**The Changing World of Natural Gas (2015-2030)**

*Ray Leonard (Hyperdynamics Corp.) and Arthur Berman (Labyrinth Consulting Inc.)*

A careful study of the geology, engineering, economics and politics of natural gas reveals a few broad themes that dominate a new emerging picture:

* Conventional reserves account for 90% of total natural gas reserves, approximately 2/3 of which are found in just four countries; Iran, Russia, Qatar and Turkmenistan. These countries have developed or are in the process of developing strategies and infrastructure to dominate the Europe and Asia gas markets. Outside of North America, conventional reserves will continue to dominate the world gas market during the 2015-2030 period.
* The growth in shale gas production in the USA and Western Canada will allow North America virtual “gas energy independence” through the end of this decade. However, there are limits to the shale gas revolution that will unfortunately become clear in the next few years. USA shale gas producers have massively overcommitted sales of low price gas to domestic industry, conversion of power generation from coal to natural gas to satisfy CO2 emission reduction targets, pipeline exports to Mexico and liquefied natural gas (LNG) exports. Production should plateau by the end of the decade, resulting in a price increase eventually to close to the world level. The USA should be a significant ***importer*** of gas by 2030.
* During the next 15 years, the gas markets of East and South Asia will for the first time be connected by pipeline to the gas reserves of Siberia, Central Asia and the Middle East. This will help to eliminate the potential of a significant price differential between the European and Asian markets. Current plans for new pipeline and LNG facilities exceed expected increase in demand; the 2015-2030 period will be characterized by competition between the two gas transport methods for markets.
* Political events will continue to have an impact on the market in the coming years. A combination of financial pressures and geopolitical opposition (including sanctions) are undercutting Russia plans to assume a dominant global role in the Eurasian gas market. On the other hand, with gas reserves comparable to Russia, more centrally located and lower production/transportation cost, Iran is poised to enter the world gas export market as a major player, especially with the removal of sanctions.
* The collapse in world gas prices, associated with the oil price collapse is exposing, earlier than expected, the limitations of high cost production and LNG export plans in the US from the shale plays. The reduction in LNG costs below the negotiated pipeline costs from Russia and Central Asia to European and Asian markets have changed the competitive balance between pipelines and LNG, at least over the next few years.