manlai Site
181,000 ha

Land secured for development in the Gobi Desert
Total 367,000 ha (3,670 km²)
(15GW+ wind and solar potential)
Wind Farm Development

- **50 MW completed** @ Tsetsii (COD: 6th Oct, 2017)
- **2 GW project** (Feasibility study)
- **750 MW Hybrid** (Feasibility study) [Wind and PV]
Our Projects

Solar PV Projects (India)

1. Andhra Pradesh
2. Rajasthan
3. Karnataka

Total 0.95 GW
Total 3.88 GW

Solar is cheaper than new coal-fired plants in India
PV Development in Saudi Arabia

- MOU signed in March, 2018
- Total 200GW (by 2030)
- Under discussion on the 1st project
- Commercial Operation expected to start in 2019
SoftBank Group contributes to international framework to promote renewable energy
ISA (International Solar Alliance)

- 121 countries, mainly from countries with rich solar power resources are expected to be participated.
- Aiming for investment of over 1 trillion USD and a large scale Solar development of more than 1000GW by 2030.
- Focusing on reducing PV technology development cost and fund procurement cost.
Solar Development in Africa

SoftBank expressed its intention to consider to make a huge investment in the solar development in the African continent using the scheme of the SoftBank Vision Fund at the 31st African Union Summit (July 2, 2018)
Japan Climate Initiative (JCI)

- **Purpose**: Promote decarbonization stated in Paris Agreement through cooperative network among corporations, local governments, etc.
- **Established**: July 6, 2018
- **Activities**:
  1. Create movements in Japan towards decarbonization
  2. Support members’ activities (e.g. RE100)
  3. Communicate with Japanese govt for more robust measures
  4. Build alliances with overseas initiatives
     (e.g. “We Are Still In“, “Alliances for Climate Action”)
- **Members**: 104 (74 corporations + 30 local govts / NGOs)
   (e.g. Hitachi, AEON, Kao, Nikon, Fujitsu, Ajinomoto, Kyoto City, Tokyo)

SBG & SBE Joined as Founding Members

(Source) JCI Official Website (as of July 9, 2018)
Solutions for the Era of Large-scale Adoption of Renewables

Battery

Power Grid Interconnection
Lithium Investment in Canada

Investment Amount: C$93M ($73M)
Shareholding: 9.9%

Business activities: Mining + Refining
Annual Production: Approx. 33,000t

Source: Nemaska Lithium
GEIDCO

"One Belt, One Road"

Chairman
Mr. Liu

Vice Chairman
Dr. Shu

Dr. Chu

Mr. Budargin

Former US Secretary of Energy
Asia Super Grid Concept
(announced in September 2011)
3 Key Factors

- Technology
  - Feasible
- Economics
  - Makes sense
- Politics, Law & Regulations
  - Rule-making is required
Progress on China-Korea Interconnection

SGCC - GEIDCO - KEPCO signed MOA* (Dec. 18, 2017)

(*MOA: Memorandum of Agreement)

- “To develop China-Korea Power Grid Interconnection within the framework of the M-C-K-J Project…”
- Set up a Steering Committee and a Joint Working Group (Apr. 17, 2018)
- Conduct a further study: Transmission technology, Economics, Market design, Regular policy, Business model suggestion, etc.
- Agreements, including JDA, shall be developed separately by the Parties
MOU was signed between KEPCO and Rossetti (June 24th, 2018)

• Collaborative research towards grid connection
• Joint development and utilization on natural resources in Russia
• Collaborative research towards distribution network testing

Significance of ASG from Japan point of view

- Expansion of renewable energy and output fluctuation smoothing
- More stable power supply by broader area operation
- Introduction of competitive principles in power market
- Exporting Japanese energy-saving and clean technology to overseas
- Increase on the opportunities of utilizing evacuation Joint Crediting Mechanism
- Energy security and peace in Northeast Asia
For the last 4 months, no major progress was made in Japan. Neighboring countries have promoted international grid connection by joint effort of both public and private sectors.

How shall Japan proceed?