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## **Analysis of efficient methods of water production using renewable energy based reverse osmosis desalination process and its applications in India**

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The problem of fresh water shortage is faced by most countries as a result of increase in consumption and growth in population. Water consumption per person is in the order of 50 litres in the developing countries and exceeds 500 litres in certain western countries. About 97.5% of world's water resource is salt water. The desalination units are using conventional sources but are not very common in India because of the very high power requirement. RO based desalination is the only method having low power consumption, hence suitable for using wind power. The remote places where there is no grid connection, standalone renewable energy based applications plays vital role. Availability of wind energy in abundance and lower efficiency of grid connected wind power could be overcome by implementing non grid connected wind power, to large scale applications which also increases the utilization of wind power to 100% by overcoming the restrictions with grid. Also the cost per unit power for wind power equipment in India is twice that of coal power while the capacity factor of wind turbines is generally 0.21 – 0.25, which is less than 1/3 of that of fossil fuel power. The cost of power could be reduced by simplifying the design of equipment without grid connection and so the water production cost is reduced. This paper analyses the possibility of efficient method of desalination process using non-grid wind power.

### **Biography**

B Shanthi Saravana is doing her PhD in SSN College of Engineering, Anna University, Tamil Nadu. She has completed her Masters degree in Business Administration in Madurai Kamaraj University and Masters degree in Engineering Power Electronics and Drives in Anna University Coimbatore, Tamil Nadu. She has 12 years of teaching experience and 2 years of industrial experience. She has published more than 10 papers in international conferences and published 3 papers in reputed journals.

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