FUNDING DETAILS

Online Optimization and Surveillance of SAGD Production Wells - Pre-Commercial Scale up

In the transitioning energy economy, SAGD Producers are now faced with the challenge of sustaining production at high efficiency and reduced emissions, with fewer engineers. Advances in in-situ production technology and analysis have reduced steam-oil ratios greatly reducing GHG emissions. Madala has developed advanced software for full-physics SAGD well modeling for completion design and optimization to address the manual surveillance associated with the production analysis and monitoring. In a recent three-well pilot project, models were successfully deployed in an online environment for automated surveillance and optimization, providing well test analysis, virtual flow metering and increased production. This project intends to expand the surveillance scope and scale the pilot capabilities to a pre-commercial stage which includes both gas-lift and ESP wells, injectors and pad-wide surveillance, analytics, reliability and optimization.

RECIPIENT:
Madala Software Inc.

PARTNERS:
Suncor Energy

TOTAL BUDGET:
$432,568

AI FUNDING:
$182,892
DICE

PROJECT DATES:
MAR 2022 – MAR 2023

PROJECT TRL:
Start: 5
End: 8

APPLICATION

The initial target market is focused to in-situ oilsands producers and operators. However, the technology platform and physics models are not limited to in-situ production. Madala's technology can effectively model any onshore or offshore well completion, reservoir fluid and artificial lift system. Madala's long-term objective is to expand the surveillance capabilities to other conventional and non-conventional production systems which will utilize multiple calculations and workflows that will be directly deployable across different resource types.

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PROJECT GOALS

The overall goal is to deliver a pre-commercial, automated Digital Twin for production surveillance and optimization applicable to injection and production wells in heavy oil production.

The specific goals of the project are:

- To demonstrate scalability of the pilot capabilities to a pre-commercial deployment of 40 – 50 wells
- To expand the pilot capabilities to include ESP and injection wells with full-pad workflows and analysis
- To provide constant, automated virtual flow measurement
- To incorporate reliability and maintenance analytics into surveillance
- To enable consistent, maintainable production increases through automated optimization

BENEFITS TO ALBERTA

- Increased royalties from provincial oil & gas resources
- Reinvestment by energy producers in Alberta which promotes rural and urban economic activity
- Expanding leading-edge knowledge and technology development positioning Alberta as a field leader. Advanced Digital Oilfield technology can be developed locally without being licensed from international companies.
- Offers substantial export potential

1 New Product/Service

1 Publication

2 – 3 Project Jobs

90 Future Jobs

CURRENT STATUS

MAY 2022

In conjunction with Suncor, the Madala team has completed injector & producer well selections to conduct test validations, NCG detection, well & pad-wide optimizations including ESP surveillance. Several pads have well models constructed and able to have the producer wells online. Work continues to break out distributed inflows into separate components and development of an inflow prototype model.