DDPM-PJ Field Test

Early results in Colombia

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Introduction

- 10 Wells selected as potential candidates
  - Criteria
    - Pumpjack model
    - Production rates
    - Runtime
    - Torque rating
    - Existing VFD

- 2 DDPM-PJ Installed in Colombia
  - Weatherford Maximizer C912-427-192 with ABB 800/11
  - Weatherford Maximizer C1280-427-192 with ABB 800/11

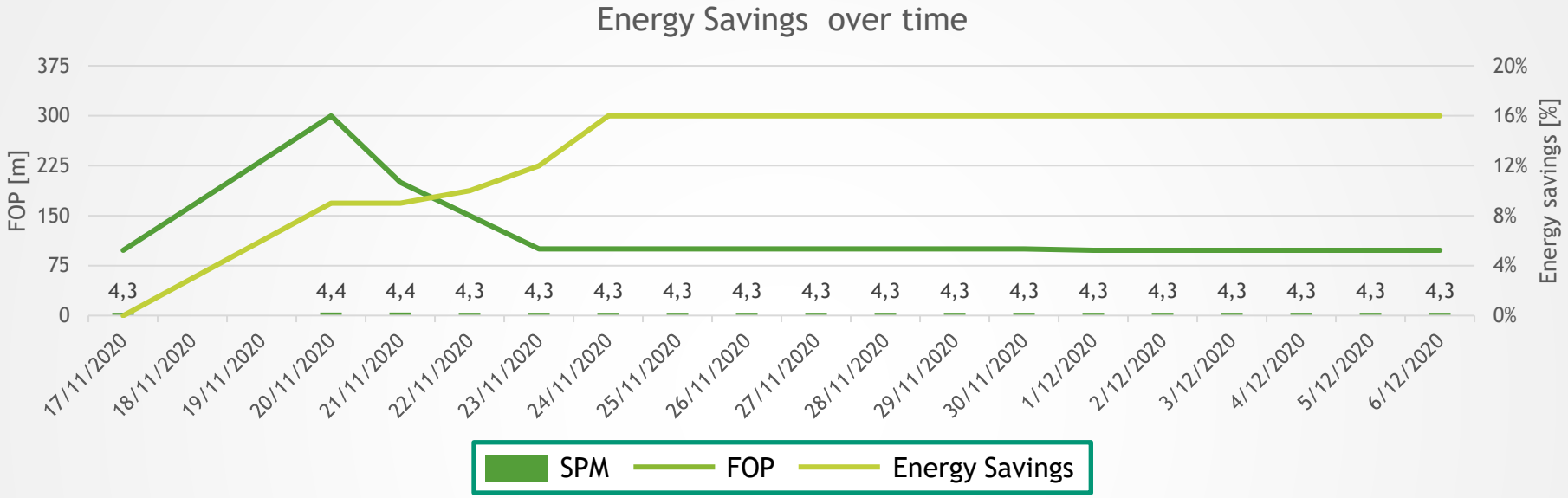
Well N°1

- Well parameters

	Induction Motor	DDPM-PJ
Unit Brand and API model	Weatherford Maximizer C912-427-192	
Stroke per minutes [in]	4.3	4.3
Stroke Length [in]	192	192
Rated motor power [HP]	100	75
Fluid level [ft]	327	398
Production rates [bopd]	235	230
B.S.W. [%]	92.8	92.8

- Total time of the installation: 6.5 hsu

Performance Well N°1



- First energy readings at the start up showed **9% of energy savings, increasing up to 16% after a week**
- At the end of November transmitting information through SCADA
- Power reduction reaches almost 27% showing a great improvement over reactive energy with a reduction of 20.35%

	Active Power		Reactive Power	
	Min [KW]	Max [KW]	Min [KVAR]	Max [KVAR]
Original [17 nov]	5,38	31,67	1,08	1,93
DDPMM [20 nov]	3,61	27,55	0,79	1,54
Power Reduction	1,77 kW	4,12 kW	290 VAR	390 VAR
Savings	**33%**	**13%**	**27%**	**20%**

