



# Fitting of Inverter to Compressor

---

INSTALLATION

Week commencing 12<sup>th</sup> Feb 2007



## Objective: Energy Saving / Cost Saving

---

- Compressor: Atlas Copco –Oil free.  
ZR3 160kW, using MD400 Drier.
- Inverter : A.B.B Type.  
Model – ACS 800.
- Installed by: Compcare & Central  
Electrical

# Results.

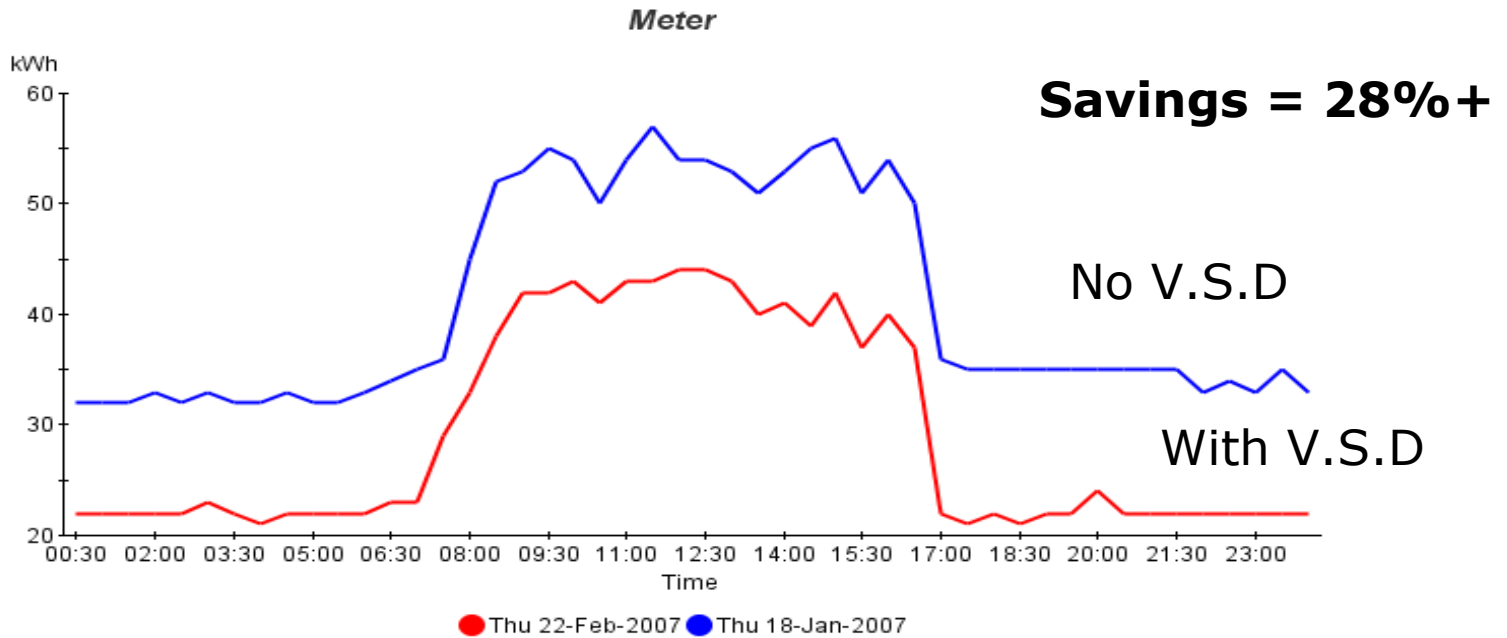
---

- From installation the electricity consumption has been compared.
- This has been done comparing Weekdays, Weekends, past periods and a similar compressor with no Variable Speed Drive Fitted.
- The following graphs show the results.

