

**Section «Management»**

**Lifecycle costing for gas turbines**

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My thesis for my master degree in “Energy management and sustainability” is a joint project between Politecnico di Milano and MGTU im. Baumann. I already wrote an article about this work in “МОЛОДЕЖНЫЙ НАУЧНО-ТЕХНИЧЕСКИЙ ВЕСТНИК” which is a Russian journal which collects the best projects coming from all bachelor students, master students, specialists and PhD students of all the universities of Russia. The thesis starts analyzing energy business: characteristics, demand features, ecological restrictions, network characteristics, business forms and technology impact (most important). The targets of this analysis are: -to understand how energy business works, -to find out the main criticalities, -to find out the most important key success factors for this kind of companies; -consequently to find out which are the most important tools which allow to manage them. The study then concentrates on Lifecycle costing applied to energy systems, especially on maintenance policies (which are the best maintenance policies for every kind of parts). The model then analyzed is the FMECA (Failure Mode, Effects, and Criticality Analysis) for gas turbines, model which has been developed by Alla Efimovna Brom , professor in MGTU im Baumann. The analysis shows that opportunity costs of not sold energy are not taken into account, if the gas turbine doesn't work than electrical energy is not sold with consequent losses in the revenues. My aim is to study the possibility to overhaul the model in order to take into account these costs. At the end there will be a case study, so an application of the new model found in a real gas turbine. This case study will probably be done for the gas turbine of the energy plant located in “Moscow city”, it's the energy plant which has to provide heat and electrical energy to the skyscrapers which are now under construction.

**References**

1. Alla Efimovna Brom, MGTU Im. Baumann, abrom@yandex.ru ,+79169751701
2. Sergio Terzi , Politecnico di Milano , sergio.terzi@polimi.it