

CLEAN RESOURCES

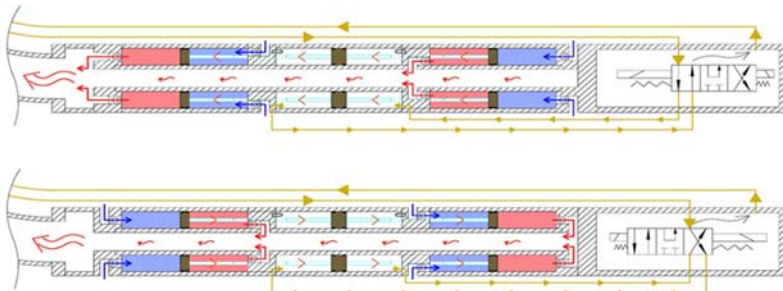
ADVANCED HYDROCARBONS

CLEANER HYDROCARBON PRODUCTION - RECOVERY TECHNOLOGIES

FUNDING DETAILS

Next Generation Downhole Green Quad-Pump System With 60% Lower Energy Consumption and Reduced Life-Cycle Costs for SAGD and Conventional Oil Production

PMC has developed its metal on metal Green Downhole Quad-Pump System (PMC Quad Pump), tailored to reduce life-cycle costs and improve reliability in Alberta’s steam assisted gravity drainage (SAGD) and conventional oil production. Having completed successful lab-scale testing, PMC will design, manufacture and test production pump units at CFER’s testing facility and in field well deployments to reconfirm its performance against incumbent lifting technologies. PMC’s Quad-Pump will contribute to Alberta’s clean energy targets by reducing wellhead electrical power consumption by an estimated 60% and will help reduce operational and maintenance costs due to its reliable design.



RECIPIENT:
PMC Pumps
Canada Inc



PARTNERS:
Pending SAGD
partner, Pending
Conventional Oil
partner



TOTAL BUDGET:
\$7,665,000



AI FUNDING:
\$1,900,000
(TIER- ERP)



PROJECT DATES:
JAN 2021 –
DEC 2022



PROJECT TRL:
Start: 6
End: 9

APPLICATION

PMC Pump will target both electrical submersible pump (ESP) market and Rod-pump markets, bringing significantly higher energy efficiency and higher reliability as well as much higher pumping capacity than rod pumps. The PMC Quad-Pump will simultaneously compete into both conventional oil production and SAGD high-temp oil production segments in Canada, with a different variant of the products in each segment.

ALBERTA INNOVATES CLEAN RESOURCES

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PROJECT GOALS

The key goals of the project are:

- Further improve the design of the first PMC prototype pump system that has been tested in the state-of-art PMC pump test lab
- Manufacture and assemble the pilot production units according to the improved design.
- Validate and de-risk PMC's Quad Pump initial production units at C-FER Technologies' test lab as a simulated downhole environment of oil field applications
- Validate the Quad Pump system performance and reduced energy usage in conventional and SAGD production wells through pilot field deployments in partnership with leading producers.

BENEFITS TO ALBERTA

The successful implementation of this technology or use of the knowledge generated could result in:

- Job creation and enhanced manufacturing skills for PMC and local manufacturing contractors, suppliers, and supporters in Alberta
- Reductions in electrical energy consumption at the wellhead resulting in up to 350 tons/year fewer GHG emissions for each typical SAGD well or other conventional well implement with a PMC Pump System
- Reduced operational and maintenance costs for producers' oil production wells



**2 New
Products/Services**



9 Project Jobs



150 Future Jobs



**356.7 kt Future
GHGs Reduced**

CURRENT STATUS

AUG 2021

PMC is incorporating improvements to the pump design, following last year's lab testing, and finalizing the production design. PMC started manufacturing pump components, procurement of long lead-time items, and the negotiation of hydraulic station subcontracting with local companies. PMC is also finalizing the design of electrical and PLC control systems and will shortly build and integrate the first unit for the pump system. Finally, PMC has been discussing with C-FER Technologies an extensive test protocol and plan for the Quad Pump to simulate SAGD oil well production environment.