# Day Consumptions Compared (Week day)

Site : Compressor- 4  
Data Compared

Thu 22-Feb-2007(day1) and Thu 18-Jan-2007 (day2)

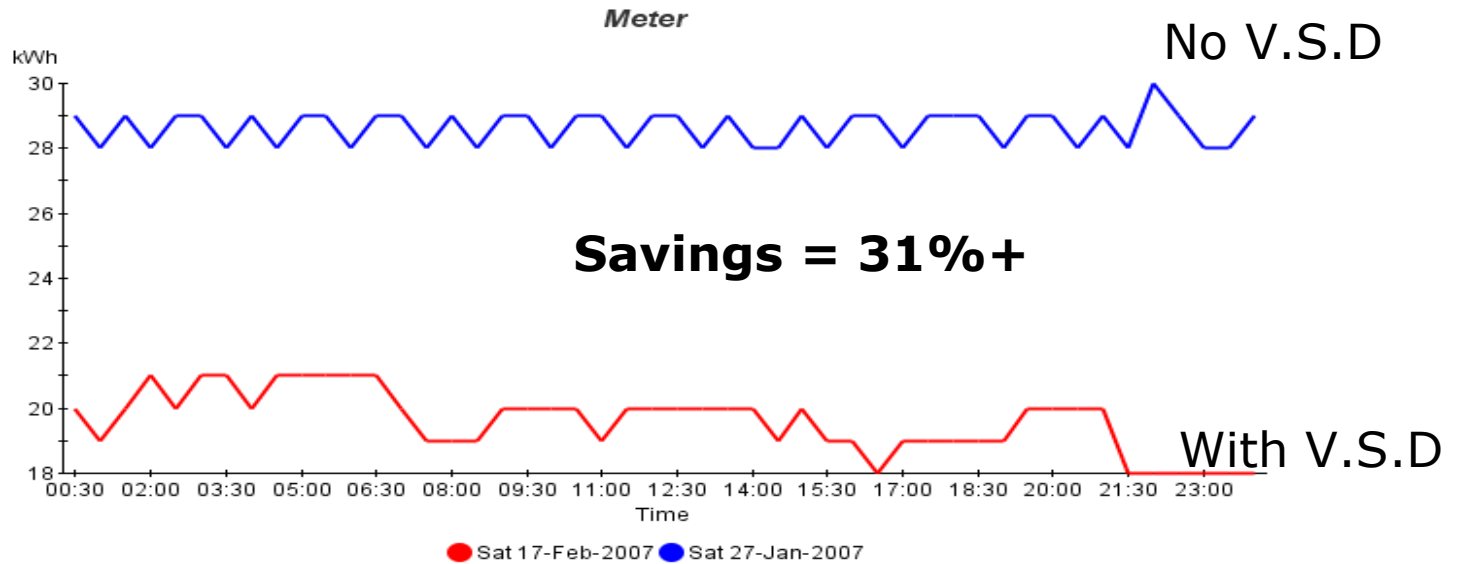


Statistics	Values day 1	Statistics.	Values day 2
<b>Total (kWh)</b>	<b>1401.00</b>	<b>Total (kWh)</b>	<b>1963.00</b>
<b>Period (minutes)</b>	<b>30.00</b>	<b>Period (minutes)</b>	<b>30.00</b>
<b>Maximum Demand (kW)</b>	<b>88.00</b>	<b>Maximum Demand (kW)</b>	<b>114.00</b>
<b>Average Demand (kW)</b>	<b>58.00</b>	<b>Average Demand (kW)</b>	<b>81.00</b>
<b>Load factor%</b>	<b>66.34</b>	<b>Load factor%</b>	<b>71.75</b>

# Day Consumptions Compared (Weekend)

Site : Compressors – 4  
Data Compared

Sat 17-Feb-2007(day1) and Sat 27-Jan-2007 (day2)



Statistics	Values day 1	Statistics.	Values day 2
<b>Total (kWh)</b>	<b>941.00</b>	<b>Total (kWh)</b>	<b>1374.00</b>
<b>Period (minutes)</b>	<b>30.00</b>	<b>Period (minutes)</b>	<b>30.00</b>
<b>Maximum Demand (kW)</b>	<b>42.00</b>	<b>Maximum Demand (kW)</b>	<b>60.00</b>
<b>Average Demand (kW)</b>	<b>39.00</b>	<b>Average Demand (kW)</b>	<b>57.00</b>
<b>Load factor%</b>	<b>93.35</b>	<b>Load factor%</b>	<b>95.42</b>

