

Canada's Oil Sands Innovation Alliance: A Win-Win Strategy for Canada?

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(1) Overview

On March 1, 2012, twelve oil companies signed the Canada's Oil Sands Innovation Alliance (COSIA) charter. Together, these companies account for over four fifths of total production in the Alberta's Oil Sands. The charter clearly states the signatories' vision, shared beliefs and commitments (see <http://www.cosia.ca/our-charter/charter/>). The alliance members pledge to collaborate in green R&D and share the discoveries amongst themselves. The goals are to improve the industry's environmental performance and to increase oil production in the Oil Sands in a sustainable fashion.

The main objectives of this paper are to demonstrate that: (i) the formation of COSIA has been rational; and (ii) its strategic effects should motivate: (a) all Oil Sands' operators to join the club, to improve their environmental performances, and to increase their production levels; and (b) the regulator to adjust its environmental regulations. The strategic effects that are investigated are as follows: (i) changes in green R&D levels; (ii) changes in environmental performances; (iii) changes in the degree of competitiveness; and (iv) changes in regulatory policy instruments.

According to the chairman of the Energy Resources Conservation Board of Alberta (ERCB), the formation of COSIA may have been partly motivated by the enactment of ERCB's Directive 74, "Tailings Performance Criteria and Requirements for Oil Sands Mining Schemes." In such a case, some of the oil companies have reacted to stiffer regulations by agreeing to form a coalition to share R&D information on technologies that lower their environmental impacts.

However, the collective actions of COSIA members may lead to greater collective R&D effort and improved environmental performance of the entire industry, which then may generate different regulatory responses. Cost reductions promoted by collective action should not only improve collective environmental performance, but also the degree of competitiveness of each COSIA member in the global oil market relative to the degree of competitiveness improvement that each non-member company can achieve on its own. This realization should provide each COSIA member with an extra incentive to remain in the coalition as well as provide each current non-member with an incentive to join the coalition.

(2) Methods

The methodology is game-theoretic. I build a multi-stage game in which oil companies in Canada and the rest of the world take local and transboundary pollution regulations as given and make R&D efforts before they engage in

oil production and competition. The equilibrium concept I adopt is Perfect Coalition-Proof Nash (PCPN) equilibrium (see Bernheim et al (1987)).

(3) Results

Some preliminary findings are as follows:

1. COSIA will grow in size and contain all Oil Sands' producers.
2. COSIA will produce significant win-win gains for Canada – i.e., improvements in environmental performance and industrial competitiveness in the world market.
3. Canada's regulator may increase the stringency of local pollution standards and reduce the stringency of transboundary pollution permit prices.
4. Canada's national income will rise.

(4) Conclusions

Our theoretical findings demonstrate that COSIA represents a win-win strategy for Canada. Oil producers have incentives to join the club and share both green R&D efforts and costs. The Canadian industry benefits from reducing its regulatory costs and thus from becoming more competitive in the world market. The Canadian society benefits from the reduction of environmental impacts and the increase in income produced by industry. COSIA represents a remarkable institutional innovation, which should be mimicked by oil producers in other nations.

References

Bernheim, B. Douglas, Bezalel Peleg and Michael D. Whinston (1987), "Coalition-Proof Nash Equilibria I. Concepts," *Journal of Economic Theory* 42, 1-12.