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The capital budgeting process and the energy trilemma - A strategic conduct analysis

Liz Warren^{a,*}, Lisa Jack^b^a Business School, University of Greenwich, Park Row, Greenwich, London SE10 9LS, United Kingdom^b Accounting and Financial Management, Faculty of Business and Law, University of Portsmouth, Richmond Building, Portland Street, Portsmouth PO1 3DE, United Kingdom

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ABSTRACT

This paper examines capital budgeting and its role in the ‘energy trilemma’. The key focus is on the role of knowledgeable agency in the analysis of strategic conduct. In particular, this study demonstrates how accounting tools can be used by executive managers, who, whilst dominant in their own organisations, are themselves subordinate to government in the United Kingdom and at the European level. The strategic conduct of actors is examined in a narrative, theorised case study setting spanning an 11-year period from 2006 to 2017. The principal contribution to knowledge from this study is the extent to which strategic investment accounting has played a role in changing regulatory and government policy in a privatised industry. Government and regulators were forced to take the generators’ concerns seriously, because the generators (based on knowledge derived from capital budgets) restricted their capital expenditure rather than mobilising their resources. The generators highlighted that not only was this a problem of environmental sustainability and price for consumers, but also one of long-term supply. They argued that the government had to address all aspects of the trilemma when creating policy.

1. Introduction

Encouraging the right type of investment is essential to the success of any energy policy. Suitable investments would maintain low prices, achieve reductions in emissions, and keep the lights on (Warren, 2014). The World Energy Council has identified supply, pricing, and emissions as the three major global energy concerns, termed within the industry as ‘the energy trilemma’. However, establishing a suitable energy policy is subject to complex regulatory systems, which both impose controls on prices to consumers and set out environmental targets for companies. This can be specific to a particular country. In the energy industry, any type of change requires complicated discussions and debates with regulators, politicians and generators. Although the relative dominance of each group of actors varies across the world, each country faces a similar problem: how to balance the energy trilemma.

The energy trilemma is recognised as an urgent problem in Great Britain (GB),¹ the geographical setting for this case study. It is urgent because energy prices for consumers rose during the main data collection period for the case study, 2006–2014 (DECC, 2014a²), while security of supply is an unresolved issue (Ofgem, 2012,³ Johnson, 2014, Grigorjeva, 2015, Yiakoumi & Rouaix, 2016,

* Corresponding author.

E-mail addresses: e.warren@gre.ac.uk (L. Warren), lisa.jack@port.ac.uk (L. Jack).¹ The paper will refer to GB when discussing investment problems because Ireland has a separate energy system, which is regulated by its own body.² DECC is a department called the ‘Department of Energy and Climate Change’.³ Ofgem - Office for Gas and Electricity Markets.

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DBEIS, 2017⁴). In 2011, the industry regulators acknowledged that the country's market energy structure was no longer fit for purpose (DECC, 2011), highlighting the distinct lack of significant new investment. According to DECC (2014b) the requirement for reduced emissions is the only component of the energy trilemma that is currently being achieved. This has led to public outrage, and questions over why such a crucial commodity such as electricity is apparently being irresponsibly managed (Inman, 2014; Morison, 2014). Appreciation of the significance of lack of investment is central to understanding the energy trilemma. As Falkner (2014, p. 188) argues, "energy is central to the survival and prosperity of human society".

During the period covered by the study, the industry argued that the *laissez-faire* approach by the Government regarding investment in new power plants discouraged capital investment. We examine how senior managers at the electricity generation companies used accounting in communications with regulators and governments when seeking change. In particular, we investigate the extent to which senior managers used accounting techniques strategically during the implementation of the revised Large Combustion Plant Directive (LCPD). The LCPD is a European directive aimed at reducing nitrogen oxide (NO_x), sulphur dioxide (SO₂) and dust emissions to combat environmental problems such as acid rain. Their conduct was calculated both to transform the structures within which they had to work, and to change the conduct of others.

In response to the calls for studies which focus on the role of a knowledgeable agency in the analysis of strategic conduct (Coad, Jack and Kholeif, 2016; Englund, Gerdin, & Burns, 2011; Roberts, 2014), we focus on the roles of knowledgeable agents in using contradictory structures to generate conflict. We observed agents using their knowledge of those structures and the actions of others in a deliberate way. Agency concerns how they actively influence, motivate, start an argument or discussion, and whether outcomes are intended or unintended. As Stones has argued, conduct analysis examines how we feel when things are against us, in relation to established norms (Stones & Jack, 2016). The changes in this case study do not concern accounting systems but rather the accountability of investment decisions, thereby using strategic conduct to assess strategic behaviour. We will be drawing on Giddens' original Structuration Theory (ST) and building on Stones' (2005) development of the knowledgeability of agency. This enables us to contribute to the development of structuration theory in accounting research by analysing how people use accounting to control and change others (Coad, Jack, & Kholeif, 2016). Therefore, our main themes are:

- 1) How did the agents think about the context?
- 2) How did the agents plan their conduct?
- 3) What actions were taken using capital budgeting?
- 4) What were the outcomes of actions based on knowledge?

The theoretical contribution emerging from the analysis and interpretation of the case study strengthens our understanding of how change can be accounted for using strategic conduct analysis. A principal criticism of Giddens' ST is that it is often used to demonstrate how institutions become established and maintained, but not how structures and actions adjust over time. This is attributable to the underdeveloped epistemology of the original theory, and its concept of strategic conduct analysis. How particular agents draw strategically on their knowledge of structure and the conduct of others when they attempt to alter the knowledgeability and perspectives of other agents, shows how structures might become altered.

The remainder of this paper is structured as follows: Section 2 examines the capital budgeting literature; Section 3 introduces the methods employed within this case study research; Section 4 provides an overview of the theory; Section 5 describes the background to the environmental regulations imposed in the UK; Section 6 presents the case study; Section 7 is the discussion, and Section 8 provides the conclusion.

2. Literature

Investing in capital projects, such as power stations, is a complex process. Management accounting offers many numerical techniques that aid capital budgeting for decision-making in such projects. CIMA (2009)⁵ found that 60% of organisations use Net Present Value (NPV), 55% use the payback method, 43% use Internal Rate of Return (IRR) and 18% use the Accounting Rate of Return (ARR) for capital budgeting analysis. These are often referred to as the traditional methods, whilst other more sophisticated methods, such as Real Options, sit outside that group. Only two are based on the use of discounted cash flows: NPV and Real Options. NPV is the most prevalent method encountered in our study.

Alkaraan and Northcott (2006) state that Strategic Investment Decisions (SIDs) can be distinguished from operational investments by considering level of risk, intangible outcomes, the size of investment, and long-term impact on company performance. The majority of SIDs use capital budgeting as a decision making tool; the basic definition of capital budgeting is "a process concerned with decision making in respect of specific investment project choices and the total amount of capital expenditure to commit" (CIMA, 2009, p. 7). However, when dealing with high levels of risk-taking, the process can be much more complex than the definition suggests. Pfeiffer and Schneider (2010, p. 1) extend the basic definition of capital budgeting and propose a process of capital budgeting that "defines a set of rules to govern the way in which managers at different levels of the hierarchy produce and share information about investment projects". This could be extended to encompass the entire communication process within the organisational field, including with regulators. The investment decision-making process also includes the assessment of human behaviour

⁴ Department that was created after DECC. DEBIS is the 'Department of Energy, Business and Industrial Strategy'.

⁵ CIMA is the Chartered Institute of Management Accountants.

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