



Expanding Renewable Energy Integration to STELCO Grid

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STELCO

- State Electric Company Limited (STELCO) is a Maldivian Government owned company, with over 65 years of history.
- At present STELCO provides electricity to over half of the population of the country with a total installed capacity of over 90 MW.
- STELCO has its largest operation in Male' city, the capital of Maldives, with an installed capacity of over 62 MW, to provide electricity to over 35,000 customers in Male' city.
- STELCO currently operates 33 powerhouses, in 33 islands.

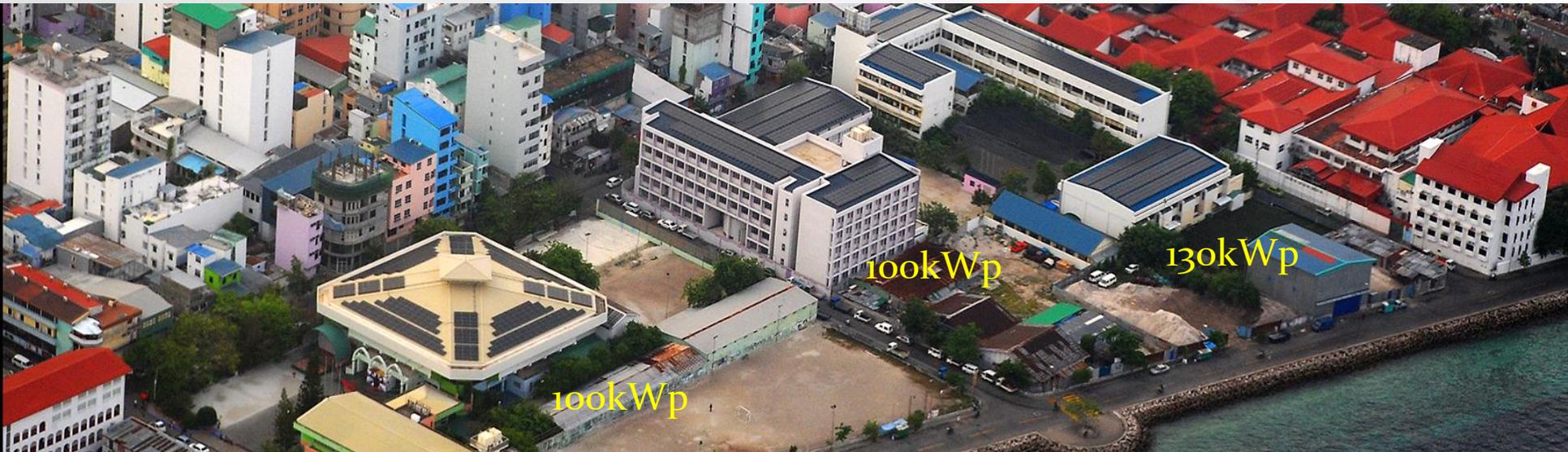
STELCO and Renewable Energy

- In order to decrease the dependency on fossil fuel and benefit the environment, STELCO has successfully implemented renewable energy projects. Being a tropical country with plenty of sunshine, the best fit renewable energy technology has been solar photovoltaics.
- STELCO was the first company to introduce solar photovoltaics to the Maldives on a commercial scale.
- In 2012 a 698kWp of solar photovoltaics was installed on the six islands in Male' Atoll under a power purchasing agreement with a local company. This caters to 30% of daytime peak of those islands when it was implemented

	6 months prior to solar installation		6 months after solar installation		% drop in diesel consumed per kWh
	Total kWh produced	Total diesel consumed	Total kWh produced	Total diesel consumed	
Villingili	4,543,220	1,287,097	4,925,773	1,316,869	5.63
Kaashidhoo	650,892	184,984	686,693	186,145	4.62
Thulusdhoo	738,010	212,986	787,826	220,314	3.10
Himmafushi	945,468	288,547	930,566	256,066	9.84
Guraidhoo	757,430	225,502	818,965	229,322	5.95
Maafushi	1,526,919	461,867	1,718,925	458,234	11.87

STELCO and Renewable Energy

- In addition 740kWp of solar photovoltaics was installed in the capital Male' under Japanese grant aid. STELCO was the implementation partner of this project and also operates and maintains these systems.
- The Project for Clean Energy Promotion in Male' is a good example of Japanese assistance in promoting renewable energy in the Maldives.



