2019

The ABB – SUSI Partnership for Microgrids and Energy Storage
Speakers for today
Introductions

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ABB – SUSI Partners | Partnership Overview

SUSI Partners AG ("SUSI") is a Swiss investment adviser with over 30 full time investment professionals based in Zug and Zurich with offices in Luxembourg and Frankfurt.

The company was founded in 2009 and focuses exclusively on financing clean energy assets and sustainable energy infrastructure.

$1bn Assets under Management
- It currently has three investment products with assets under management of approximately $1bn
  - Renewable Energy
  - Energy Efficiency
  - Energy Storage

Stable Returns with Attractive IRRs
- SUSI has significant experience in its sectors delivering stable returns with attractive IRRs to institutional investors and has completed over 50 deals since inception.

SUSI Funds Achievements
- 750,000 tonnes CO₂ savings of SUSI funds
- 8,118 Gasoline tankers saved
- 98,703 Households powered in 1 year
- 3,594 Coal cars saved

Energy Storage
- SUSI has achieved final close at €252m in June 2018

1 Note: As of December 2017 since inception
ABB: the pioneering technology leader

What (Offering)
- Products: ~58%
- Systems: ~24%
- Services & software: ~18%

For Whom (Customers)
- Utilities: ~35% of revenue
- Industry: ~40% of revenue
- Transport & Infrastructure: ~25% of revenue

Where (Geographies)
- Americas: 29% $9.7 bn
- Europe: 33% $11.3 bn
- AMEA: 38% $12.8 bn

~$34 bn revenue
~100 countries
~132,000 employees

SOURCE: Q4 2017 published financial results; ABB analysis
## Welcome

Webinar on the ABB – SUSI Partnership for Microgrids and Energy Storage

### Today's webinar

Through this webinar, we aim to:

- Introduce you to the partnership that ABB and SUSI have entered into
- Tell you about how this will benefit your business and customers
- Start and continue conversations on viable projects

### What you’ll hear about

Our agenda today is:

- Introduction – the business context
- An introduction to SUSI and ABB
- Key elements of the partnership
- Details on funding
- Details on technology
- Next steps
- Q&A

### Our goal

Enable your projects with our partnership:

- Generate business opportunities
- Develop further the growth of Microgrids and Battery Energy Storage
Introduction – the business context
Energy and grid transformation
Long-term drivers for microgrids and energy storage

Electricity consumption on the rise
- Electrification of everything – moving towards electricity as the primary source of power
- Economic and population growth will lead to increasing demand for power

Growth in renewables
- Governments and industry moving towards renewable energy
- Intermittent generation sources can reduce reliability on the electrical grid

Coal plant retirements
- Reducing baseload power capacity
- Limited resources for ancillary services on the utility grid

Electrification of transportation
- More users of EVs can increase peak loads placing more strain on the electrical grid
- Increase in high speed rail

Consumers becoming prosumers
- End users (residential, commercial and industrial) want to minimize their energy costs
- Buying model shifting from CAPEX to OPEX
Microgrid and energy storage applications
Used today across various industry segments

**Generation (Utility-Scale)**
- Dispatchable renewables
- Storage

**Ancillary Grid Services (Utility-Scale) - FTM**
- Postponement of grid upgrades
- Integration of distributed renewables & EV
- Ancillary grid services

**Commercial and Industrial - BTM**
- Reduced fees from harmonic pollution & demand peaks
- Higher reliability rail and e-bus network
- Optimize self-consumption

**Microgrids**
- Stabilization
- Storage

**Transport - BTM**
- Storage

**Residential and small commercial - BTM**
- Storage
Key elements of the partnership
An integrated solution to enable microgrids and energy storage as a service
Combining best-in-class technology with clean energy infrastructure financing expertise

100M EUR facility available for immediate investment through SUSI’s Energy Storage Fund
ABB – SUSI partnership for microgrids and energy storage

Investment guidelines

**Geographic focus**: Global basis (OECD preferred), excluding Sub-Saharan Africa utilities

**Target applications**: Commercial and industrial, mining, islands, end-of-line

**Developer profile**: Previous experience with energy storage and renewables, technology agnostic

**Energy Services Agreements**: The Contracts would be subject, at a minimum, to SUSI’ investment being 100% recouped from the contracted cash flows

**Minimum Deal Size**: Minimum project CapEx cash outflow of EUR2m

**Credit Rating**: Financing facility open to projects with investment-grade counterparties.

**Target Returns**: Expected high single digit returns to SUSI, in hard currency (e.g. EUR, USD, GBP, CHF) and post-Development Fee

**Replicability is key**: Create a set of templates and processes that will be used for the follow-up transactions/ additions to the Facility in order for Future Projects to be “reviewed by exception”
ABB – SUSI partnership for microgrids and energy storage

