



SUNSEAP

New Business Models for Solar Proliferation



SUNSEAP

Group of Companies

"Affordable Clean Energy for Everyone"

- With over 30 years of history and experience in the solar industry, Sunseap is a full spectrum clean energy solutions provider with a build, own and operate model focusing on rooftop- and ground-mounted solar PV projects
- With close to 200 MWp contracted as of October 2017 and more than 110 employees across 8 regional offices, Sunseap is Singapore's most established solar PV provider

INTERNATIONAL

- Development of grid parity solutions in high potential, power-deficient and growth economies in the ASEAN and Pacific region

LEASING

- Singapore's largest Clean Energy generator with more than 80 MWp fully constructed in portfolio
- Forms the "generator" arm in the vertically integrated clean energy utility

ENERGY

- Executed the first Clean Energy Retail contract in Singapore with Apple as off-taker
- Poised to participate in Full Retail Competition and become Singapore's largest Clean Energy Gen-tailer

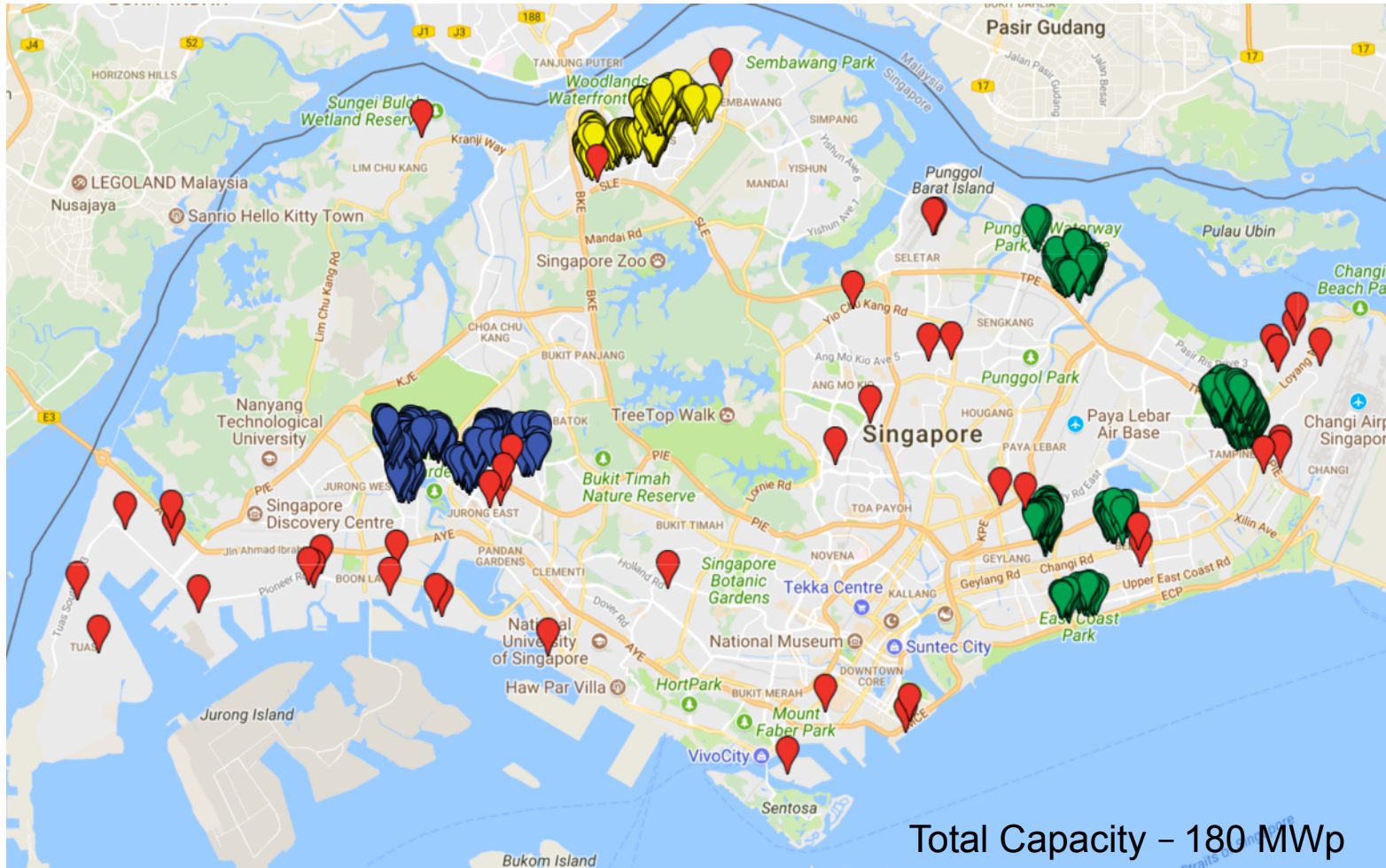


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Sunseap's Singapore Footprint

