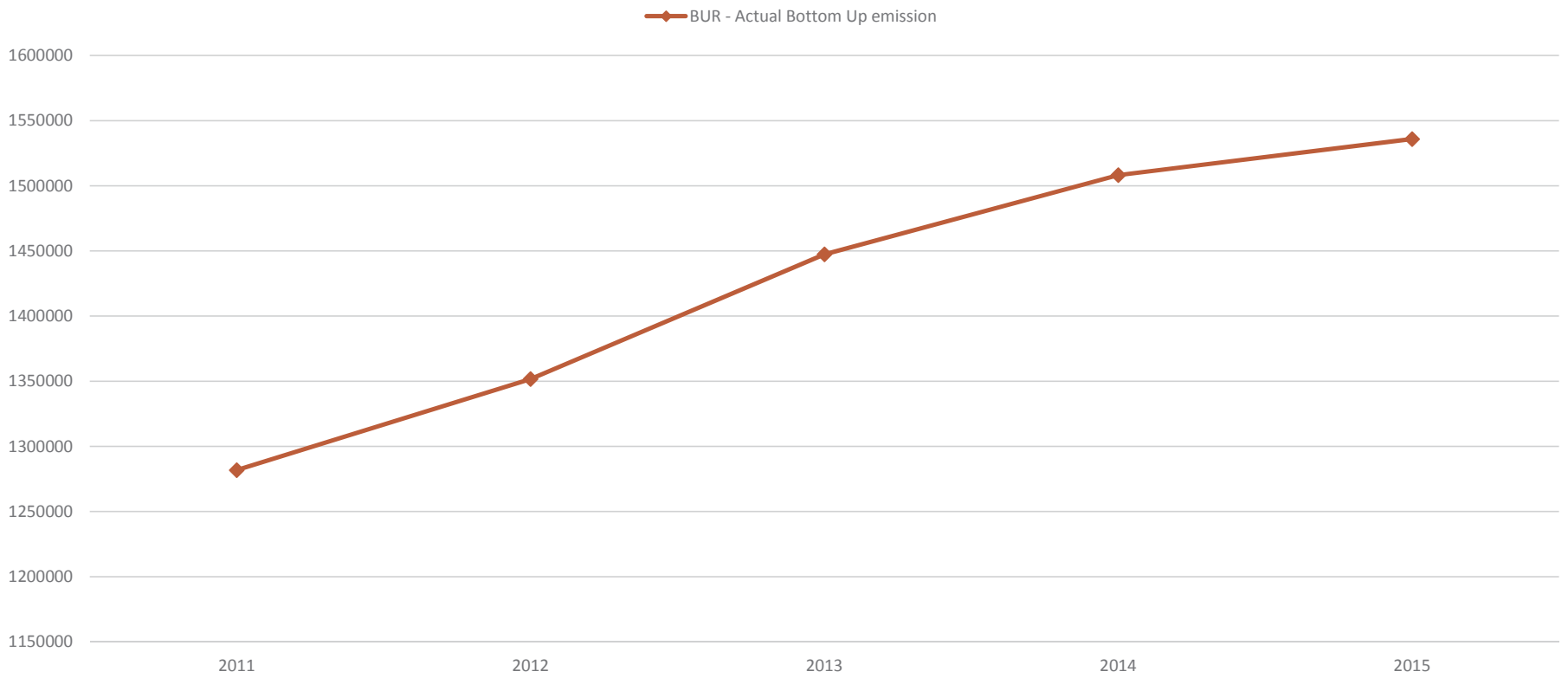
JCM in Maldives

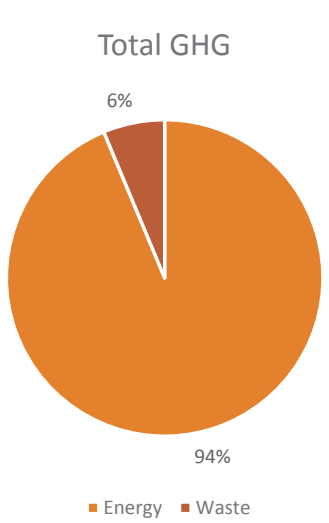
CLIMATE CHANGE DEPARTMENT

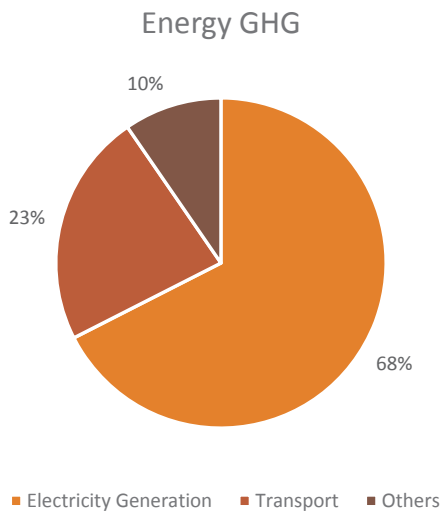
MINISTRY OF ENVIRONMENT

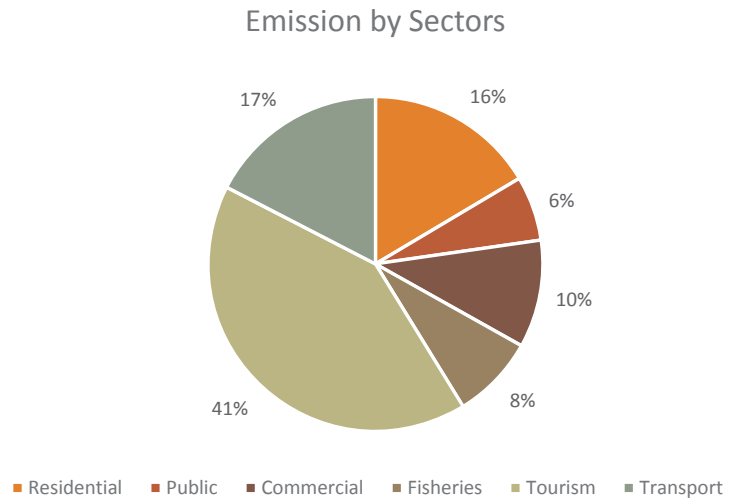
Maldives Emission Status



Maldives Emission Status







Nationally Determined Contribution

Maldives contribution to achieve the target set-out in Paris Agreement

"…well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels…"

Timeframe: Beginning 2021 to end 2030.

Unconditional Reduction

"In accordance with Decisions 1/CP.19 and 1/CP.20, Maldives communicates that it intends to reduce unconditionally 10% of its Greenhouse Gases (below BAU) for the year 2030"

Conditional Reduction

"The 10% reduction commitment expressed above could increase up to 24% in a conditional manner, subject to access for low cost financial resources, technology transfer and capacity building.

Nationally Determined Contribution

- The main actions identified are from electricity consumption and generation sector
  - Efficient air-conditioning
