MALÉ CITY COUNCIL

Enhancing Energy Self-Sufficiency and Efficiency through the Adoption of Renewable Energy Sources

The 10th UCLG ASPAC CONGRESS

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Energy self-sufficiency

Rising temperatures contribute to urban heat island effects, exacerbating energy demands for cooling and creating public health risks

Malé faces severe water security challenges as the city relies almost entirely on
energy-intensive desalination plants for potable water. vulnerable to fuel price fluctuations, power disruptions and climate impacts. The city needs additional electricity for desalination or greater storage of water

Rising energy costs make energy self-sufficiency critical for economic stability and long-term viability in Malé.

Challenges include:

Geographic isolation

Islands are often isolated from mainland grids, making energy supply and demand balancing difficult and increasing costs for both infrastructure and fuel

Space constraints

With over 211,000 people living on just 8.3 km², large-scale energy infrastructure is difficult to install.

Technical and Infrastructure Hurdles

Insufficient local expertise, a lack of materials, and outdated energy infrastructure create barriers to adopting and integrating new renewable technologies

Potential for smart microgrid systems tailored to island needs.

Nationally, subsidies for electricity generation are ~MVR 2 billion annually.
Locally, ~MVR 19 million is spent on electricity bills annually

Regional leadership: Malé's role in SIDS advocacy positions it to attract climate finance and pilot innovative energy solutions.
Digital infrastructure: With 97.3% internet penetration, smart energy management systems are feasible.
Solar energy potential: Malé has high solar irradiance, ideal for rooftop solar systems.

100%

As per Census 2022 the % of households with electricity in Male' City

The ASPIRE Project

The Maldives has a net-zero target by 2030, one of the most ambitious targets for an island nation. To help meet this target, the ASPIRE project has supported two rounds of competitive bidding of solar Photovoltaic Independent Power Producers (PV IPPs) with a total generation capacity of 6.5 megawatts (MW) in the Greater Malé region. A comprehensive risk mitigation package was financed by the Bank and offered by the government to reduce risks and leverage private sector investment.

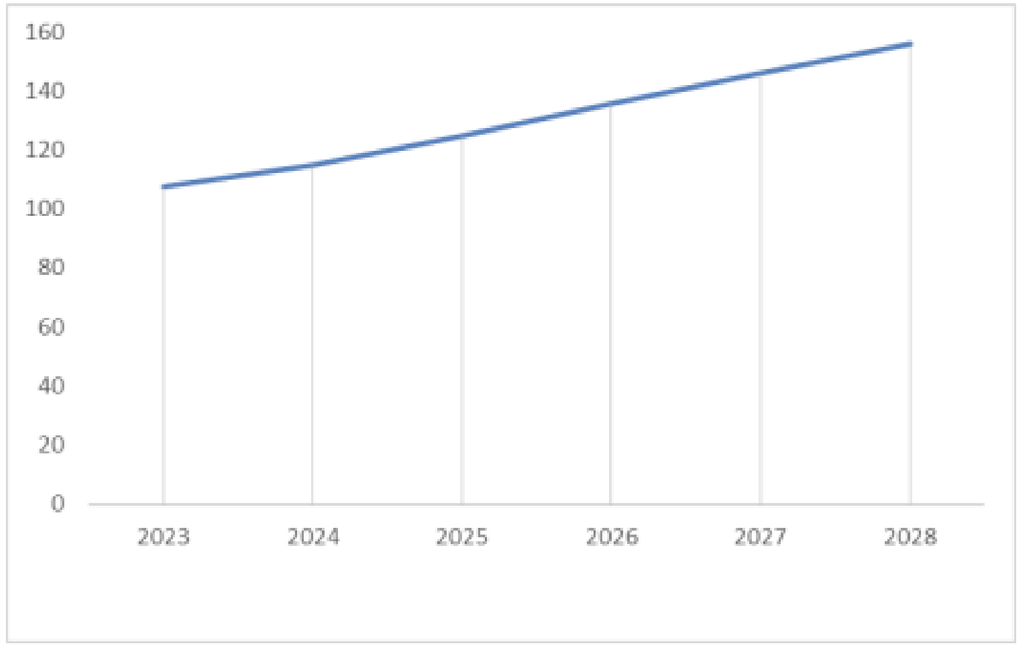
Transport in the city

In Malé City, the Maldives Transport and Contracting Company (MTCC), a State-Owned Enterprise (SoE), launched bus services using electric buses, Currently operating 6 EV Busses. Recently they have announced the introduction of 100 EV taxis.

This initiative demonstrates the potential for sustainable transport solutions to reduce carbon emissions and improve urban mobility.

Potential for growth

Figure 3: Forecast of the Peak Day Demand in the Greater Male' Region
(megawatt)



Shift to Solar Energy (Photovoltaic Systems)

- Install solar PV panels on rooftops of public buildings, starting with buildings in Hulhumalé and Vilimalé with more open roof space.
- Target: Offset 30–50% of current electricity consumption with solar by 2027.
- Potential annual savings: MVR 1.5 – 2.6 million.

1 Water security

Malé City Council to partner with MWSC to pilot a renewable energy–powered desalination system (e.g., solar-hybrid) to reduce dependence on fossil fuels.

2 Funding partners

Prioritise investments in renewable energy.

3 Vehicle decongestion

To promote decongestion, there can be quotas for EV vehicles, while gradually phasing out fossil fuel burning vehicles

Acknowledgements

We thank you for your continued support in our efforts to be on the right side of history in addressing climate change

Contact

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