Over a thousand sites across the island



PUBLIC HOUSING PROJECTS

Yellow pin North

Blue pin West

Green pin East

COMMERCIAL PROJECTS

Red pin Various locations

Total Capacity – 180 MWp



Annual Carbon Offset – 100k Tons



Equivalent Trees Planted – 2.5M Trees

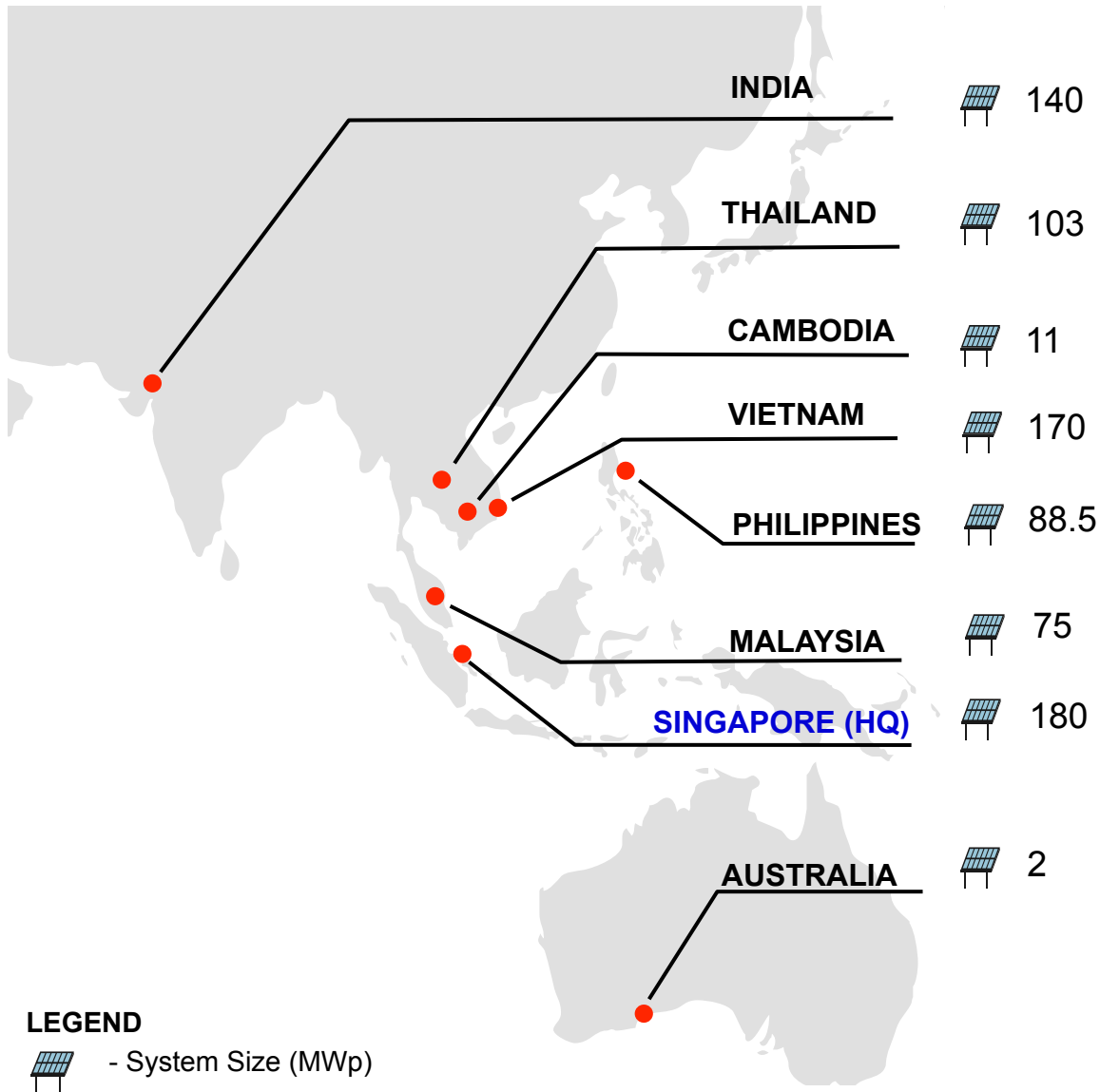
Proprietary and Confidential



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Internationalization

Growing in Asia in Utility Scale, Rooftops and Other Capabilities



India

- Awarded 140 MWp FiT with NTPC as part of a consortium

Thailand

- Implementation of a 100 MWp rooftop portfolio
- Developing a solar farm of 3MWp
- Floating solar potential >10MW

