

# Chapter 40

## Finding the Sweet Spot of Sustainability in the Energy Sector: A Systems Approach to Managing the Canadian Oil Sands

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### ABSTRACT

*Energy security and sustainability have become two of the most critical and fundamentally interdependent issues of our time. Canada is a key player in the global energy industry and home to a major oil sands hydrocarbon reserve which, after 50 years of massive investments and technological advancements, has evolved from a “fringe” oil supply to one of strategic importance in global energy security. However, the resource is in its early stages of development, and efforts to fully exploit it have been hampered by a range of factors, including strong opposition from various stakeholder groups. This Chapter provides a framework for a systems-based approach to managing the oil sands that integrates stakeholder management and domain-based collaboration theory.*

### INTRODUCTION

Energy security and sustainability have become two of the most critical and fundamentally interdependent issues of our time. Meeting the world's energy needs was historically viewed as a diver-

sification challenge; on the eve of World War I, First Lord of the Admiralty Winston Churchill famously stated, “*Safety and certainty in oil... lie in variety and variety alone*” (Fox, 2002: 3). Almost 100 years later, diversification remains the foundation of energy security. However, its context has changed considerably from Churchill's time,

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when resources were considered to be limitless and a handful of countries dominated the market.

Today's global energy economy is characterized by growing demands from rapidly-expanding emerging economies such as China's juxtaposed against a race for increasingly tight supplies; geopolitical tensions and instability in some major producing regions (e.g. Nigeria, Venezuela); an East-West recalibration in the global balance of power; and escalating concerns about environmental impacts. A quadrupling in the number of spills from North American pipelines and offshore oil rigs over the past 10 years, and an associated rise in the rate of barrels spilled per barrels produced, have underscored the difficulties of satisfying our consumptive demands in a sustainable manner.

The International Energy Agency (IEA) defines energy security as the uninterrupted physical availability of energy at a price that is affordable and in a manner that respects the environment (International Energy Agency [IEA], 2009). This contemporary view of energy security recognizes the important role that the environment plays in how we meet the world's energy needs. Taking into consideration the entire "wells-to-wheels" supply chain in the decision-making process and the interrelationships between the various players within the system has also become a key element of energy management.

Canada – the fourth largest oil exporter after Saudi Arabia, Russia, and the United Arab Emirates (and the number one foreign supplier to the U.S. market) – is a key player in the global energy industry. It is home to the Canadian oil sands (COS), a major hydrocarbon reserve which, after 50 years of massive investments and technological advancements, has evolved from a "fringe" oil supply to one of strategic importance in global energy security. However, the resource is still in its early stages of development, and efforts to fully exploit it have been hampered in recent years by a range of factors, including strong opposition from various stakeholder groups.

This Chapter provides a framework for a systems-based approach to managing the oil sands that integrates stakeholder management and domain-level collaboration. The next section presents the theoretical foundation of stakeholder management and systemic domain-based collaboration for sustainability. This is followed by a description of the oil sands resource within the context of global energy supply and the COS, in particular. The case is presented from the perspective of the firms, as the managers of the oil sands resource. The final section presents the conclusions.

## **Theoretical Foundation**

### **Stakeholder Management and Sustainability in Resource-Extraction Industries**

Early theory development in the business field viewed stakeholder relations in terms of dyadic ties between a firm and a particular stakeholder group (Freeman, 1984), for example, the firm and a government regulatory agency, or the firm and its shareholders. However, given the complexities in today's global business environment and its almost-unlimited number of stakeholders, the focus has shifted to the networks (or systems) of relationships that firms become embedded in (Andriof, Waddock, Sutherland-Rahman & Husted, 2002; Bertels & Vredenburg, 2004).

According to this model, the firm lies at the centre of the network, forming ties and managing stakeholders (typically) on an issue-by-issue basis. Relationships between both the firm and its stakeholders, and between different stakeholder groups within the network, are viewed as important to its success. Hoffman (1999) refers to these networks as "fields" that form around strategic issues such as sustainable resource management. Fields evolve, generating a greater array of options and, ultimately, better solutions. Crane (2000) also argues that firms can use stakeholder col-

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