  - Upgrade power generation systems to increase efficiency
  - Use energy efficient products
  - Introduction of PV systems
  - Increase solar water heaters
  - Creation of enabling environment through policies, awareness and institutional strengthening
- conditional scenario, the main focus will be given to use more friendly fuel sources in the energy sector and also to introduce more efficient processes in transport sector.

Challenges in mitigation

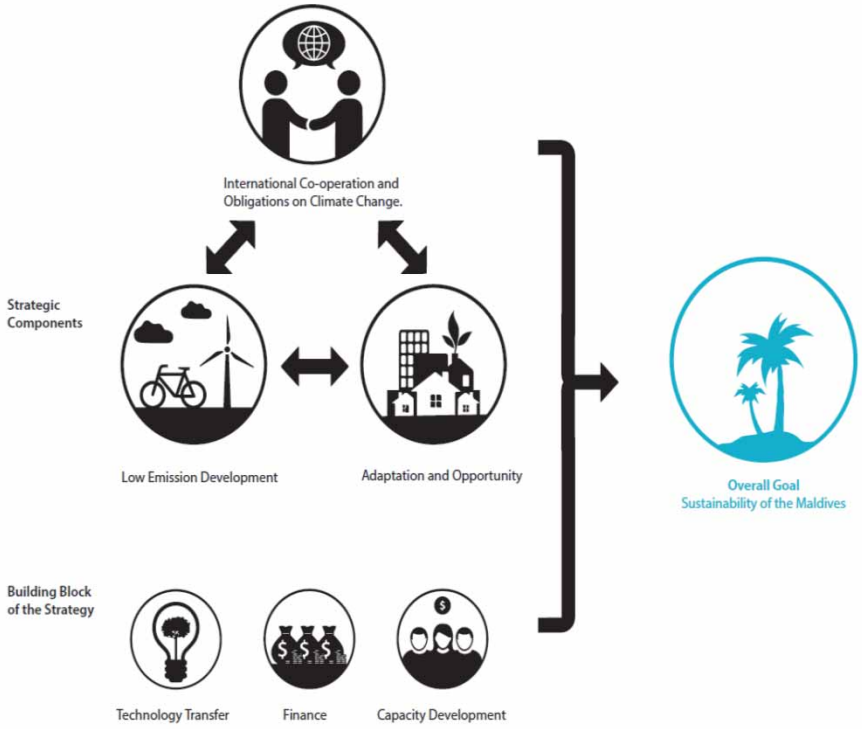
- The introduction of alternative energy options in the Maldives is constrained by the limited land area and the separation of these small islands by sea
- limited land area and cheaper alternative diesel based power generation systems poses a major challenge to the introduction of solar PV systems to the country.
- low wind speeds make it difficult to harness wind as an alternative energy option.
- The Maldives also lacks geothermal resources.
- Individual standalone grids makes it difficult to introduce a higher capacity and higher efficiency energy production systems

