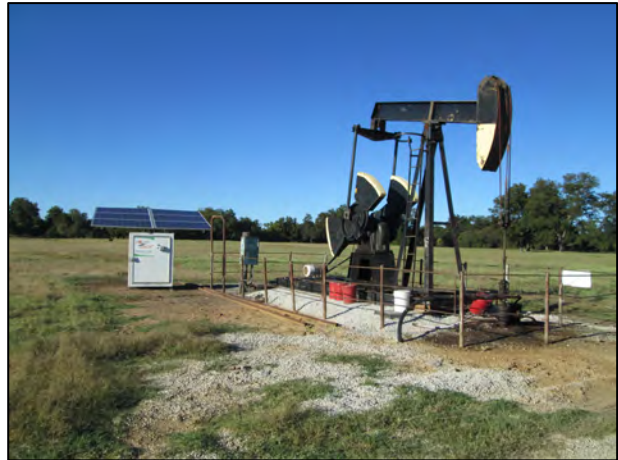


Arrow Energy Fittstown Site Lease

Location:
Fittstown, OK

Background:

This field produces 100 barrels per day on 12 pump jacks and 2 down-hole submersible pumps. All but one of the existing pumps were powered by standard across-the-line motor starters (pump jacks and submersibles). The one exception was a pump jack powered by a VFD that had break resistors added to allow for the regen-power created by the jack's imbalance. The regen-power was metered to be at 30% of the load, which is now being captured and sold back to the utility. The wasted energy from this single jack at 30% of the load was equivalent to a 20.58kw solar system. The Solar Jack system on this one field is trending towards offsetting the same energy cost as a 700kw traditional net-metered solar system.



Original System	System after Solar Jack Installation
<p>Average Power Bill: \$15,000 per month</p> <ul style="list-style-type: none"> The field contains: 12 pump jacks (two 75 hp, three 40 hp, four 25 hp, and three 30 hp), three 40 hp submersible pumps and one 200 hp water disposal pump on the utility meter Standard motor starters or across-the –line starters (violent starts and stops) Pumps pulled every 90 days on average Pumps set on clocks with an average turn off schedule at 20% Average Power Factor was 72% (no penalties were being charged by the utility, OG&E, for the poor Power Factor) 	<p>Average Power Bill: \$6,000 per month</p> <ul style="list-style-type: none"> Installed Solar Jack systems on 11 of the pump jacks Qualified the system for “Net-Metering” (to sell clean regenerated power and solar power back to the utility), a 30% Federal tax credit, and 50% bonus equipment depreciation for the first year Solar Jack controller (soft starts and stops and ability to control the jack for the “smart pump off” feature) Power Factor cleaned to 95% (now selling excess power back to the utility) With the Solar Jack system, these wells are protected from any future Power Factor penalties Decreased total power usage for the field by 40% 82% power usage reduction on the 11 pump jacks the Solar Jack systems were installed on Reduced strokes-per-minute by 4.8 strokes while maintaining the same oil production

To have the same power offset from a traditional solar system on these particular pumps, it would require a 750 kw solar system at a typical cost of \$3.00 per watt or \$2.25 million.