Partnership overview

Sample deal structure

- **SUSI Partners** to invest up to 100% equity in the Project via a SPV, exerting ownership of the assets (other setups possible)
- **Developer**, EPC and ABB to provide Development and construction services to the Project SPV
- **ABB** to act as the exclusive technology partner as a sub-supplier to the developer/EPC
  - Relationship with Developer governed by contractual set-up between ABB and SUSI (e.g. MoU)
  - Relationship with EPC (and O&M) to be governed by contract with clear focus on each project
- Energy Services Agreement (i.e. PPA or Offtake Agreement) contracted between the SPV and the Customer
- Cash flow from the projects to cover SUSI’s investment under the form of dividend/other distribution mechanisms
Options on asset ownership

**Option 1: SUSI to retain 100% of asset ownership**
- Pure-Play developers looking for upfront remuneration under the form of a development Premium
- Developer does not remain invested in the asset

**Option 2: SUSI to allocate a minority “free carry” to the developer**
- Developer/IPP looking to remain invested in the project and will be allocated a minority equity stake under the form of a free carry
- Developer remuneration: Upfront development premium + Dividends (free carry)
- Simple structuring – does not necessarily involve different classes of shares

**Option 3: Developer to retain 100% of asset ownership**
- SUSI to provide debt financing in the project (target return remains unchanged)

Construction guarantees

- Fully wrapped EPC

Operations management

In the case where SUSI is the 100% equity owner of the Project, SUSI would mandate an external provider (that can be the developer, the O&M or any other 3rd party specialized player) to manage the project’s operations
ABB: your technology partner
ABB in microgrids and energy storage
Pioneer in technology, solutions and execution

Leading global expertise
- 25+ years experience
- 200+ executed projects
- Innovation, technology & productization leadership
- Global sales & service network

Broad portfolio of products & services
- Renewable power
- Conventional power
- Microgrid / Energy Storage control system
- Energy storage and grid stabilization
- Power distribution and protection

AND

Consulting
Service
3rd party financing
Global installed base > 360MW

Microgrids, BESS and Statcom

North America:
- MG/BESS: >150MW
- Statcom: >340MVar

Europe: >15MW

Asia: >80MW

Africa ME: >10MW

South America: >20MW

Australia: >75MW

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ABB Ability™ e-mesh™

Product portfolio

**e-mesh™ Applications**
SaaS applications to improve performance

**e-mesh™ Monitor**
Cloud-enabled remote monitoring and controlling of DERs

**e-mesh™ SCADA**
Distributed energy resources automation solution

**e-mesh™ Control**
Intelligent and efficient power management

**e-mesh™ PowerStore™**
Smart battery energy storage solution

- Monitoring and control
- Bidirectional data flow from (and) or to the field
- Access from anywhere anytime

- Data acquisition from DER's and substations
- Supports international and local communication protocols
- Interaction with TSO/DSO

- Renewable power generation grid code compliance
- Network voltage control
- Feeder & Load demand management
- Generator overload protection

- Forecast production and optimal planning
- Improve productivity and economical gains
- Business KPI dashboards and reports

- Value stacking of power and energy applications (seamless islanding, black start, f & V regulation, spinning reserve, ramp-rate control, capacity firming load leveling, peak shaving and load shifting)
**e-mesh™ PowerStore™**

Enabling resilient and cost-effective access to power

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**Instant power wherever and whenever it is required**

e-mesh™ PowerStore™ is a reliable plug-and-play microgrid and battery energy storage solution, available in various ratings with a standardized specification for installations across utilities, remote communities, commercial and industrial establishments.

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**Key Offering**

- PowerStore™ is available in two variants - PowerStore™ Integrated & PowerStore™ Modular, serving all customer segments
- Reliable and affordable power with highest integration of renewables
- Productized design allows faster implementation
- Pre-configured automation functionalities
- Easily transportable
Summary and Next steps
ABB – SUSI partnership for microgrids and energy storage

Roles and responsibilities

- Provides up to 100% equity financing
- Assists the developer on deal structuring (bankability is key)

Developer partner

- Specific according to geographies and areas of expertise
- Structures deal and delivers solution to end customer including EPC selection and off-take agreement

- Exclusive technology partner
- Scope: Battery energy storage, controls and software, electrical balance of plant, consulting support
Let’s talk!
We want to enable your success

- Project developer, utility, IPP with previous experience in renewables and/or storage
- Developing a bankable portfolio of energy storage and microgrid projects
- Long-term contracted revenues
- Best-in-class technology and financing partners

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Towards a new energy future – decarbonized, decentralized, digitalised
Any questions?
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