# Weekly Energy Report

## Compressors

### Channel: Electricity - Air Compressor 4 (No VSD)

\*Max Dem  
(kW)

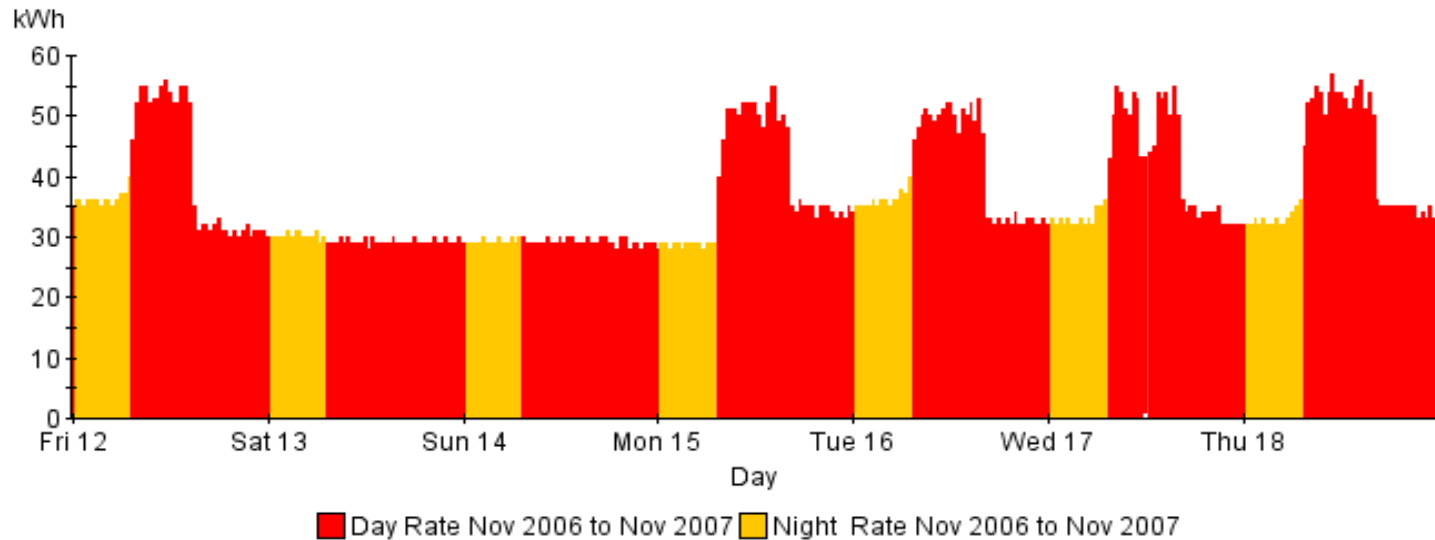
Date

114

18 Jan 11:30

Week ending: Thu 18-Jan-2007

*Consumption*



Date	Consumption (kWh)	Cost (£)
Fri 12/01/07	1,904	117.81
Sat 13/01/07	1,418	86.70
Sun 14/01/07	1,403	85.97
Mon 15/01/07	1,852	116.67
Tue 16/01/07	1,926	119.35
Wed 17/01/07	1,839	114.40
Thu 18/01/07	1,963	122.88
<b>Total</b>	<b>12,305</b>	<b>763.78</b>

# Weekly Energy Report

## Compressors

### Channel: Electricity - Air Compressor 4 (With VSD)

\*Max Dem  
(kW)

