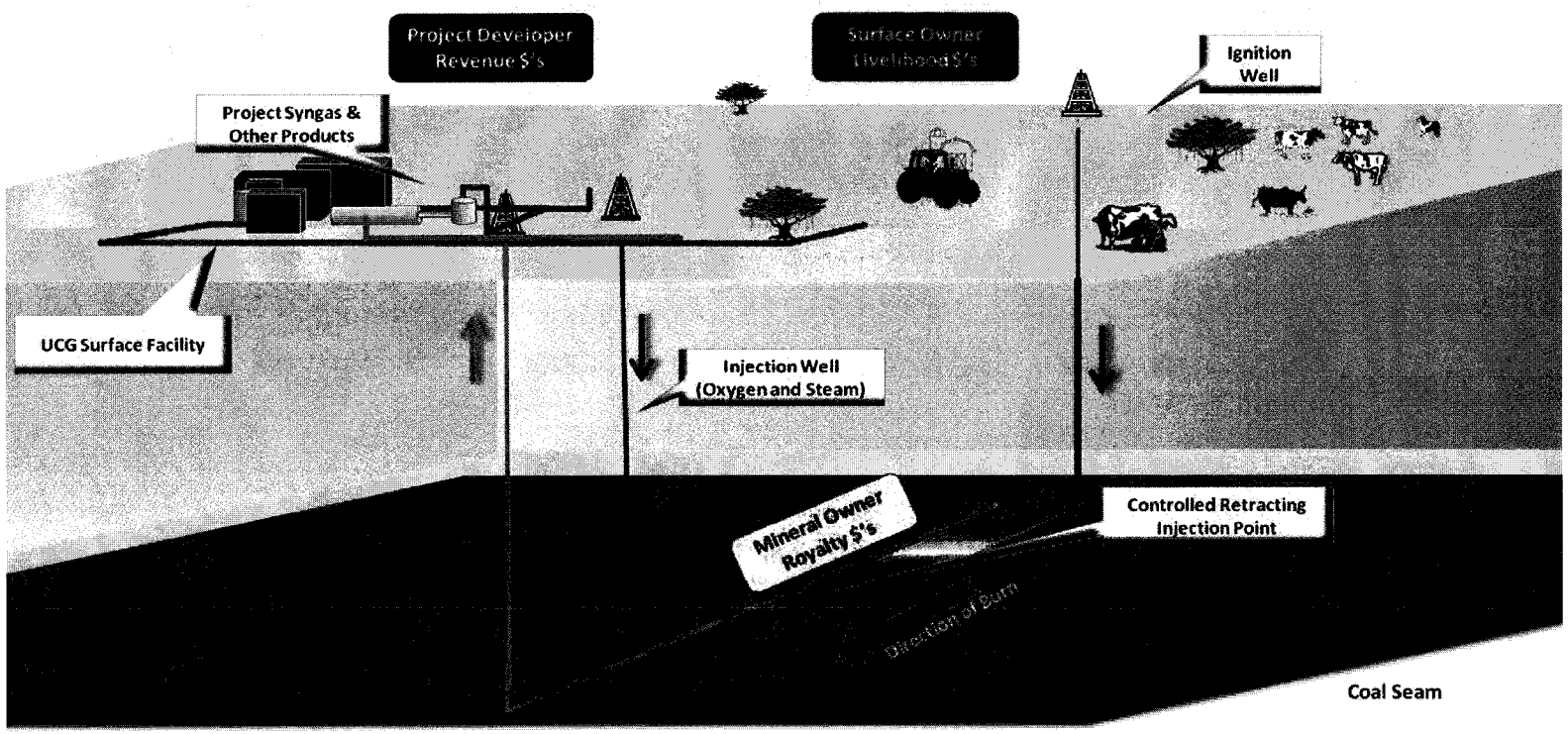
EXHIBIT 4
DATE 3/16/11
SB 292

Advanced Coal Technologies

Underground Coal Gasification

Underground Coal Gasification

Executive Summary

Underground coal gasification (UCG) converts coal in-situ into a gaseous product, commonly known as synthesis gas or syngas through the same chemical reactions that occur in surface gasifiers. Gasification converts hydrocarbons into a synthesis gas (syngas) at elevated pressures and temperatures and can be used to create many products (electric power, chemical feedstock, liquid fuels, hydrogen, synthetic gas). Gasification provides numerous opportunities for pollution control, especially with respect to emissions of sulfur, nitrous oxides, and mercury. UCG could increase the coal resource available for utilization enormously by gasifying otherwise unmineable deep or thin coals under many different geological settings. A 300-400% increase in recoverable coal reserves in the U.S. is possible. For developing countries undergoing rapid economic Expansion, including India and China, UCG also may be a particularly compelling technology.

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