

COMPLETED PROJECT POWER SAVINGS AVERAGE 50%

THE PROJECT

- CONVERTED ESP'S TO PCP'S
- NINE WELLS
- DATA COLLECTED FOR TWO WEEKS
- THREE DIFFERENT FIELDS & RESERVOIRS
- THIRD PARTY VERIFICATION



GENERAL WELL CHARACTERISTICS

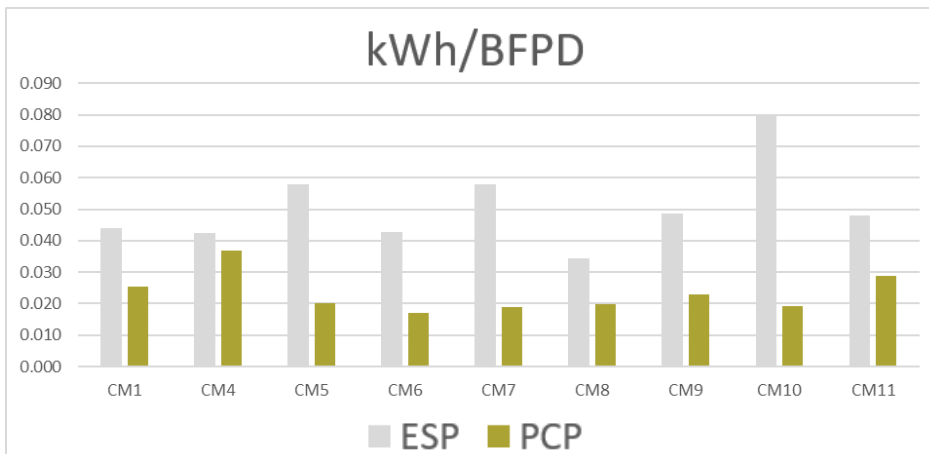
- average flow rate is 1349 BFPD (214 M3FPBD)
- average pump set depth 3308 ft (1008 metres) / 2861-4072 ft (872-1241 meters)
- average water cut 97% / 95-99% range
- average pump speed 285 RPM / 230-349 range
- average 42 HP (31 kW)
- low gas content

An oil and gas producer was researching methods to reduce electricity costs and lower their carbon footprint while maintaining or increasing production in high water cuts. The wells were equipped with ESP and the future state was to complete them with **Progressing Cavity Pumps (PCP)**.

The customer hired a 3rd party electrical verification company that commissioned a study into the power savings of **Progressing Cavity Pump Systems (PCP)** over Electric Submersible Pumps (ESP). The project focused on capital cost savings as well as long-term operational power savings and reduction in carbon footprint.

The nine-well ESP conversion project was conducted over 3 different fields and producing reservoirs during a minimum two week timeframe.

THE RESULTS



WELL	Baseline (kW/BFPD)	Verification Flow (kW/BFPD)	Electrical savings (per well)
	ESP (kW/BFPD)	PCP (kW/BFPD)	
CM1	0.044	0.026	42%
CM4	0.042	0.037	13%
CM5	0.058	0.020	65%
CM6	0.043	0.017	60%
CM7	0.058	0.019	68%
CM8	0.034	0.020	42%
CM9	0.049	0.023	53%
CM10	0.080	0.019	76%
CM11	0.048	0.029	40%

