

Maintenance Alternatives Related to Costs of Wind Turbines Using Finite State Markov Model

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Abstract : The cumulative costs for O&M may represent as much as 65%-90% of the turbine's investment cost. Nowadays the cost effectiveness concept becomes a decision-making and technology evaluation metric. The cost of energy metric accounts for the effect replacement cost and unscheduled maintenance cost parameters. One key of the proposed approach is the idea of maintaining the WTs which can be captured via use of a finite state Markov chain. Such a model can be embedded within a probabilistic operation and maintenance simulation reflecting the action to be done. In this paper, an approach of estimating the cost of O&M is presented. The finite state Markov model is used for decision problems with number of determined periods (life cycle) to predict the cost according to various options of maintenance.

Keywords : cost, finite state, Markov model, operation and maintenance

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