

## Public Executive Summary -

The design, manufacture and demonstration of a very low cost booster compressor based upon a unique regenerative compression process is proposed. The compressor concept and design configuration is termed the Polyvane Compressor, and its intended application is within the marginal or stripper well market.

The objective is to demonstrate a lower cost method of extracting natural gas from small, low pressure wells through the use of the proposed Polyvane Compressor, independent of any other compression means, or to increase production by use in series with existing or newly installed reciprocating or rotary positive displacement compressors.

The goal is to demonstrate the potential to manufacture the Polyvane booster at a cost that equals existing small horsepower reciprocating compressors, but at three (3) times the flowrate. Additionally, the booster compressor is to provide reliable operation, efficient performance, three year operation before expected overhaul and be field serviceable.

A secondary goal is to demonstrate the use of the Polyvane Compressor as a means to significantly decrease the cost of compressors required for higher discharge pressures, by supercharging the suction pressure of these compressors and thereby lowering the size and cost required to achieve needed volume flowrate.

The Polyvane Compressor, a dynamic compressor, employs an innovative internal flowpath that allows exceptionally simple machining and construction. The operating constraints and design configuration suggests that the compressor can be fabricated largely out of non-metallic materials, thereby allowing low cost production techniques to be employed.

The methodology proposed to demonstrate attainment of project goals consists of detail component design, creation of manufacturing drawings, development of manufacturing processes for the prototypes, manufacture of prototypes, assembly of prototypes, laboratory performance and endurance testing and field trials. The project is to demonstrate proof of concept and to provide practical field experience. The resultant product of this proposed project is the preliminary hardware and technical knowledge to continue commercialization and ultimate product introduction.