Key Sectoral Policies and Regulations

- Policy decision to meet majority of daytime peak with PV or renewables (large part being under taken by SREP projects)
- New regulations for private sector investment on RE
  - Independent Power Producer regulation
  - Feed-in tariff regulation
  - Net-metering regulation
- Push for an alternative to HFC (refrigerant with high GWP) for cooling
- Codes, regulations, standards, guidelines and recommendations for Energy Efficiency in pipeline
- Initiate a national low-carbon programme for the tourism sector - 4TMP (2013-2017)
  - At least 75% of resorts to have implemented measures to reduce carbon by the end of 4TMP implementation period
  - Where feasible, encourage resorts to base utility facilities in nearby communities, thus providing for better integration of resort operations with the island communities.

Maldives Climate Change Policy Framework

- Vision
  - "To protect Maldivian National status as a nation from the adverse impacts of climate change and to build its capacity to ensure a safe, sustainable, resilient and prosperous future."
- Objectives:
  - Foster and guide a national plan of action to address climate change
  - Promotes a coordinated approach to strengthen the capacity of Maldives
  - Set out the strategic priorities for scaling up the commitments
  - Build and strengthen on existing policies, plans and institutional structures



JCM in Maldives

- Maldives signed the bilateral agreement with the Government of Japan for the introduction of the Joint Crediting Mechanism (JCM) on 29 June 2013.

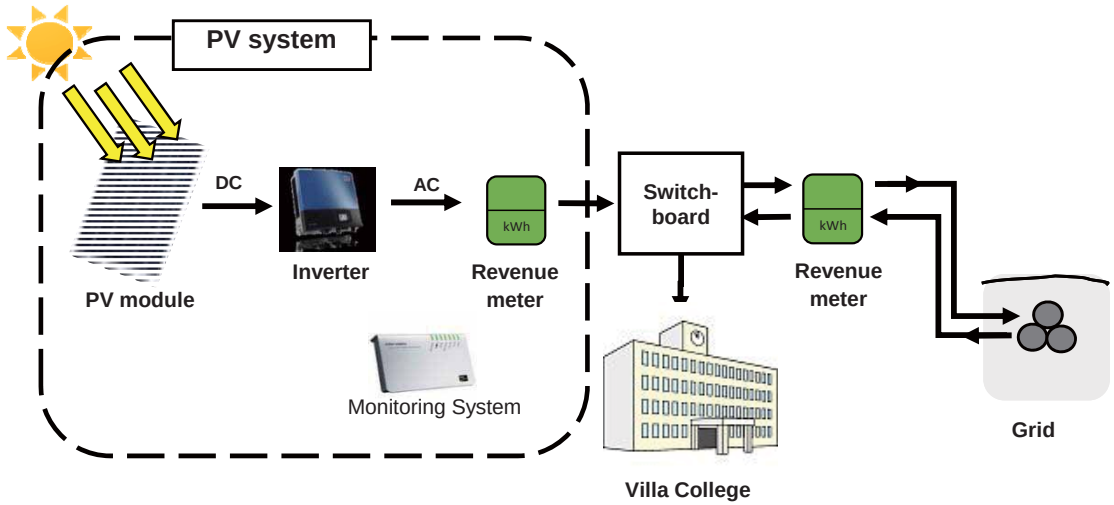
Joint Committee

- Held the first Joint Committee meeting on 20 March 2014
  - Approved basic rules and guidelines for JCM
- Approved methodologies for JCM project
  - Displacement of Grid and Captive Genset Electricity by Solar PV System (2015)
- Registered for JCM project
  - School Building Rooftop Solar Power Plant Project(2018)
- Issued first JCM credits in Maldives in 2019

JCM in Maldives – Registered projects

Villa Project

- Subsidized via MOEJ financing scheme
- Install **186kW** grid-connected roof top solar PV system
- Private sector partners (Pacific Consultants CO., LTD. / Villa Educational Services Private Limited,)
- Credits issued for the project: 155 Credits
- Shared among;
  - Government of Japan (50%)
  - Government of Maldives (10%)
  - VES Pvt Ltd : (40%)