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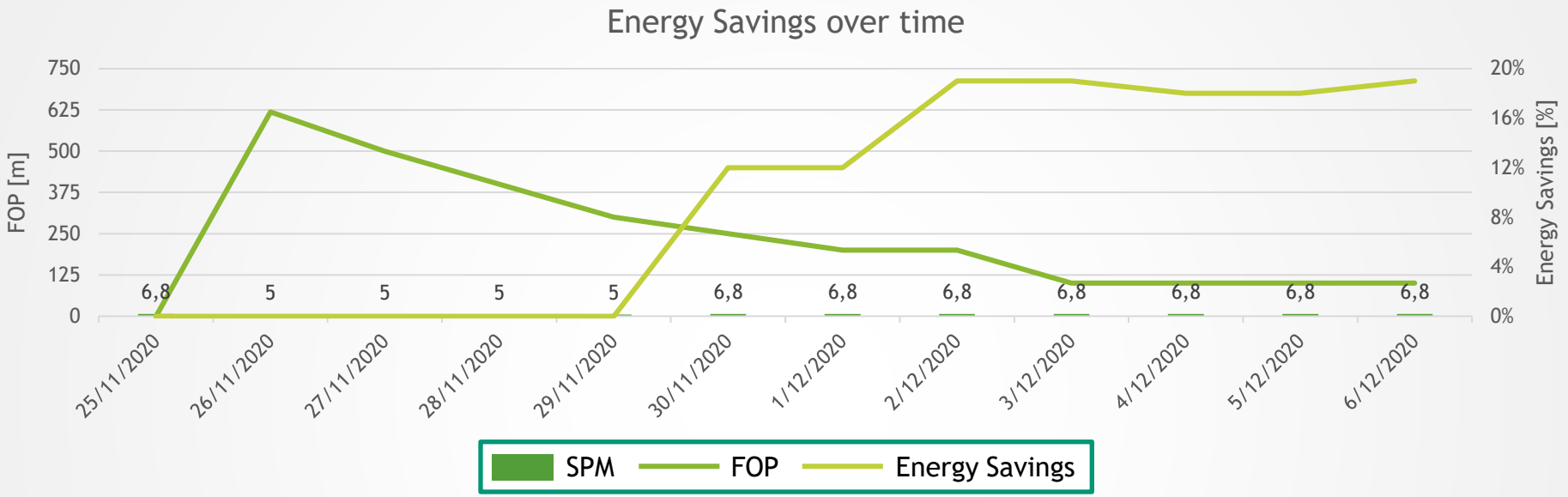
Well N°2

- Well parameters

	Induction Motor	DDPM-PJ
Unit Brand and API model	Weatherford Maximizer C1280-427-192	
Stroke per minutes [in]	6.2	6.2
Stroke Length [in]	192	192
Rated motor power [HP]	125	100
Fluid level [ft]	N/A	N/A
Production rates [bpd]	489	484
B.S.W. [%]	96.8	96.8

- Total time of the installation: 5.5 hs

Performance Well N°2



- First energy readings at the start up showed **12% of energy savings, increasing up to 19% after a week**
- At the beginning of December transmitting information through SCADA
- Power reduction reaches almost 28% showing a great improvement over reactive energy with a reduction of 33.82%

	Active Power		Reactive Power	
	Min [KW]	Max [KW]	Min [KVAR]	Max [KVAR]
Original [24 nov]	23.94	43.62	1.37	2.05
DDPMM [03 dec]	15.61	36.64	0.98	1.37
Power Reduction	5.46 kW	6.98 kW	0.38 VAR	0.67 VAR
Savings	**35%**	**16%**	**28%**	**33%**

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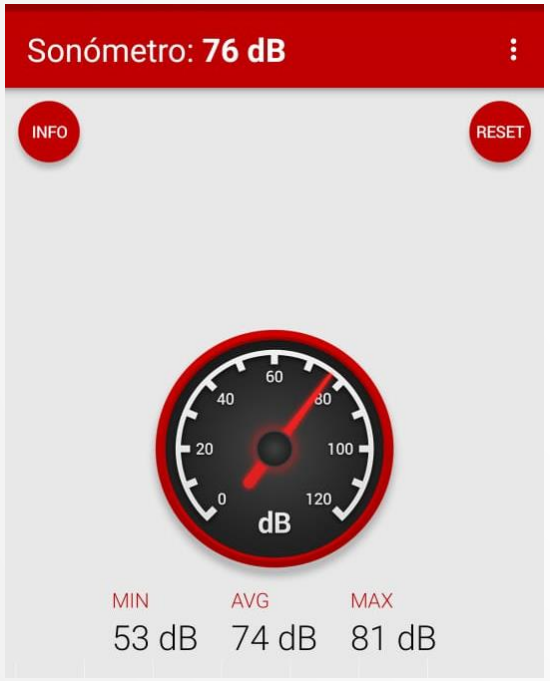
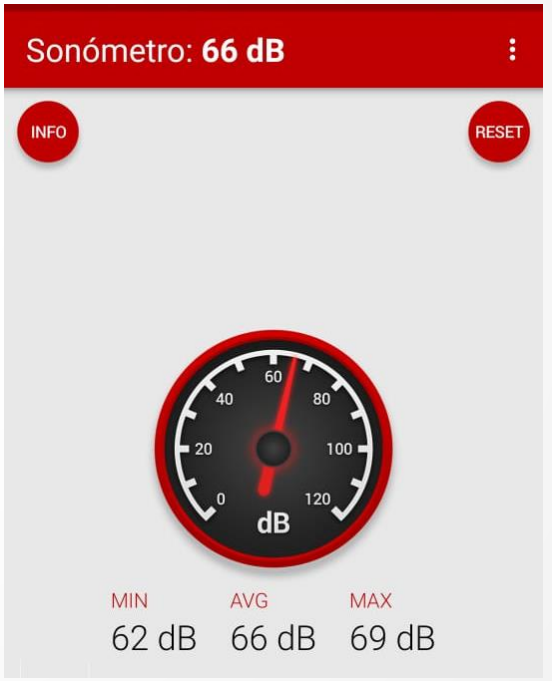
Additional information Well N°2

- Noise dB measured with induction motor and DDPM-PJ shows 15% noise with the PMM

Induction Motor



DDPM-PJ



Pictures of Installed motors

Thank you!

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