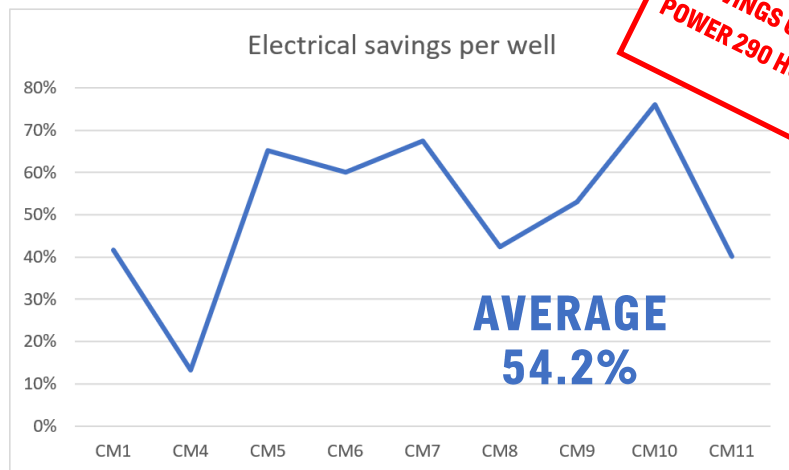
The oil producer and 3rd party electrical verification company confirmed power savings between 20%-60% (based on well conditions) using **PCP'S** over ESP's. A minimal increase in production of 3% was realized with additional room for optimization.

**NO PRODUCTION
LOSSES & AVERAGE
ELECTRICITY
CONSUMPTION
REDUCTION OF**

54.2%

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THE SAVINGS



THE ENERGY SAVINGS COULD POWER 290 HOMES!

The incredible savings achieved when converting to Progressing Cavity Pump systems, comes from both overall power reduction as well as the reduction in electrical charges based on demand.

It was noted that even more electrical savings could be realized by:

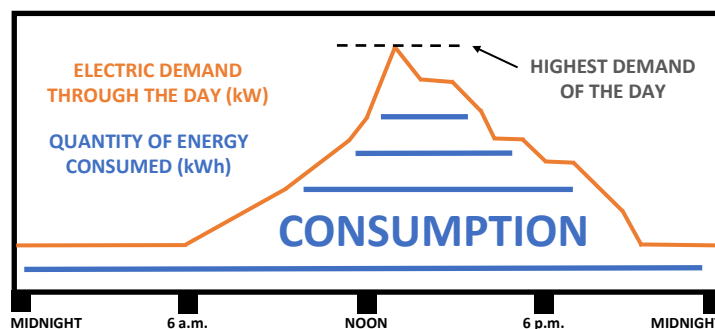
- Utilizing larger diameter tubing
- Sourcing high efficiency electric motors
- Using gas separators in high gas production wells

ELECTRICITY DEMAND SAVINGS ARE ESPECIALLY IMPORTANT

Consumption is the rate at which you consume energy.

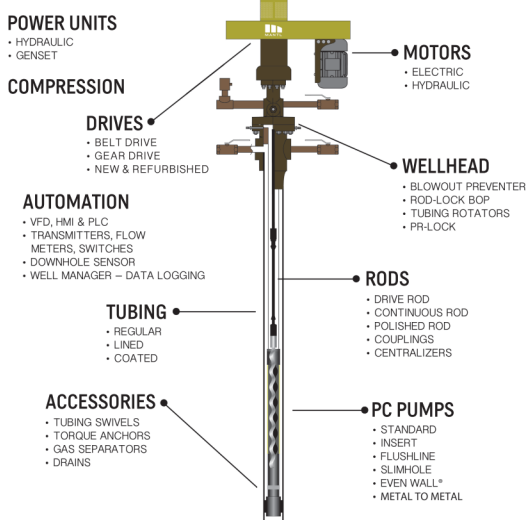
Demand charges are based on the highest level of electricity you demand at over 15 minute intervals during the billing period. The demand savings are especially important in reducing production energy costs. The reduction in demand for these 9 wells is the equivalent of 290 homes or 32 homes per well!*

*as reported in 2021 energy census for average home consumption



IF YOU LOWER YOUR HIGHEST DEMAND, YOU LOWER YOUR ELECTRICITY RATE

MANTL supplies everything you need for a complete Progressing Cavity Pump System



WHY CHOOSE MANTL?

A MANTL PCP Engineer can help design your PCP system to:

- Maximize efficiency through proper system design - **POWER SAVINGS!**
- Utilize existing, local energy savings initiatives - **CAPITAL SAVINGS!**
- Reduce energy consumption to realize ESG targets