JCM in Maldives – Feasibility studies

Deep Sea Cooling project for a proposed new airport terminal – by Hitachi

- Found ideal natural conditions for such a project
- There was potential demand and contingencies plan

Interconnecting grids between community island and a resort island – by PCKK

- Potentially feasible
- However the there were incompatibilities with the rule set applied on those two types of islands

Wind feasibility - Koei

- Feasible to an extent in North Central region

JCM in Maldives – On going Projects

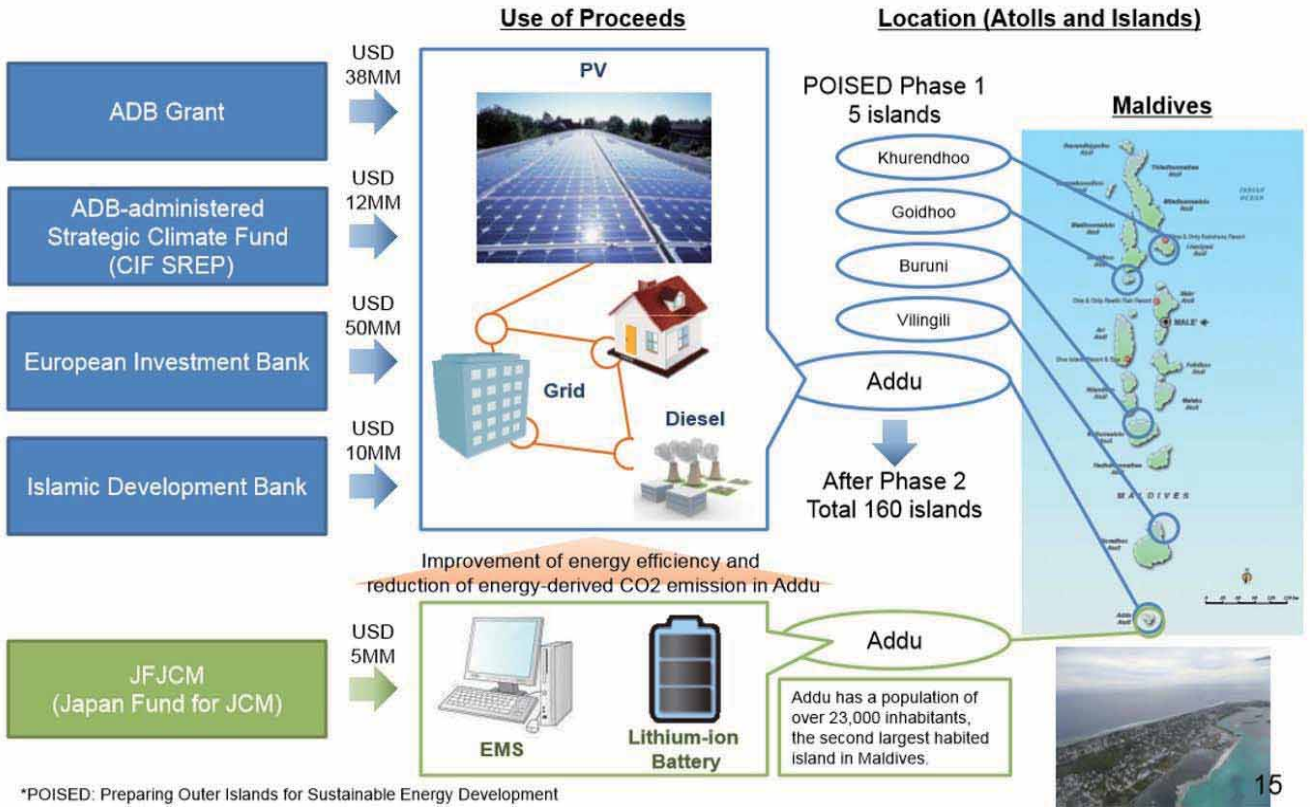
- $5 M Grant to Addu atoll subproject - JFJCM
- Install **smart micro-grid technology** with advanced battery system and energy management system (EMS)
- Increase Solar PV penetration level in the island (33% - 54%)

✓Suppression of PV and load fluctuations

✓Large amounts of renewables integrated to the grid

✓DG operation point optimization

✓Expected emission reduction ~2000 tCO2/yr



Source: International Cooperation Office Ministry of the Environment, Japan (MOEJ)

JCM in Maldives - Challenges

Lack of awareness about JCM and/or general market based mechanisms for mitigation among local private sector

Lack of scale

Difficulty establishing bilateral partnerships in private sector

Thank you