Cambodia

- 11 MWp solar farm PPA with EDC COD on 29 Aug 2017
- Potential solar park discussions with EDC / ADB

Vietnam

- Developing a 170 MWp solar farm

Philippines

- Awarded a 62.5 MWp bilateral PPA with Meralco
- 6MWp microgrid solution under development
- Rooftop portfolio of 20 MWp under development

Malaysia

- 1 MWp greenhouse-mounted project in operation
- Negotiating solar farm and participated in large scale solar
- Potential ADB funded 100MWp rooftop portfolio

Singapore (HQ)

- 90 MWp commissioned
- 80 MWp under construction
- >20MWp pipeline

Australia

- Exploring rooftop solar development in East and West Coast
- Exploring floating PV and Shell 250MW project

Various New Business Models

The Energy Value Chain and Value-added Services

Roof Lease

Typically requested by multi-strata title building and Reits.



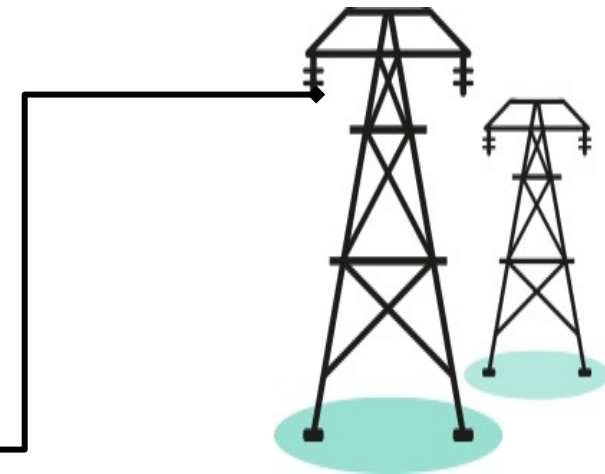
Solar Leasing/Onsite PPA

20% of Energy Demand provided by Solar Generation



Clean Energy/Offsite PPA

80% of Energy Demand provided by Energy Retail



Floating PV/ Mobile Solar Farms

Singapore's answer to Large Scale Solar Farms



Demand Side Management

Demand Response, Load Shifting, Max. Demand Management, Contracted Capacity Reduction

Off-Grid Systems

Diesel reduction via PV Energy Storage Hybrid System



Sunseap's Capabilities

Key Areas to Differentiate Offering and Deliver via a Unique Platform



Solar Rooftop Installations



- Rooftop specialist
- Utility scale growth



Floating Solar



- 200kw in reservoir (Singapore)
- Discussing >15MW opportunities in the region



IoT monitoring, Green-Fi



- Energy IoT metering,
- Platform to monitoring multiple equipment Green-fi



100% Clean Energy PPA



Source: Channel News Asia

- Clean energy relationships with GFAMs
- Singapore then regional demand



ESS and Batteries



- Batanes project in Philippines
- Rural electrification
- Micro Grids

Proprietary and Confidential



Innovative Financing



- Portfolio project financing
- Asset back securitization (Singapore)



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Sunseap Capabilities

Strategic & Financing Partners

Equity & Debt Funding Partners



NOVEL
INVESTMENTS



Lender's Advisors



Singapore Floating PV At Tengah Reservoir

Touted the World's Largest Test Bed



Commercial Intent

1. Singapore reservoir has 3.7GWp potential
2. Singapore 10MW turnkey in 2018, then 100MW in 2-3 years
3. Challenge of merchant risk, greed
4. Government strategy to attract GFAMs and reduce evaporation of reservoirs

Technical Considerations

- Single pitch vs dual pitch
- Environmental studies and anchoring
- Deployment approach (phased)
- Grid ability and bearing of the relevant costs

