

## Chapter 2

# The Evaluation of Environmental Capital Projects: The Way Forward

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### **ABSTRACT**

*Traditional capital investment appraisal models are, in many cases, biased against environmental projects. What is required is a multi-attribute approach that includes an assessment of the environmental benefits. The financial appraisal profile (FAP) model seeks to address this issue. By making the correct investment decision in the first place and by involving senior managers in the appraisal process, the organization is better placed to achieve project success. Adopting the FAP model with the inclusion of an environmental assessment in the form the “environmental score index” will help focus top management on an increasingly important corporate strategy issue. An illustrative case study is used to outline the important aspects of this new approach. The FAP approach, which is presented in this chapter, will help to fill a gap in the environmental investment literature, where there is a paucity of comprehensive, structured, and transparent methodologies that can prove acceptable to management decision makers from a variety of functions and viewpoints.*

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## **BACKGROUND**

There is no doubt that environmental investments, with the goal of achieving environmental sustainability, is an important topic. Environmentally influential capital investments have started to gain significant attention in the literature, due to the increase of pressures by various stakeholders on organisations and industry to be more proactive with regard to environmental sustainability in their processes, products and practices (Zhu et al., 2016). Management have a moral obligation to address the issues of environmental sustainability when making capital investment decisions (Moody-Stuart, 2014).

The importance of environmental sustainability has been raised in the literature (see, for example, Daly, 1990). Sarmento et al., (2005) found that 92% of Portuguese companies made environmental investment because of the negative impacts of probable ecological accidents. They also found that a large part of this investment was in tangible capital assets. In fact, environmental risk was found to be a significant moderator of the relationship between corporate environmental performance and organizational financial performance, which impacts environmental investment decisions (Semenova & Hassel, 2016). However, traditional appraisal models are inappropriate many uniquely regulated industries (Tebbutt, et al., 2003).

It has also been recognised that the myriad of subtle ways environmental issues impact companies cost and revenue streams is often a first step in developing a proactive environmental management program (Henri et al., 2016). The limitations existing with various investment appraisal approaches when it comes to environmental issues, including the need to incorporate strategic considerations into corporate decision-making, planning and control processes, has long been recognised by environmental accounting researchers (Burritt, 2004; Bai & Sarkis, 2013). The mainstream academic literature on investment appraisal appears to focus on traditional financial evaluation techniques and tools with little recognition of environmental issues as a factor in the decision process of organisations (Ross and Wood, 2008).

It has been empirically found that environmental benefits accrue over a much longer time-horizon than typical investments in organisational projects (Regnier & Tovey, 2007), making their inclusion into investment appraisal and justification even more difficult. In addition to long time planning horizons, there are issues with the various costs and benefits that are associated with green decisions and factors. The United States' Environmental Protection Agency's (USEPA) well known cost categorisations (USEPA, 1995) include conventional, hidden, contingent, relationship/image, and societal costs, which range, respectively, from easier to measure to most difficult to measure categories. Thus, there will also be a mixture of relatively tangible traditional costs to less tangible and non-traditional cost categories. It is

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