

ECO-EFFECTIVE CHANGEOVERS; UNDERPINNING THE CAPABILITIES

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ABSTRACT

A changeover is a necessary but non-value adding activity that involves several actions such as setup operations; material/machine part replacements and cleaning. Changeovers are especially critical for multi-product environments where flexibility, time and quality are the key requirements of the production system. While conducting a changeover each action or inaction creates certain impacts such as loss of time, materials, energy and water and also produces waste, wastewater and emissions. These impacts not only reduce productivity but can bring additional costs for; energy, waste management and water treatment. Furthermore, the time lost between the changeovers, reduces flexibility and increases the lead time, therefore limiting company's manufacturing capabilities. An eco-effective changeover implies the state when a changeover operation has been improved to provide the same or even a better outcome, without any negative impact on the environment and at a minimum cost to the company. This paper addresses impacts caused by changeover activities and proposes a conceptual framework to guide the improvement process towards eco-effective changeovers.