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## **Introducing Material Flow Cost Accounting and Creating Visibility –Analyzing MFCA in practice based on a longitudinal case study–**

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### **ABSTRACT**

Environmental management accounting (EMA) is a calculation technology that connects environmental problems to the economy. Many researchers have studied the technological development of EMA. However, few studies have examined how the visibility created by EMA affects organizations' activities. Therefore, this paper focuses on the visibility by material flow cost accounting (MFCA) as one EMA tool and aims to clarify the interaction process between MFCA and organizations for about ten years in one company. In particular, we analyze roles of actors involved with MFCA descriptively.

One Japanese company introduced MFCA as an environmental management tool to overcome operating losses. After the first successful trial of MFCA at one of its plants, it was extended to company-wide and systematized by heterogeneous actors. In this process, not only was MFCA affected by actors but also MFCA actively affected to the actors. Over the years, the systematization of MFCA progressed and the actor network surrounding MFCA changed. Additionally, the definition of MFCA was changed and its activities themselves became stagnant. This case study illustrates the transformation of MFCA through changes in the actor network and that the basic concept of MFCA was maintained in both different networks.

**Keywords:** Material Flow Cost Accounting, accounting change, actor network, environmental management accounting