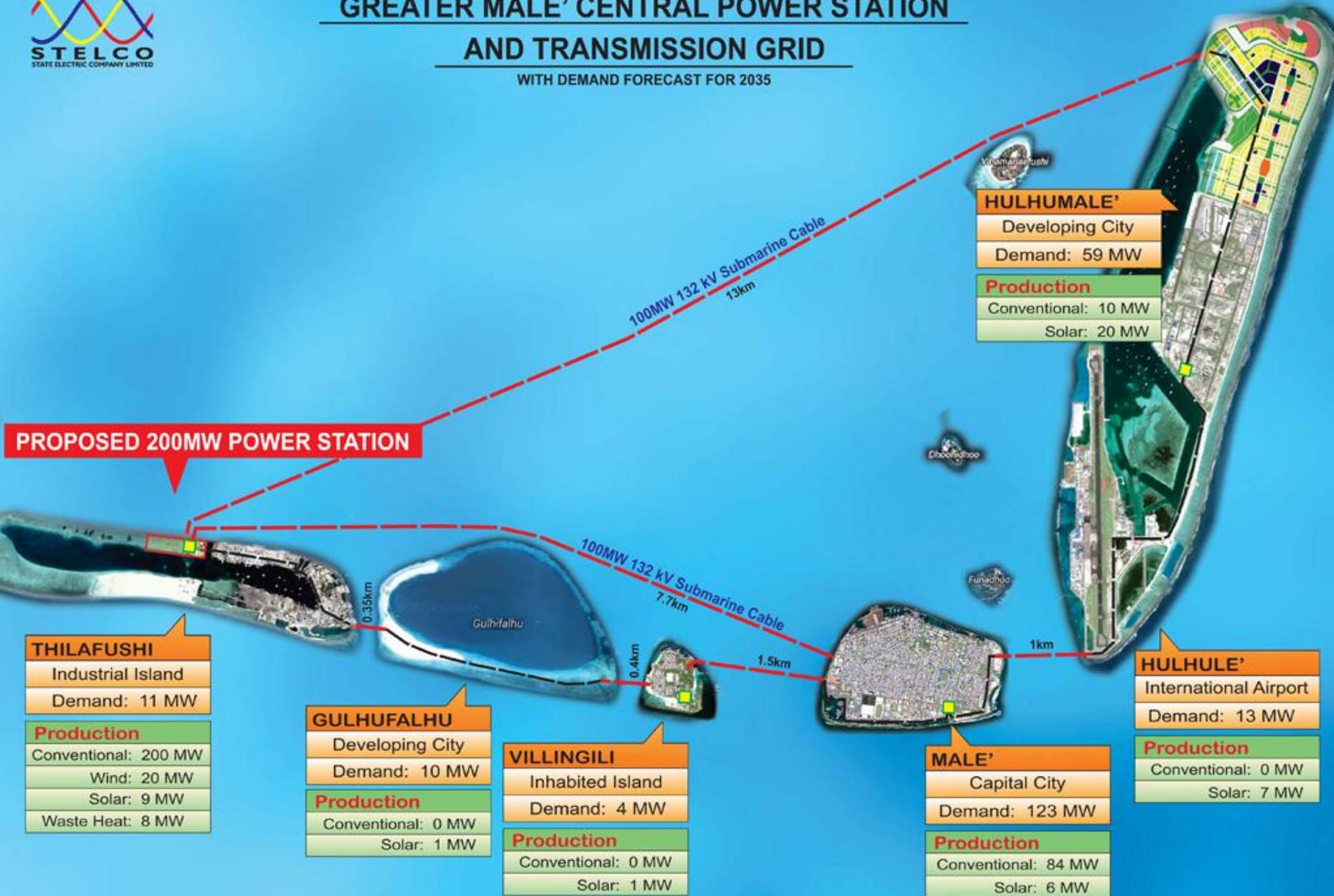


Project Rakeedhoo, Dhidhdhoo

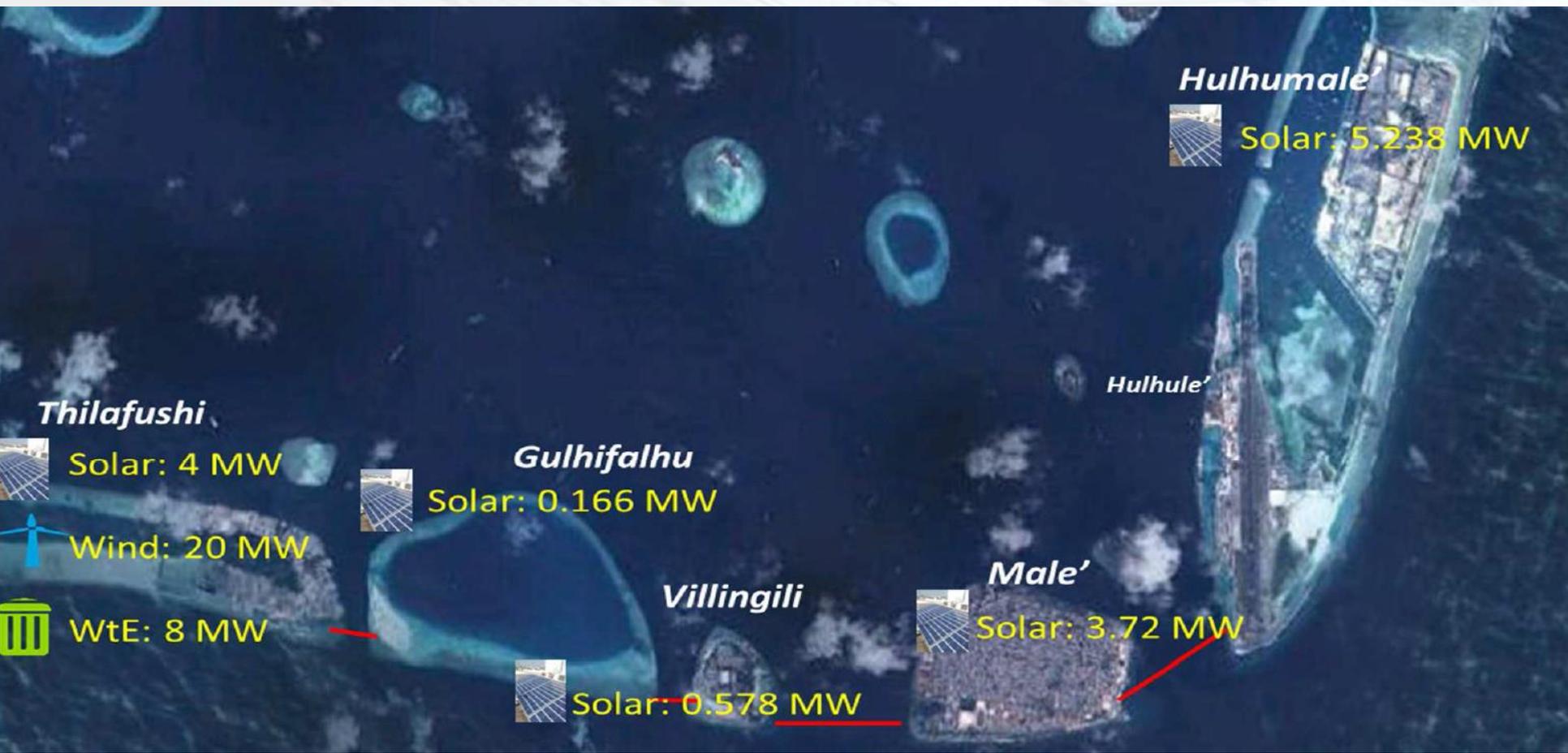
- As a jointly funded project with ADB, STELCO is installing a solar PV array in Vaavu Rakeedhoo, aimed to generate 100% of electricity required. System includes 29kWp solar panels and 60kWh of lithium ion battery storage.
- Design replicated in ADh.Dhidhdhoo
- Modular design with option to add more capacity easily.
- This installation will currently be a hybrid system with diesel generators as backup.

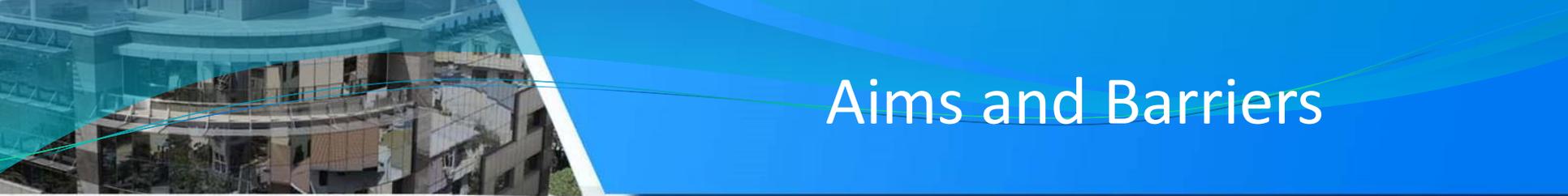
GREATER MALE' CENTRAL POWER STATION AND TRANSMISSION GRID

WITH DEMAND FORECAST FOR 2035



Potential RE capacity





Aims and Barriers

- Our current aim is to increase RE penetration as much as possible.
 - STELCO will install PV arrays on available roof-space within our compound in a few months.
- Limitations on the level of RE injection
 - Small & Independent Grids
 - Limitation on direct feed RE systems
 - Available, applicable and accessible roof space
 - Technical expertise
- Institutional & Regulatory
 - Need a framework to encourage RE technologies
 - Policies need to be formulated and implemented at a national level that encourages the utilities to manage RE penetration



Thank You