Pacific Institute *for the* Mathematical Sciences

PIMS Lunchbox Lecture

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12:00 pm

@ the University of Calgary Downtown Campus, 906 – 8 Avenue SW, Calgary

Valuing and Operating Energy Infrastructure: A quantitative approach using a real options lens

The profit obtained from operating energy infrastructure depends on fluctuating market prices. Oil production is a topical example. When oil prices are low enough, it makes sense to shut in the wells. Shutting in a well avoids producing petroleum to sell at a loss, but involves its own transition costs. Three related questions are i) at what oil price level should a producing well be shut in ii) at what oil price level should a shut well be opened and iii) what impact does the option value created by the ability to open and close wells have on the value of an oil property.

In this talk I discuss how the "real options" approach allows these questions to be answered using techniques borrowed from the quantitative finance world of options pricing. I present examples drawn from an example of a corn ethanol facility.

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