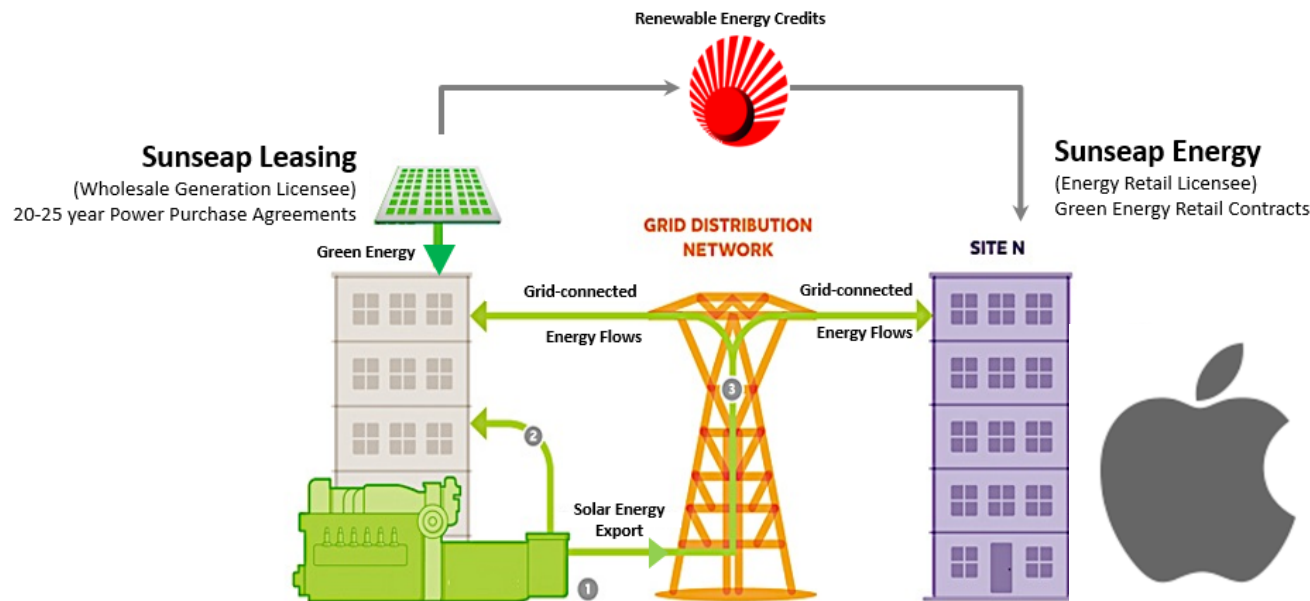
Current Work in Progress

- a. Suitable float manufacturing
- b. Clean energy business model with PPA, Virtual PPA, Floating for Fix swaps
- c. Capital markets link for large scale
- d. Storage to regulate frequency

YouTube feature by TODAYonline: <https://www.youtube.com/watch?v=8hSSPfOYZ-I>

Clean Energy Business Model

1st Landmark Transaction in Singapore with Apple



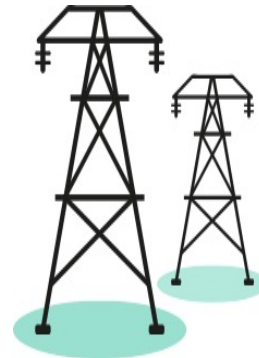
Distributed Energy Generation

1. Solar System supply solar energy to Site 1 via a solar leasing agreement
2. Any excess of solar energy is exported into the grid at wholesale prices and is “sold” to Site N who commits solar energy which is less carbon intensive

- Sunseap → Wholesaler (Generator) & Energy Retailer Licences from the Energy Market Authority of Singapore
- Bundles exported energy and Green Attributes to provide a clean energy solution for consumers, with the landmark deal by **Apple Singapore to supply 40GWh per annum**.
- Sunseap is also exploring Virtual PPAs with large MNCs with entire off-take of green capacity, and retail solutions to take over the entire energy value chain for our current leasing clients

Open Electricity Market 2018

Growing in Asia in Utility Scale, Rooftops and Other Capabilities



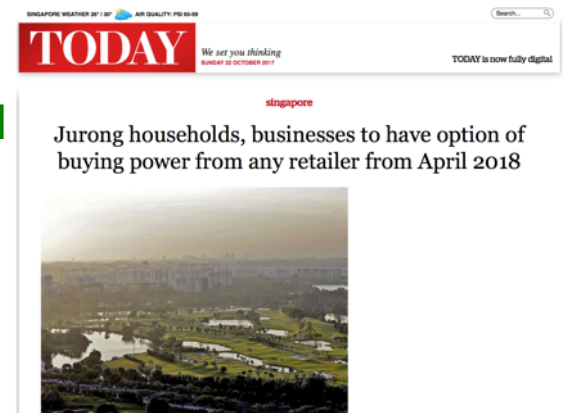
MNCs



SMEs

NINJA VAN
Arbite

1.3 Million
Household



ELECTRICITY IS GENERATED

through our Solar PV Systems on different locations.



ENERGY IS TRANSMITTED

through the National Grid.



SUNSEAP ENERGY SUPPLIES ELECTRICITY TO CUSTOMERS

through the National Grid.