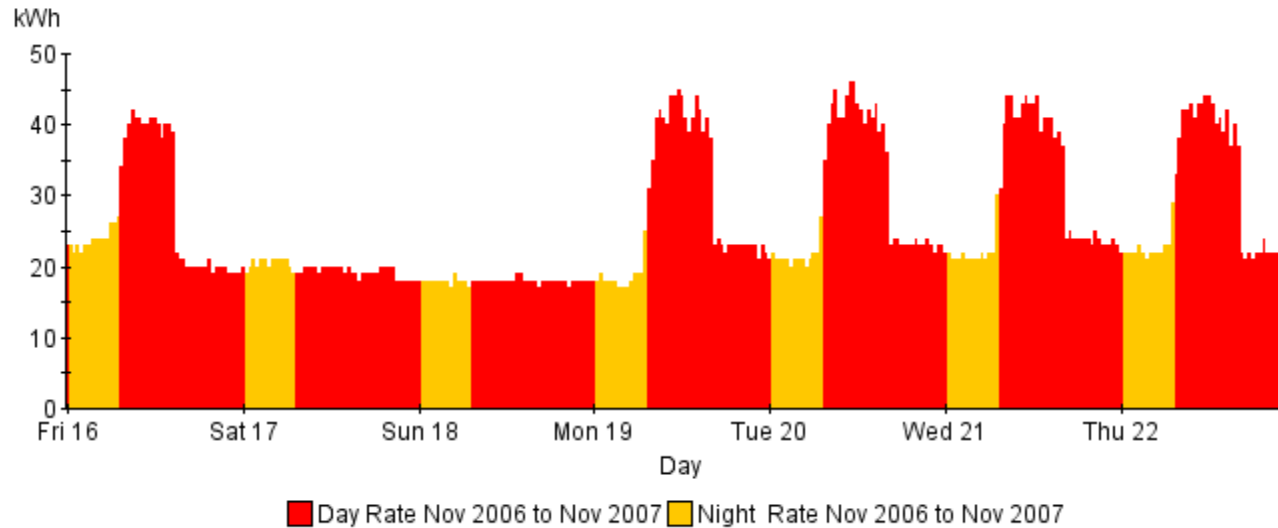
Date

92

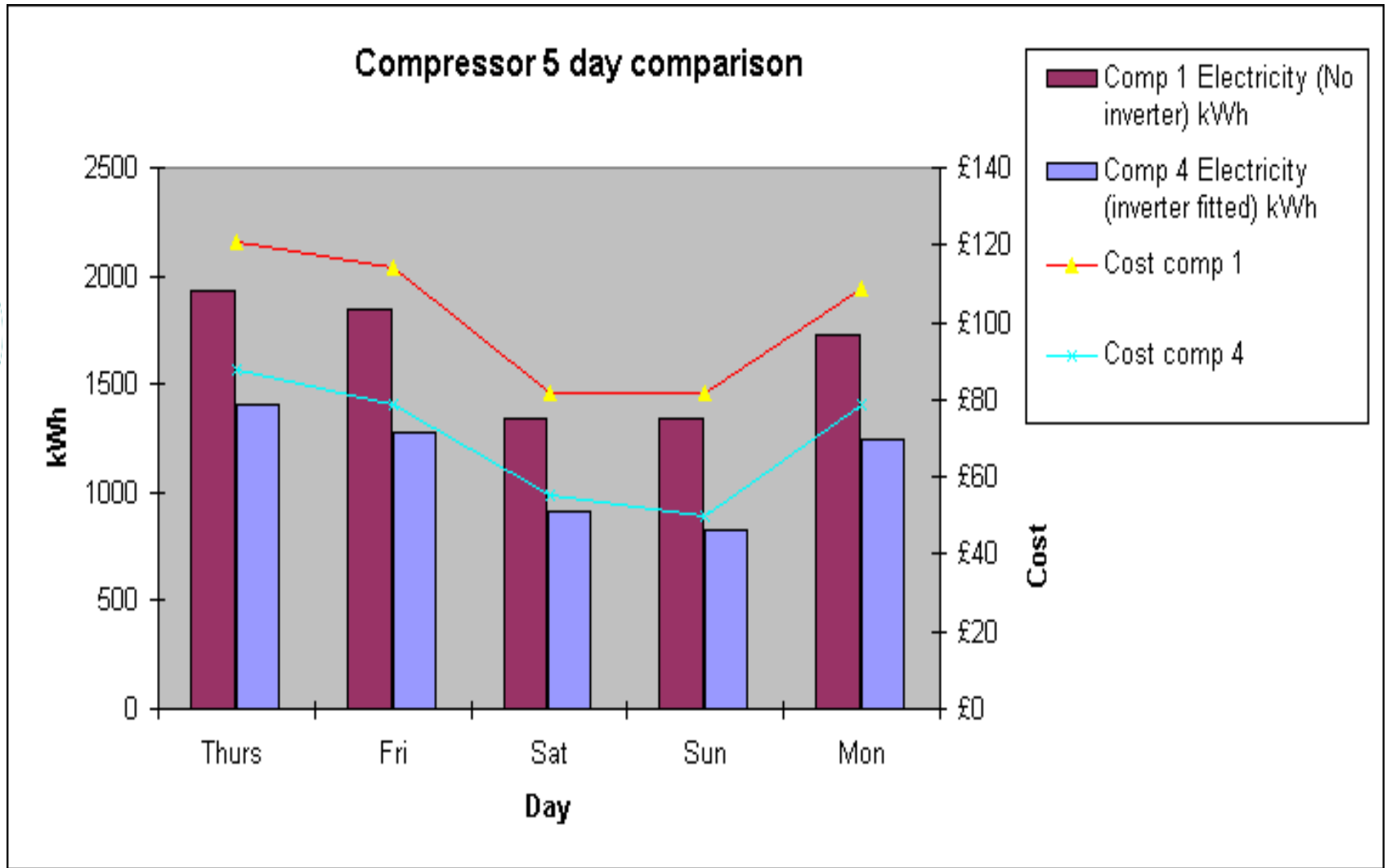
20 Feb 11:30

Week ending: Thu 22-Feb-2007

### Consumption



Date	Consumption (kWh)	Cost (£)
Fri 16/02/07	1,313	81.58
Sat 17/02/07	941	57.41
Sun 18/02/07	863	52.91
Mon 19/02/07	1,352	85.96
Tue 20/02/07	1,417	89.43
Wed 21/02/07	1,421	89.54
Thu 22/02/07	1,401	87.98
<b>Total</b>	<b>8,708</b>	<b>544.81</b>



**Compressors 1 & 4 compared.  
Same shift pattern very similar  
production throughput.**

## Cost Comparison

# Invoice for Usage

---

**Bill Period: 21-Feb-2007 to 27-Feb-2007**  
**Property: Compressors - Electricity - Air**  
**Compressor 4 (V.S.D Fitted)**

Breakdown:

Period	Cons. (kWh)	Rate (£)	Cost (£)
Day Rate Nov 2006 to Nov 2007	5,458	0.068	371.14
Night Rate Nov 2006 to Nov 2007	2,002	0.045	90.09
Sub Total	7,460		461.23

**Total Amount Due: £461.23**

## Cost Comparison

# Invoice for Usage

---

**Bill Period: 28-Feb-2007 to 06-Mar-2007**  
**Property: Compressors - Electricity - Air**  
**Compressor 1 (No V.S.D)**

Breakdown:

Period	Cons. (kWh)	Rate (£)	Cost (£)
Day Rate Nov 2006 to Nov 2007	7,997	0.068	543.80
Night Rate Nov 2006 to Nov 2007	3,020	0.045	135.90
Sub Total	11,017		679.70

**Total Amount Due: £679.70**



# SAVINGS (7 day working)

---

**£210 - £220 per week.**

**£ 10,500 - £11,000 per year based  
on 50 weeks working.**



# SAVINGS (5 day working)

---

**£150 - £160 per week.**

**£ 7,500 - £8,000 per year based on  
50 weeks working.**



# Payback on Investment

---

**Cost of Inverter and Installation =£15,000.**

**Payback period 7 day working =18 months.**

**Payback period 5 day working =24 months.**