Industrial wind turbine Tuvalu

Why should Tuvalu invest in wind energy?
Development of wind energy offers another opportunity to Tuvalu: to tackle the important issue of water supply. When the supply of electricity exceeds the demand,the additional capacity can be used for water desalinization or water purification.

What is the main source of energy in Tuvalu?
The primary energy consumption represents the upstream supply. The only national energy source is biomass(18% of total consumption). Photovoltaic and thermal solar contribute for less than 1%. The balance of supply is oil (Fig. 2). Tuvalu is close to being a totally oil dependent economy.

What is Tuvalu's energy plan?
Tuvalu has two stated goals: o To generate electricity with 100% renewable energy by 2020 o To increase energy efficiency on Funafuti by 30%. The Plan is intended for use by the Government of Tuvalu (GoT), the Tuvalu Electricity Corporation (TEC), potential donors, community representatives and other relevant stakeholders.

What is the Tuvalu solar power project?
The Government of Tuvalu worked with the e8 group to develop the Tuvalu Solar Power Project,which is a 40 kW grid-connected solar systemthat is intended to provide about 5% of Funafuti 's peak demand,and 3% of the Tuvalu Electricity Corporation's annual household consumption.

How much energy is wasted in Tuvalu?
Only 3,232 toe (71%) of primary energy supply reached an end-use category. 1,341 toe (29% of primary energy supply)was wasted,mainly due to low electricity generation efficiency. Tuvalu's electricity consumption is increasing rapidly at a 3.8% yearly average rate over the last ten years. It reached 4,121 MWh in 2004.

How can photovoltaic energy be used in Tuvalu?
This technology could also be used for drying copra quickly and effectively. o To produce electricityfrom PV cells. Photovoltaic energy,in use in Tuvalu for over 20 years,is a promising electricity production solution but where there is also significant room for technological and economical improvement.

To meet these ambitious targets, Tuvalu must develop 6 MW renewable energy electricity generation capacity in the next eight years. The initial capital cost of solar arrays, wind turbines and batteries to replace the current energy demand is estimated to be A$52 million.

yield assessment of the Tuvalu wind project, located on the Fongafale islet, in Tuvalu. A single wind farm configuration was considered, comprising 1 Enercon E44 900 kW wind turbine with 44 m rotor diameter and

45 m hub height for a total installed capacity of 900 kW. 15.2 months of data from a Lidar installed at the site were available to 3E.

Photovoltaic know-how should be developed in order to benefit Tuvalu in the longer term. To develop wind energy: Wind energy offers a good RE (Renewable Energy) option for island conditions: a mature and well established technology that needs little maintenance, a very advantageous cost compared to diesel generation.

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The World Bank is supporting Tuvalu Electricity Corporation (TEC) to deliver parts of a Master Plan for Renewable Energy and Energy Efficiency (MPREEE) through the Tuvalu Energy Sector Development Project (ESDP). This Environmental and Social Management Framework, or ...

Onshore wind: Potential wind power density (W/m2) is shown in the seven classes used by NREL, measured at a height of 100m. The bar chart shows the distribution of the country"s land area in each of these classes compared to the global distribution of wind resources. Areas in the third class or above are considered to be a good wind resource.

The wind energy calculator will encompass the following characteristics, [1]: - Provide accurate and reliable predictions - Use siting to suggest optimal turbine location - Provide economic evaluations of wind turbine projects that can be easily compared to other renewable, alternative, or conservation energy systems.

Under the Majuro Declaration, which was signed on 5 September 2013, Tuvalu has commitment to implement power generation of 100% renewable energy (between 2013 and 2020), which is proposed to be implemented using Solar PV (95% of demand) and biodiesel (5% of demand). The feasibility of wind power generation will be considered. [3]

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It was recommended that Bonus 1 MW/54 wind turbine is the best turbine for the site since its capacity factor was estimated to be 26.61%. Shu et al. (2015) used three different Weibull approximation methods to analyze the wind resource for five sites in Hong Kong; two of which were on a hilltop.

Report documents the wind energy potential for the island Funafuti. Also has a wind resource map of the island with an assessment of the economic feasibility. Report was prepared by Ecology Management ApS of Denmark for SPREP.

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