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**A Way to Sustainable Development: Establishing Both Energy and Exergy
Management System Standards**

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Abstract

Sustainable development has been defined in many ways for years while it has an international agreement definition, which consists of three key pillars: economic, environmental, and social. When its environmental pillar is considered, the concept of energy efficiency, the twin sister of the environment, comes to mind. There is also a strong link between energy and its quality, which is exergy. Energy is always conserved while exergy is not conserved, destroying due to irreversibilities and only conserving in ideal processes.

In June 2011, the International Organization for Standardization (ISO) released ISO 50001, “Energy Management Systems (EnMSs)-Requirements with Guidance for Use” and revised it in 2018 while exergy management system (ExMS), of which approach was proposed by the author in 2016 for the first time, has not been considered to be a standard yet.

The main objective of this talk is to present how to establish EnMS and ExMS structures at enterprises. In this regard, the EnMS standard was briefly explained first while the importance of the approach to the ExMS standard was highlighted. Its application to Yasar University, the first university in Turkey, which achieved TS EN ISO 50001:2011 Certification on 5 January 2016, was then summarized. Next, the similarities between two standards were given. Finally, some sound concluding remarks were listed.

Keywords: *Energy Management, Energy Management System Standard, ISO 50001, Exergy Management*

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